CURRICULUM BOOKLET

DEPARTMENT OF ELEMENTARY AND TEACHER EDUCATION

FACULTY OF EDUCATION

LAHORE COLLEGE FOR WOMEN UNIVERSITY

VISION

"To develop a community of competent and committed practitioners who are able to create and sustain democratic and conducive environment for teaching and learning, enabling learners to become independent and lifelong learners."

B.ED (HON) ELEMENTARY 4 YR DEGREE PROGRAM

MISSION STATEMENT

The Mission of the B.Ed. (Hon) Elementary Program is to prepare prospective teachers in acquiring the knowledge, skills and dispositions needed to be successful, competent and professional educators, adopting innovative teaching strategies through a blend of content and professional courses, as defined by the National Professional Standards of Teachers of Pakistan.

PROGRAM GOALS

The four-year degree program initiated by HEC/USAID and accredited by NACTE is designed to help prospective teachers achieve the highest quality of teaching as described by the National Professional Standards for Teachers. Moving away from teacher-centered lectures, the new standards promote student-centered learning in Pakistani classrooms. Participants learn how to foster learner-centered, active learning, where teachers guide students in discussion and other interactive activities that make learning more engaging and meaningful. The prospective teachers acquire the knowledge, skills, and dispositions they need to help sustain good classroom practices.

PROGRAMME OBJECTIVES

The main objectives of B.Ed. (Hons.) 4 year Degree Program (Elementary) :

- To equip student teachers with the knowledge of psychology and growth, Islamic ethical values and improve their subject content knowledge.
- To transform existing orthodox system to modern education system through replacing traditional teaching styles with interactive teaching methodologies
- To foster learner centered, active learning environment by using learning strategies such as role play, brain storming, debates, and presentations to make learning engaging and meaningful.
- To equip student teachers with the use of Information and Communication technology in their lessons to add creativity in their lessons.
- To enable student teachers with skills to undertake action research and become reflective educators
- To equip the prospective teachers in achieving the ten professional standards for teachers as well as promote the student-centered learning in Pakistani Classrooms by inculcating the necessary knowledge, skills and dispositions as defined in the curricula.

PROGRAM OUTCOMES

After the completion of B.Ed. four-year programme, the learners will be able:

To display substantial proficiency in teaching with effective presentation skills and adequate content knowledge and become competent and effective teachers with research attitude.

They demonstrate effective cognitive and teaching skills for life long-learning and understand the significance of maintaining effective classroom environment and management skills.

They will be able to conduct an innovative and basic research study in an area of interest.

This programme enhanced their employability in various fields such as teaching etc.

Trained them in innovative teaching methods and research techniques.

MODE OF DELIVERY (CURRICULUM)

All the modules of the programme adequately delivered through the following modern approaches :

- Interactive Classroom teaching (pair/group work and active learning strategies such as role play, debates, presentations, brainstorming, etc).
- Problem solving
- Projects
- Inquiry method/Discovery method
- Exploration method
- Demonstration method
- Lecture method
- Discussion with peers and instructor
- Use of ICTs to facilitate learning and teaching

LAHORE COLLEGE FOR WOMEN UNIVERSITY LAHORE
EXAMINATION REGULATIONS

Approved by Syndicate in its 84th meeting held on 15-06-2022

1.3 CODE OF EXAMINATION

1.3.1 All Tests and Final Examinations shall take place within the premises of Main/ Sub Campus/ Affiliated Institutions of the University.

1.3.1.1 In extra-ordinary circumstances/ force majeure the Examination Centre can be created outside the premises of Main/ Sub Campus/ Affiliated Institutions of the University/ online, for the conduct of Final Examination, by the competent authority.

1.3.2 The medium of instructions and examination in Lahore College for Women University Lahore shall be English except in the case of Pakistani/ Regional/ Foreign/ oriental languages where Pakistani/ Regional/ Foreign/ oriental language may be used along with English.

1.3.3 The Mid Semester Test/ Quizzes/ Assignments/ Projects given to the students by their respective teachers shall be called ''Internal Assessment", while the examination at the end of the Semester/Academic Year shall be called "Final Examination". The final examination shall cover the whole prescribed syllabus in each course.

1.3.4 The Academic Calendar shall be notified by the Controller of Examinations at the beginning of the Session.

1.3.5 Under normal circumstances, schedule of the Tests and Final Examinations shall be strictly adhered to. Under special circumstances, the Chairperson of the respective department/ Principle of Affiliated Institution with the approval of the Controller of Examinations/ Vice Chancellor may change the schedule of Tests and Final Examinations and notify accordingly.

1.3.6 The attendance of the students appeared in the Tests/ Examinations shall be collected by the Examinations Coordinator and same shall be submitted in the office of Controller of Examinations at the end of Test/ Examinations.

1.3.7 The record of question papers/ marked answer scripts for Mid Semester Test / Assignments / Quizzes/ Projects etc. for internal assessment shall be preserved by the respective Department for at least Two years from the date of assessment.

1.3.8 The record of question papers and marked answer scripts for Final Examination shall be preserved by the Office of Controller of Examinations for at least Two years from the date of assessment.

1.3.9 The final result for each course shall be submitted by the concerned course instructor through Chairperson of Department/ Examination Coordinator of Affiliated Institution

Compulsory Courses	19
Professional Courses	50
Foundation Courses	24
Content Courses	27
Pedagogy	6
Teaching Practice	15
Total Credit Hours	141

Compulsory courses:

Course code	COURSES	Semester	credit hours
CC / B.Ed.-101	Functional English-I	1	3
CC / B.Ed.- 102	Islamic Studies/ Ethics	1	2
CC / B.Ed.-103	English-II (Communication Skills)	2	3
CC / B.Ed.- 104	Computer Literacy	2	3
CC / B.Ed.-105	General Mathematics	2	3
CC / B.Ed.-106	Pakistan Studies	2	2
CC / B.Ed.-301	English – III (Technical Writing & Presentation Skills)	5	3
	Total Credit Hours		19

Professional Courses

Course code	COURSES	Semester	credit hours
PC / B.Ed.- 101	Methods of Teaching Islamic Studies	2	3
PC / B.Ed.-201	Teaching Literacy Skills	3	3
PC / B.Ed.-202	Teaching of Urdu/ Regional Languages	3	3
PC / B.Ed.-203	Teaching of General Science	3	3
PC / B.Ed.-204	Instructional and Communication Technology (ICT) in Education	3	2
PC / B.Ed.- 205	Teaching of English	4	3
PC / B.Ed.-206	Teaching of Mathematics	4	3
PC / B.Ed.-207	Teaching of Social Studies	4	3
PC / B.Ed.-301	Contemporary Issues and Trends in Education	6	3
PC / B.Ed.-302	Comparative Education	6	3
PC / B.Ed.-303	Introduction to Guidance and Counseling	6	3
PC/ B.Ed. – 304	**STEAM Education in Elementary Classes**	**6**	**3**
PC / B.Ed.-401	Research Methods in Education	7	3
PC / B.Ed.-402	School Management	8	3
PC / B.Ed.- 403	Test Development and Evaluation	8	3
PC / B.Ed.- 404	**Statistics in Education and Data Analysis**	**8**	**3**
PC / B.Ed.-405	Research Project	8	3
	Total Credit Hours		50

Foundation Courses

Course codes	Courses	Semester	Credit hours
FC / B.Ed.- 101	Child Development	1	3
FC / B.Ed.- 102	General Methods of Teaching	1	3
FC / B.Ed.- 103	Classroom Management	2	3
FC / B.Ed.-201	Classroom Assessment	4	3
FC / B.Ed.-202	School, Community and Teacher	4	3
FC / B.Ed.- 301	Foundations of Education	5	3
FC / B.Ed.-302	Curriculum Development	5	3
FC / B.Ed.- 303	Educational Psychology	5	3
	Total Credit Hours		24

Content Courses

Course codes	Courses	Semester	Credit hours
CoC / B.Ed.-101	Urdu / Regional Languages (Content)	1	3
CoC / B.Ed.-102	General Science (Content)	1	3
CoC / B.Ed.- 201	Art, Crafts and Calligraphy (Content)	3	3
	SEMESTER 5		
CoC / B.Ed.- Reading 301	**Content Course – I** (from selected **discipline – I Reading Specialization**) **Foundations of Reading**	5	3
Content Course – I (from selected **discipline – II**) Choose any one of the following specialization Semester			
CoC / B.Ed.-Math 302	Mathematics I	5	3
CoC / B.Ed.-Sci 303	Integrated Science I	5	3
	SEMESTER 6		
CoC / B.Ed.-Reading 304	**Content Course – II** (from selected discipline – I Reading Specialization) **Reading Difficulties**	6	3
	Content Course – II (from selected **discipline – II**) Choose any one of the following specialization		
CoC / B.Ed.-Math 305	• Mathematics II	6	3
CoC / B.Ed.-Sci 306	• Integrated Science II	6	3
	SEMESTER 7		
CoC / B.Ed.-Reading 401	**Content Course – III** (from selected discipline– I Reading Specialization) **Reading Assessment**	7	3
	Content Course – III (from selected **discipline – II**) Choose any one of the following specialization		
CoC / B.Ed.-Math 402	Mathematics III	7	3
CoC / B.Ed.-Sci 403	Integrated Science III	7	3
	Total Credit Hours		27

Pedagogy/ Methods of Teaching in Specialization Courses

Course codes	Courses	Semester	Credit Hours
PeC / B.Ed.-Reading 401	Pedagogy– I (Methods of Teachings related to selected discipline – I, Reading Specialization) **(Teaching Reading)**	7	3
Pedagogy– II (Methods of Teachings related to selected discipline II)			
PeC / B.Ed.-Math 402	**Teaching of Mathematics II**	7	3
PeC / B.Ed.-Sci 403	Science **(Teaching Science II)**	7	3
	Total Credit Hours	15	

Teaching Practice

Course codes	Courses	Semester	Credit hours
TP / B.Ed.- 201	Teaching Practice (Short Term)	3	3
TP / B.Ed.- 202	Teaching Practice	4	3
TP / B.Ed.- 401	Teaching Practice (Short Term)	7	3
TP / B.Ed.-402	Teaching Practice (Long Term)	8	6
	Total Credit Hours		15

SEMESTER I

Course code	COURSES	credit hours
CC/ B.Ed.-101	Functional English-I (Compulsory)	3
CC /B.Ed.-102	Islamic Studies/ Ethics(Compulsory)	2
FC/ B.Ed.-101	Child Development (Foundation)	3
FC/ B.Ed.-102	General Methods of Teaching (Foundation)	3
CoC/ B.Ed.-101	Urdu / Regional Languages (Content)	3
CoC/ B.Ed.-102	General Science (Content)	3
	Total Credit Hours	17

CC/ B.Ed.-101	FUNCTIONAL ENGLISH-I (COMPULSORY)	Credit Hours 3

COURSE OBJECTIVES

After completing this course, pre-service teachers/teachers will:

have improved their listening and reading skills in English following significant exposure to texts in the target language

be able to communicate in written and oral English with class-fellows, peers and teachers

rely less on first/native language and reduce their use of code-switching in formal and informal situations

have a deeper understanding of correct English structures in descriptive, narrative and instructional texts.

SUGGESTED TEACHING APPROACHES

The course uses an integrated approach to language teaching which enables learning of all the four skills of language i.e. listening, speaking, reading and writing, in natural settings. The teachers and student teachers are encouraged to respond through pair/group work and active learning strategies such as role play, debates, presentations, brainstorming, etc. Teachers and student teachers are encouraged to use online resources and make the best use of the interactive exercises in various websites. The course links learning approaches with assessment tasks to provide student teachers with the opportunity to accept responsibility for their own learning.

Even if student teachers begin the course unable to communicate fluently in English, instructors will use English as the language of instruction. Instead of switching to Urdu or other languages when there is a problem, instructors will use other strategies such as slowing down, repeating a text, asking others to explain, or using simpler vocabulary.

RECOMMENDED ASSESSMENT

The course uses an integrated approach to language teaching which enables learning of all the four skills of language i.e. listening, speaking, reading and writing, in natural settings. The teachers and student teachers are encouraged to respond through pair/group work and active learning strategies such as role play, debates, presentations, brainstorming, etc. Teachers and student teachers are encouraged to use online resources and make the best use of the interactive exercises in various websites. The course links learning approaches with assessment tasks to provide student teachers with the opportunity to accept responsibility for their own learning.

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COURSE CONTENT

UNIT 1 – INTRODUCTIONS

Making introductions

- Make effective self and peer introductions
- Take useful introductory notes

Requests and enquiries

- Make appropriate requests and enquiries
- Respond to enquiries
- Listen for specific information in English.

Practice Practical Classroom English

- Use different classroom language routines (functions) for effective classroom management
- Develop effective classroom language by following the given examples/ situations
- Demonstrate and practice practical classroom language routines.

UNIT 2 – SOCIAL INTERACTION

Greetings

- Greeting friends and family on different occasions/reasons
- Responding to a happy event
- Using formal greeting expressions appropriately

Saying thank you

- Using formal/ informal expressions of gratitude appropriately
- Reading a story which uses expressions of gratitude
- Writing a formal letter to say thank you to a teacher/parent/friend

Inviting people

- Demonstrating the use of formal and informal expressions of invitation
- Developing verbal and written skills for invitations
- Responding to invitation requests (accepting and declining)

Regrets

- Expressing regrets orally and in writing in an appropriate manner
- Saying sorry and accepting apologies

UNIT 3 – GIVING AND FOLLOWING DIRECTIONS

Following and giving directions

- Following directions from a map
- Giving directions for a location in oral and written forms
- Reaching a destination

Giving clear instructions

- Carrying out instructions
- Structuring instructions
- Writing clear instructions

Designing instruction manuals

- Exploring instruction manuals of different products
- Comparing instruction manuals for developing critical understanding of the essentials of a manual
- Designing an instruction manual for a new student enrolling in college. This could be group project.

UNIT 4 - SHARING EXPERIENCES

Sharing narratives

- Reading short stories
- Reading excerpts; comic strips, interviews, etc.

Sharing unique experiences

- Summarizing/Narrating true stories
- Solving word puzzles to develop language awareness
- Reading a short stories followed by exercises/worksheet
- Converting an event into a short story
- Using pictures as stimuli for narrative creation
- Using songs as examples of personal experience

Imaginative texts

- Identifying imaginative texts
- Developing imaginative texts by giving engrossing stories and descriptions of scenes

UNIT 5 – FUNCTIONING IN ENGLISH

Writing styles

- Changing narration: converting a dialogue into a report
- Converting a story into a news report
- Converting a graph/picture into short report/story

Writing mechanics

- Punctuation and structure
- Sentences, Fragments and run-ons
- Subject-predicate and pronoun-reference agreement

- Project presentations
- Course Revision

SUGGESTED TEXTBOOKS AND REFERENCES

1. Carver, T.K. & Fortinos-Riggs, S. (2006) *Conversation Book II – English in Everyday Life*. New York,
2. Eastwood, J. (2005) *Oxford Practice Grammar*, Karachi:

   Oxford University Press. Swan, J. *Practical English Usage* (3rd editions) Oxford University Press
3. Thomson and Martinet, *A practical English Grammar (Intermediate)* Oxford University Press
4. Allama Iqbal Open University *Compulsory English 1 (Code 1423)*
5. Watcyn-Jones, P. (1981). *Pair Work 2: Intermediate to Upper-intermediate*. Penguin.
6. Woodward, S. W., & Azar, B. S. (1997). *Fun with grammar: communicative*

activities for the Azar Grammar series. Prentice Hall Regents.
7. English For Social Interaction Social Expressions (2004) Betty Kirkpatrick, Learners Publishing Ltd
8. Clementson, T. (2005). Natural English Pre-Intermediate Reading And Writing Skills Resource Book.
9. Bruder, M. N., & Tillitt, B. (2006). *Speaking naturally*. Cambridge: Cambridge UP.
10. Wren P.C., Martin H.-English Grammar and Composition. New Edition

The following websites provide a variety of useful resources:

http://www.bbc.co.uk/worldservice/learningenglish/

http://learnenglish.britishcouncil.org/en/

http://www.teachingenglish.org.uk/

Grammar software free download
http://freesoftwarepc.biz/educational-software/download-free-software-3d-grammar-english-portable/

CC /B.Ed.-102	ISLAMIC STUDIES/ ETHICS (COMPULSORY)	Credit Hours 2

COURSE OBJECTIVES

This course is aimed at:

1. To provide Basic information about Islamic Studies
2. To enhance understanding of the students regarding Islamic Civilization
3. To improve Students skill to perform prayers and other worships
4. To enhance the skill of the students for understanding of issues related to faith and religious life.

SUGGESTED TEACHING APPROACHES

Interactive Lectures/discussions/debates/ timelines/ posters and active learning strategies. Use of Graphic organizers, debates, presentations, discussions, active learning strategies, jigsaw reading. Students will collaborate on performance-based tasks such as performing role plays, making informational posters, timelines to elaborate the topics taught.

RECOMMENDED ASSESSMENT

The students will have to submit two major assignments on related topics, two presentations, a group project and quizzes besides the mid and final term examination.

COURSE CONTENT:

Introduction to Quranic Studies

1) Basic Concepts of Quran
2) History of Quran
3) Uloom-ul -Quran

Study of Selected Text of Holly Quran

1) Verses of Surah Al-Baqra related to Faith (Verse No-284-286)
2) Verses of Surah Al-Hujrat related to Adab Al-Nabi (Verse No-1-18)
3) Verses of Surah Al-Mumanoon related to Characteristics of faithful (Verse No-1-11)
4) Verses of Surah al-Furqan related to Social Ethics (Verse No.63-77)
5) Verses of Surah Al-Inam related to Ihkam(Verse No-152-154)

Study of Selected Text of Holy Quran

1) Verses of Surah Al-Ihzab related to Adab al-Nabi (Verse No.6,21,40,56,57,58.)
2) Verses of Surah Al-Hashar (18,19,20) related to thinking, Day of Judgment
3) Verses of Surah Al-Saf related to Tafakar,Tadabar (Verse No-1,14)

Seerat of Holy Prophet (S.A.W)

1) Life of Muhammad Bin Abdullah (Before Prophet Hood)
2) Life of Holy Prophet (S.A.W) in Makkah
3) Important Lessons derived from the life of Holy Prophet in Makkah

Seerat of Holy Prophet (S.A.W) II

1) Life of Holy Prophet (S.A.W) in Madina

2) Important Events of Life Holy Prophet in Madina
3) Important Lessons Derived from the life of Holy Prophet in Madina

Introduction To Sunnah

1) Basic Concepts of Hadith
2) History of Hadith
3) Kinds of Hadith
4) Uloom –ul-Hadith
5) Sunnah & Hadith
6) Legal Position of Sunnah

Selected Study from Text of Hadith

Introduction To Islamic Law & Jurisprudence

1) Basic Concepts of Islamic Law & Jurisprudence
2) History & Importance of Islamic Law & Jurisprudence
3) Sources of Islamic Law & Jurisprudence
4) Nature of Differences in Islamic Law
5) Islam and Sectarianism

Islamic Culture & Civilization

1) Basic Concepts of Islamic Culture & Civilization
2) Historical Development of Islamic Culture & Civilization
3) Characteristics of Islamic Culture & Civilization
4) Islamic Culture & Civilization and contemporary issues

Islam & Science

1) Basic Concepts of Islam & Science
2) Contributions of Muslims in the Development of Science
3) Quranic & Science

Islamic Economic System

1) Basic Concepts of Islamic Economic System
2) Means of Distribution of wealth in Islamic Economics
3) Islamic Concept of Riba
4) Islamic Ways of Trade & Commerce

Political System of Islam

1) Basic Concepts of Islamic Political System
2) Islamic Concept of Sovereignty
3) Basic Institutions of Government in Islam

Islamic History

1) Period of Khlaft-E-Rashida
2) Period of Ummayyads
3) Period of Abbasids

Social System of Islam

1) Basic Concepts of Social System Of Islam
2) Elements of Family
3) Ethical Values of Islam

Reference Books:

1. Ahmad Hasan, (1993), "*Principles of Islamic Jurisprudence*" Islamic Research Institute: Islamabad:Pakistan, International Islamic University.
2. Bhatia, H. S. (1989) "*Studies in Islamic Law, Religion and Society*" New Delhi: Deep & Deep PublicationsDr. Muhammad Zia-ul-Haq, (2001). "*Introduction to Al Sharia Al Islamia*" Islamabad, Pakistan: Allama Iqbal Open University
3. Hameed ullah Muhammad, „*Introduction to Islam Mulana Muhammad Yousaf Islahi*,"
4. Hameed ullah Muhammad, "*Emergence of Islam*" , Islamabad: IRI.
5. Hameed ullah Muhammad, "*Muslim Conduct of State*" Islamabad, Pakistan: Hussain Hamid
6. .Mir Waliullah, (1982), "*Muslim Jurisprudence and the Quranic Law of Crimes*" Islamic Book Service.
7. Our Prophet: Life in Madinah, Abdullah Ghazi & Tasneema Ghazi, IQRA International Educational Foundation,
8. Islamic Studies: Book 1 (2004). Abu Ameenah Bilal Philips
9. Islam Beliefs and Practices (2016) Yasmin Malik. Goodread Publishers
10. Islamiat for students (2020) Farkhanda Noor Muhammad, Ferozesons Pvt Ltd

Web Resources

Wan, N. H. W. J., & Kamaruzaman, J. (2009). Using multimedia in teaching Islamic studies. *Journal of Media and Communication Studies*, *1*(5), 086-094.

Ahmad, K. B. (2011). Islamic studies and Islamic education in contemporary Southeast Asia.

Ashaari, M. F., Ismail, Z., Puteh, A., Samsudin, M. A., Ismail, M., Kawangit, R., ... & Ramzi, M. I. (2012). An assessment of teaching and learning methodology in Islamic studies. *Procedia-Social and Behavioral Sciences*, *59*, 618-626.

Khir, B. M. (2007). Islamic Studies within Islam: Definition, approaches and challenges of modernity. *Journal of Beliefs & Values*, *28*(3), 257-266.

FC/ B.Ed.- 101	CHILD DEVELOPMENT (FOUNDATION)	3

COURSE OBJECTIVES

1. After completing this course, pre-service teachers/teachers will be able to:
2. Describe major theories and big themes in how children develop
3. Compare the characteristics of various developmental stages according to various theorists
4. Identify factors influencing the learning process
5. Design different age appropriate teaching methods based on developmental theory
6. Identify individual differences of students and children with special needs
7. Design different age appropriate teaching strategies based on developmental theory
8. Reflect on their conceptions about child development and its implications for teaching and learning.

SUGGESTED TEACHING APPROACHES

A variety of teaching and learning approaches will be used throughout the course, for example, group work, peer learning, class debates and discussions. Students will collaborate on performance-based tasks such as performing role plays, making informational posters, and writing letters to teachers. The course links learning approaches and assessments to provide Prospective Teachers with opportunity to accept responsibility for their own learning.

RECOMMENDED ASSESSMENT

The students will have to submit two major assignments on related topics, two presentations, a group project and quizzes besides the mid and final term examination.. A variety of tasks will be used throughout the course, for example, group work, peer learning, class debates and discussions. Students will collaborate on performance-based tasks such as performing role plays, making informational posters, and writing letters to teachers.

COURSE CONTENT

Unit 1 – Course Introduction

- Overview of Growth and Development as a Holistic Process
- Psycho-social Models
- Behaviourism and Socio-cultural Models
- Cognitive Models
- Factors that affect the child: Key Issues and Controversies (3 Big Debates)
- Approaches to classroom development

Unit 2 – Early Childhood Development (2 weeks/6 hours)

- Unit Introduction and Infant Development
- 3 Domains of Toddler Development
- Developmentally Appropriate Practices for Toddlers
- 3 Domains of Preschool Child Development
- Developmentally Appropriate Practices for Preschool Child

- Unit Review

Unit 3 – Elementary School-Age Child Development (3 weeks/9 hours)

- Introduction to Elementary Child Development
- Aspects of Physical Development
- Encouraging Healthy Physical Development
- Cognitive Development: Overview and Piaget' Concrete Operational Theory
- Cognitive Development: Industriousness and Intelligences
- Emotional Development
- Social Development: Changes and Parental Roles
- Social Development: Peer Interaction, Friendship, and Growth
- The Role of Play in Primary Child Development and Unit Review

Unit 4 - Adolescence and Development

- Intro and overview of physical development
- Physical dev. II: Individual/group differences
- Social/emotional dv. I: Erikson, self and identity
- Social/emotional dev. II: Adolescent peer group
- Social/emotional dev. III: Motivation/self-regulation
- Cognitive/linguistic dev. I: Piaget
- Cognitive/linguistic dev. II: Vygotsky
- Cognitive/linguistic dev. III: Appropriate assessment Critics of adolescent developmental theory Conclusion/review

Unit 5 – Differences in Development and Special Needs

- Differences in student learning styles
- Alternative sessions:
  Understanding differences in light of Child development across the elementary and middle school years or
- Gardner's multiple intelligences theory and special needs students
- Critique of Gardner's theory
- Scaffolding different learning styles
- Recognizing disability and learning disorders I - emotional and behavioural
- Recognizing disability and learning disorders II - language, physical and sensory
- Cognitive differences: Delays and giftedness
- Addressing special needs in the classroom
- The perspective of national policy
- Unit reflection and review

Unit 6 – Inclusive Education (3 weeks/9 hours)

- Concept of inclusive education
- Inclusive education global practices
- Inclusive education in Pakistan

- Integrity, mainstreaming, reasonable accommodation
- Inclusive education challenges and way forward in Pakistan

SUGGESTED REFERENCES

1. Bredekamp, S. & Copple, C. (eds.) (1999). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8.* Washington, D.C.: National Association for the Education of Young Children.

2. Child Development Institute, http://childdevelopmentinfo.com/

3. Early Childhood Development (ECD) Pakistan Website: http://www.ecdpak.com/

4. Howes, C. & Ritchie, S. (2002). *A Matter of Trust: Connecting Teachers and Learners in the Early Childhood*
5. *Classroom.* New York: Teachers College Press.

6. Howes, C. (2012). *Culture and Child Development in Early Childhood Programs:*
7. *Practices for Quality Education and Care.* New York: Teachers College Press.

8. RCC; ECD Programme. *Nurture: Pakistan's Pioneer Publication on Early Childhood Development.*

9. Steinberg, L. (1999). *Adolescence, fifth edition.* McGraw-Hill.

10. Santrock, John W. (2013). Child development. [Boston]: McGraw-Hill.

Web Resources

http://www.ecdpak.com/nurture/about_nurture.html

Search-Institute. 40 Developmental Assets for Early Childhood, K-3, Middle Childhood, & Adolescents. http://www.search-institute.org/developmental-assets/lists

Encyclopedia on Early Childhood Development: (Available in English and Urdu)
http://www.child-encyclopedia.com/en-ca/home.html

CoC/ B.Ed.-101	URDU / REGIONAL LANGUAGES (CONTENT)	3

COURSE OBJECTIVES

اس کورس کی تکمیل کے بعد زیرِ تربیت اساتذہ اس قابل ہو جائیں گے کہ وہ:

- اردو زبان کی ساخت، وسعت اور اہلیت سے آگاہی حاصل کر سکیں۔
- ادبیات کو زبان کے عملی تناظر میں زندگی کے حوالے سے سمجھ سکیں۔
- مختلف موضوعات کو عملی و تحریری انداز میں بیان کر سکیں۔
- اردو کے ابلاغ میں جدید رجحانات کے تحت نئی جہتوں پر عمل کر سکیں۔
- زبان کے استاد کی حیثیت سے اپنی صلاحیتوں کی تنظیمِ نو کر سکیں۔

SUGGESTED TEACHING APPROACHES

تعلّمی اور تدریسی رسائی: (LEARNING AND TEACHING APPROACH)

اس کورس کی ترتیبِ نو کے مقاصد کو پیشِ نظر رکھتے ہوئے تعلّمی اور تدریسی رسائی میں جدید و قدیم تدریسی طریقے مثلاً ترکیبی، تحلیلی، مخلوطی استقرائی، استخراجی، انکشافی اور خصوصاً فنکشنل و عملی جیسے مستند طریقے استعمال کیے گئے ہیں سوالات کا اسلوب، سمعی بصری معاونات کا بروقت استعمال، انٹرنیٹ سے استفادہ، پیرلرننگ جیسی تدریسی تکنیکوں کا ماہرانہ انداز میں موقع پر برتنا سکھایا گیا ہے جو ایک مشاق استاد کی تدریسی حکمتِ عملی سے مزید کارآمد ہے۔

RECOMMENDED ASSESSMENT

تعلّمی اور تدریسی رسائی: (LEARNING AND TEACHING APPROACH)

اس کورس کی ترتیبِ نو کے مقاصد کو پیشِ نظر رکھتے ہوئے تعلّمی اور تدریسی رسائی میں جدید و قدیم تدریسی طریقے مثلاً ترکیبی، تحلیلی، مخلوطی استقرائی، استخراجی، انکشافی اور خصوصاً فنکشنل و عملی جیسے مستند طریقے استعمال کیے گئے ہیں سوالات کا اسلوب، سمعی بصری معاونات کا بروقت استعمال، انٹرنیٹ سے استفادہ، پیرلرننگ جیسی تدریسی تکنیکوں کا ماہرانہ انداز میں موقع پر برتنا سکھایا گیا ہے جو ایک مشاق استاد کی تدریسی حکمتِ عملی سے مزید کارآمد ہے۔

COURSE OUTLINE

نصاب برائے نفسِ مضمون/ اردو مافیہ (Content)

- کورس کا بیان (COURSE DESCRIPTION)
- حاصلاتِ کورس (COURSE OUTCOMES)
- تعلّمی اور تدریسی رسائی: (LEARNING AND TEACHING APPROACHE)
- یونٹ (UNIT)

۱۔ تعارفِ زبان

۲۔ اصنافِ ادب

۳۔ اصنافِ سخن (نظم و غزل)

۴۔ انشا پردازی

۵۔ اردو کے جدید رجحانات

- حوالہ جات (REFERENCES)
- اسائنمنٹ (مختلف موضوعات) (ASSIGNMENTS)
- کورس سے متعلق لازمی معلومات
- اردو سے متعلق غلط فہمیوں کا اِزالہ
- تفصیلی سبقی خاکے

یونٹ ا

تعارفِ زبان

تعارف:

اس یونٹ میں زبان کی اہلیت کے وسیع تر موضوعات کو شامل کیا گیا ہے تا کہ اردو کے استاد کو ادب پر فنی اور زبان پر حتی الامکان دسترس حاصل ہو۔ جہاں زبان کی تاریخی حیثیت کے حوالے سے بابائے اردو مولوی عبدالحق کی کاوشوں کو سراہا گیا ہے وہیں ڈاکٹر محمد صدیق خان شبلی کے مضمون عملی، فنکشنل اردو سے بھرپور استفادہ کیا گیا ہے تا کہ نوآموز اساتذہ جدید تدریسی تکنیک اور مہارتوں کو بروئے کار لا سکیں۔ ان طریقوں سے تدریس کو ایک منظم سائنس کی صورت میں پڑھانے کے لیے کئی ایک اصولوں کو بھی اختیار کیا جائے گا۔ مثلاً: الفاظ کی بار بار مشق، تذکیر و تانیث، واحد و جمع، جملہ سازی، انتخابی مشقیں۔ ان طریقوں میں بنیادی تدبیریں استعمال کی جائیں گی۔ جو مثبت نتائج کا باعث بنیں گی۔ تا کہ ایلیمنٹری سطح کے اساتذہ زبان و ادب کی تدریس میں جدید طریقے استعمال کر سکیں۔

پہلا ہفتہ

- تعارف زبان (اردو زبان کی ترقی کا پس منظر و پیش منظر)
- زبان کی اہمیت و افادیت (فکری/فنی/عملی سطح پر)
- اردو کے فروغ میں درپیش مشکلات (تدارک/غلط فہمیوں کا ازالہ)

دوسرا ہفتہ

- اردو زبان کی کہانی از بابائے مولوی عبدالحق (مضمون کا مطالعہ)
- عملی/فنکشنل اردو ڈاکٹر محمد صدیق خان شبلی (مضمون کا مطالعہ)
- مصنفین کا تعارف اور تعمیری کردار (اردو زبان کے حوالے سے)

یونٹ ۲

اصنافِ ادب

(صرف ونحو تدریسِ ادبیات کا حصہ ہیں)

تعارف:

اس یونٹ میں اردو ادب کی اصناف کا مختصر تعارف شامل ہے۔نثری اصناف میں داستان، ناول، ڈراما، مضمون، آپ بیتی، مکالمہ اور طنز ومزاح شامل ہیں۔تا کہ ایلیمینٹری اساتذہ نثر کی تمام اصناف سے واقفیت حاصل کر سکیں۔مثلاً مزاح ادب کی صنف ہے اور طنز صفتِ ادب ہے۔علاوہ ازیں فن پارے کا تنقیدی جائزہ لینے کے اس کی ہیت کا ادراک ضروری ہے۔اس یونٹ میں ادبی اصطلاحات/قواعد کو جدید، عملی، فنکشنل اور ثقافتی طریقوں کے ذریعے روزمرہ زندگی سے مربوط کر کے پڑھایا جائے گا تا کہ قواعد نفسِ مضمون کا حصہ بن جائے اور زبان شناسی پر عبور کا باعث بن جا سکے۔ اسی ضرورت کے تحت اس کورس میں ادبی اصطلاحات کے ساتھ طلبہ جدید تعلیمی اصطلاحات کا استعمال بھی سیکھیں گے۔

مثلاً (زبانی انداز تعلیم (Oral Approach) اور صورت حال کے مطابق تدریس زبان Situational Language (Teaching) جیسی اصطلاحات حالیہ دور کی پیداوار ہیں جن کا مقصد لسانی سانچوں کی تدریس کو بہتر بنانا ہے۔تا کہ اسباق کی تدریس کے ساتھ جانچ (Testing) اور مشق (Exercise) کا کام بھی چلتا رہے۔ان مقاصد کے حصول کے لیے سب سے پہلا قدم بے تکلف گفتگو کے مواقع پیدا کرنا ہے۔مثلاً سننا بولنا تو سننے اور بولنے ہی سے آتا ہے۔لہذا اس یونٹ میں سننے اور بولنے کے زیادہ سے زیادہ مواقع فراہم کیے جائیں گے۔

تیسرا ہفتہ

- اصنافِ نثر کا مختصر تعارف اجزا و اقسام/اصناف کا تقابل
- داستان (اجزا/ناول و داستان کا فرق)
- ناول (اقسام/ناول و افسانہ کا فرق)

چوتھا ہفتہ

- ڈراما (اقسام/اجزائے ترکیبی/روایت)
- افسانہ نگاری کا تعارف اشفاق احمد کے ''گڈریا'' کے حوالے سے (فکری و فنی تجزیہ)
- طنز و مزاح مشتاق احمد یوسفی کی مزاح نگاری کے حوالے مزاح اور طنز میں فرق کی وضاحت

پانچواں ہفتہ

- ماخوذ اقتباسات (صرف یعنی الفاظ سے بحث، نحو مکمل جملوں اور عبارتوں سے بحث)
- اغلاطِ زبان (بلحاظ قواعد فقروں کی تصحیح)
- محاورات (دورانِ گفتگو/عام بول چال میں استعمال)

یونٹ ۲

اصنافِ ادب

(صرف ونحو تدریسِ ادبیات کا حصہ ہیں)

تعارف:

اس یونٹ میں اردو ادب کی اصناف کا مختصر تعارف شامل ہے۔ نثری اصناف میں داستان، ناول، ڈراما، مضمون، آپ بیتی، مکالمہ اور طنز و مزاح شامل ہیں۔ تاکہ ایلیمنٹری اساتذہ نثر کی تمام اصناف سے واقفیت حاصل کر سکیں۔ مثلاً مزاح ادب کی صنف ہے اور طنز صفتِ ادب ہے۔ علاوہ ازیں فن پارے کا تنقیدی جائزہ لینے کے اس کی ہیت کا ادراک ضروری ہے۔ اس یونٹ میں ادبی اصطلاحات/قواعد کو جدید، عملی، فنکشنل اور ثقافتی طریقوں کے ذریعے روزمرہ زندگی سے مربوط کر کے پڑھایا جائے گا تاکہ قواعد نفسِ مضمون کا حصہ بن جائے اور زبان شناسی پر عبور کا باعث بن جا سکے۔ اسی ضرورت کے تحت اس کورس میں ادبی اصطلاحات کے ساتھ طلبہ جدید تعلیمی اصطلاحات کا استعمال بھی سیکھیں گے۔

مثلاً (زبانی اندازِ تعلیم (Oral Approach) اور صورت حال کے مطابق تدریس زبان Situational Language (Teaching) جیسی اصطلاحات حالیہ دور کی پیداوار ہیں جن کا مقصد لسانی سانچوں کی تدریس کو بہتر بنانا ہے۔ تاکہ اسباق کی تدریس کے ساتھ جانچ (Testing) اور مشق (Exercise) کا کام بھی چلتا رہے۔ ان مقاصد کے حصول کے لیے سب سے پہلا قدم بے تکلف گفتگو کے مواقع پیدا کرنا ہے۔ مثلاً سننا بولنا تو سننے اور بولنے ہی سے آتا ہے۔ لہٰذا اس یونٹ میں سننے اور بولنے کے زیادہ سے زیادہ مواقع فراہم کیے جائیں گے۔

تیسرا ہفتہ

- اصنافِ نثر کا مختصر تعارف اجزا و اقسام/ اصناف کا تقابل
- داستان (اجزا/ ناول و داستان کا فرق)
- ناول (اقسام/ ناول و افسانہ کا فرق)

چوتھا ہفتہ

- ڈراما (اقسام/ اجزائے ترکیبی/ روایت)
- افسانہ نگاری کا تعارف اشفاق احمد کے ''گڈریا'' کے حوالے سے (فکری و فنی تجزیہ)
- طنز و مزاح مشتاق احمد یوسفی کی مزاح نگاری کے حوالے مزاح اور طنز میں فرق کی وضاحت

پانچواں ہفتہ

- ماخوذ اقتباسات (صرف یعنی الفاظ سے بحث، نحو مکمل جملوں اور عبارتوں سے بحث)
- اغلاطِ زبان (بلحاظ قواعد فقروں کی تصحیح)
- محاورات (دورانِ گفتگو/ عام بول چال میں استعمال)

چھٹا ہفتہ

- ضرب الامثال (تعارف، تلمیح اور ضرب الامثال میں فرق)
- اوصافِ خوش خوانی (تلفظ، لب ولہجہ، روانی، تاکید، تفصیل)
- تحت اللفظ (نثر ونظم سے عملی مشق)

یونٹ ۳

اصنافِ سخن (نظم وغزل)

تعارف:

زیرِ بحث یونٹ میں شعری اصناف، حمد، نعت، غزل، پیروڈی اور گیت شامل ہیں۔ اس یونٹ کا عملی پہلو یہ ہے کہ شعرائے کرام کے منظوم فن پاروں کا ایک استاد کی حیثیت سے فکری وفنی، تقابلی وتحلیلی تجزیہ پیش کر سکے۔ مثلاً میرؔ کا ترکیبی شعر ہے۔

فقیرانہ آئے صدا کر چلے
میاں خوش رہو ہم دعا کر چلے

یہی خیال غالبؔ کے ہاں تحلیلی رنگ میں ملاحظہ فرمایئے!

بنا
تماشائے اہلِ کرم دیکھتے ہیں

قوتِ حافظہ، فکر اور تخیل کی تربیت اس جہت کا لازمہ ہے۔ اس کوشش کو عملی رنگ دینے کے لیے تمثیل، رول پلے، تحت اللفظ اور فی البدیہ نظم گوئی کے رجحان کو فروغ دیا جائے گا۔

ساتواں ہفتہ

- اصنافِ سخن کا تعارف
- اردو نظم (تعارف، اقسام)
- اردو غزل (نظم اور غزل میں فرق)

آٹھواں ہفتہ

- علامہ محمد اقبال کی نظم ''روحِ ارضی آدم کا استقبال کرتی ہے''۔

- مولانا الطاف حسین حالؔی کی نظم مسدس حالؔی کے پہلے چار بند
- پس منظر کے تحت منظومات کی تشریح

نواں ہفتہ

- مرزا اسداللہ خاں غالبؔ کی غزل/"بازیچہء اطفال ہے دنیا میرے آگے"
- صوفی غلام مصطفیٰ تبسم کی غزل "یہ کیا کہ اک جہاں کو کرو وقفِ اضطراب" کے پہلے پانچ اشعار
- شعرا کا فکری وفنی تقابل

دسواں ہفتہ

- پرائمری سطح کی نظمیں (کلام پر اظہارِ خیال، تمثیل)
- وسطانی سطح کی نظمیں (کلام کی خوبیاں، تبصرہ)
- تحت اللفظ اور فی البدیہہ نظم گوئی

یونٹ ۴

انشا پردازی

تعارف:

آج ضرورت ایسی اُردو کی ہے جو روزمرہ زندگی میں زبان کے استعمال یعنی "کس موقع پر کیسی زبان بولی جائے" کے اصول پر سکھائی جائے۔ جس کا مقصد طالب علم کو مختلف صورتوں میں زبان کے استعمال کے قابل بنانا ہے۔ اس لیے فنکشنل اُردو کا مطلب روزمرہ کی اُردو ہے۔ یہ اُردو ادبی اور علمی اُردو سے مختلف ہوگی۔ اس کے مقابلے میں سادہ، آسان اور عام فہم ہوگی۔ ایلیمنٹری سطح کے اساتذہ انشا پردازی کے طریقے، تکنیک اور حکمتِ عملی کے گُر سیکھ کر اس قابل ہو جائیں گے کہ ان خطوط پر مزید کام کر سکیں اور اُردو میں عملی ضروریات ادبی، صحافتی، دفتری، سائنسی و تکنیکی اور علمی اُردو کے ضمن میں مہارت دکھا سکیں۔ مندرجہ ذیل امور بھی تقریری انشا یعنی بول چال سیکھنے میں ممد و معاون ثابت ہوں گے۔ ان میں سے کئی تدابیر استعمال کی جائیں گی۔ جیسے کہانیاں، پہیلیاں، لطیفہ گوئی، مکالمے، بہروپ بھرنا یا ڈراما کاری، بحث مباحثے/مذاکرے۔ مثلاً رپورتاژ کو ڈراما کاری میں تبدیل کرنا۔ غالبؔ کے خط کو مکالمہ بنا کر پیش کرنا یا مولوی عبدالحق کے خط کو تقریری اندازِ بیاں دے دینا۔ اس ضمن میں جماعتی سطح/معیار/استحسان کا خاص خیال رکھا جائے گا۔ تاکہ اردو سے شغف اور زبان سیکھنے کی خواہش فروغ پائے۔

گیارہواں ہفتہ

- اردو حروفِ تہجی (صوتیات/اعراب/حرکات)
- اُردو کا جدید ترین قاعدہ (صوتی، بینی، تصویری، تلازمی)
- حروف کا عملی کردار (ابتدائی و درمیانی جماعتی سطح پر)

بارہواں ہفتہ

- صحیح بولنے کی شرائط (روزمرہ بول چال، عام گفتگو، مکالمے، ذرائع ابلاغ، اخبارات، ٹی وی ڈرامے)
- تعلیم خوش خطی (درست تحریر کے ضروری امور)
- تخلیقی انشا (مشاہدہ وتحریر)

تیرہواں ہفتہ

- خطوط، درخواست (بہ شمول برقیاتی خط E-mail، برقیاتی پیغام SMS)
- مکالمہ وڈراما نگاری (ڈراما کاری)
- مضمون نویسی (جدید موضوعات پر اظہارِ خیال)

یونٹ ۵

اردو کے جدید رجحانات

(ضرورتیں/تقاضے/تعبیری جہتیں)

تعارف :

اردو کے جدید رجحانات: ضرورت، تقاضے اور نئی تعبیری جہت کے حامل ہیں۔ اردو کی ترویج کے لیے زبان وادب کے حوالے سے نصاب کی اس جہت کو نوآموز اساتذہ کے لیے حتی المقدور سادہ، عام فہم اور پر لطف انداز میں دیا گیا ہے۔ اردو برقی پیغام زیرِ تربیت اساتذہ کے ہاتھ میں موبائل کی صورت میں موجود ہے۔ اس مختصر سے کمپیوٹر نے اردو اطلاعیات کا مستقبل روشن کر دیا ہے۔ دفتری عملہ عام شہری سے اردو میں گفتگو کرنے پر مجبور ہے تو صحافی اردو میں رپورتاژ رقم کر رہے ہیں۔ مذہب واخلاق کی ہر گرہ اردو کھول رہی ہے۔ سائنسی وتکنیکی ترقی عام ہو جائے کے مفروضے پر ہی زیرِ تربیت اساتذہ کو مستند عملی معلومات فراہم کی جائیں گی۔ آرٹ کے بغیر تو یہ کائنات بھی بے رنگ ہے تو اردو ادب کیسے آرٹ سے یا آرٹ ادب سے استفادہ نا کرے۔ اس خیال کو یہ نصاب عملی صورت دیتا ہے مثلاً اشعار میں پوشیدہ خیالات کو تصویر کے کینوس پر اتارنا۔ غالبؔ واقبالؔ کی شاعری پر یہ کام ہو چکا ہے۔ ملی نغمے، نعت اور مضامین کا مقابلہ تو اب شہرتِ عام حاصل کر چکا ہے۔ اردو کے اساتذہ میں زبان کے حوالے سے ملی تشخص اجاگر کرنے اور اسے گوبل لینگویج بنانے کی کارروائی میں حصہ لینے کے قابل بنانا ہی اس کورس کا مرکزی نقطہ ہے۔

چودھواں ہفتہ

- اردو کی ترویج (ہمہ پہلو ضرورت)
- اردو کی بین الاقوامی حیثیت (تقاضے/تعبیریں)
- اردو کمپیوٹر کی زبان (اطلاعیات: اردو کا مستقبل)

پندرھواں ہفتہ

- اردو ذریعہء ابلاغ (دفتر، صحافت، مذہب واخلاق)

- اردو اور جدید ٹیکنالوجی (ترقیاتی ادارے، معاشرتی شعبے اور کام)
- اردو اور ابلاغ کی زبان (عام بول چال کے حوالے سے)

سولہواں ہفتہ

- اردو آرٹ اور کلچر (نثر و نظم میں آرٹ/آرٹ میں نثر و نظم)
- اردو ترانہ ملی (قومی و ملی جذبے/ماخوذ متن)
- اردو گلوبل لینگویج (منظر نامہ)

حوالہ جات/مطالعاتی مواد (REFERENCES)

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۲۔ رضیہ نور محمد، ڈاکٹر مس، اُردو زبان و ادب میں مستشرقین کی خدمات تحقیقی و تنقیدی جائزہ، مکتبہ خیابان ادب، لاہور، اپریل ۱۹۸۵ء۔

۳۔ ساجد حسین، پروفیسر، اُردو اور اس کے تدریسی طریقے، ایجوکیشن ریسرچ اسکالر جامع کراچی، رہبر پبلشرز۔ اُردو بازار، کراچی۔

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۵۔ عطش دُرّانی، ڈاکٹر، اُردو زبان اور یورپی اہل قلم، سنگِ میل پبلی کیشنز، ۱۹۸۷ء۔

۶۔ عطش دُرّانی، ڈاکٹر، جدید تدریسیات اُردو، شکیل سنز، راولپنڈی، ۲۰۰۳ء۔

۷۔ سہیل احمد خان، ڈاکٹر، تقریر، تدریسِ ادب، علامہ اقبال اوپن یونیورسٹی، اسلام آباد، ۲۰۰۷ء۔

۸۔ صباح الدین احمد، مطالعہ زبان اور کمپیوٹر، ''اَخبارِ اُردو''، دسمبر ۲۰۰۷ء۔

۹۔ عطش دُرّانی، ڈاکٹر، اُردو میں ابلاغ اور جدید اطلاعیات، ''اَخبارِ اُردو''، مقتدرہ قومی زبان، اسلام آباد، مئی ۲۰۰۷ء۔

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۱۵۔ رسپ اردو، یاسمین انجم، کیریئر بکس پبلشرز، لاہور (جماعت اول تا ہشتم عملی کتاب)

۱۶۔ مقتدرہ قومی زبان سے اشاعت شدہ لغات کا استعمال

افسانے/کہانیاں/ڈرامے/خطوط

- ''خودکشی/ٹوبہ ٹیک سنگ'' سعادت حسن منٹو
- چور، اشفاق احمدؔ
- رستم و سہراب، آغا حشرؔ

CoC/ B.Ed.-102	GENERAL SCIENCE (CONTENT)	3

COURSE OBJECTIVES

After completing this course, student teachers will be able to:

1. Describe the interdependence of ecosystems and the organisms within and how changes affect populations and the equilibrium of a system. Relate evolutionary forces to the diversity of ecosystems and of the species within them.
2. Identify the effects of human activities and naturally occurring changes on ecosystems and the consequences of those changes.
3. Begin to see the Earth as a system consisting of major interacting components that consistently undergo change. Physical, chemical, and biological processes act within and among them on a wide range of timescales.
4. Describe physical and chemical properties and physical/chemical processes with a special focus on the change of state of matter and how this change relates to energy.
5. Develop an understanding of common misconceptions about matter and particle theory.
6. Be able to describe a chemical reaction in the context of a rearrangement of atoms and also in the context of the formation of a new substance with new properties.
7. Investigate the relationships among force, mass, and motion of an object or system.
8. Be able to apply various models to science teaching while recognizing their limitations. Prevent potential misconceptions that could result from the use of some widely used models.
9. Be able to read, record, and analyze data, and present that data in meaningful ways.

SUGGESTED TEACHING APPROACHES

Teaching-Learning Framework

Throughout this course, pedagogy is interwoven with the content development. Faculty will model inquiry teaching to student teachers in order for them to experience firsthand the learning and teaching of science in an inquiry way. Thoughtful discussions will follow such hands-on experiences to clarify the applied methods and expected learning. These reflections are essential because it is through these discussions that prospective teachers will gain essential pedagogical content knowledge. They will also learn how to apply this knowledge to their science teaching in elementary grades upon graduation. Discussions, reflections, and application of pedagogical science content knowledge are critical components of Science I (and Science II). Each task prepares prospective teachers for their own teaching and enables them to modify activities to best meet the needs of their individual classrooms. For this reason, a substantial amount of time is dedicated to the "Teaching of Specific Science Content" in each unit of the course.

RECOMMENDED ASSESSMENT

Teaching-Learning Framework

Throughout this course, pedagogy is interwoven with the content development. Faculty will model inquiry teaching to student teachers in order for them to experience firsthand the learning and teaching of science in an inquiry way. Thoughtful discussions will follow such hands-on experiences to clarify the applied methods and expected learning. These reflections are essential because it is through these discussions that prospective teachers will gain essential pedagogical content knowledge. They will also learn how to apply this knowledge to their science teaching in elementary grades upon graduation. Discussions, reflections, and application of pedagogical science content knowledge are critical components of Science I (and Science II). Each task prepares prospective teachers for their own teaching and enables them to modify activities to best meet the needs of their individual classrooms. For this

reason, a substantial amount of time is dedicated to the "Teaching of Specific Science Content" in each unit of the course.

COURSE OUTLINE:

Unit 1: Course Overview

- Science in personal and social perspective
- The nature of science and scientific investigation (observations, inferences) Teaching of science: reflect upon the way prospective teachers learned science and how they want to teach science when they graduates.

Unit 2: Populations and Ecosystems

- Basic needs of living things
- Interdependencies of living things (symbiotic relationships)
- Ecosystems and Habitats
- Population Growth – Survival and Extinction
- Teaching "Populations and Ecosystems" in elementary grades

Unit 3: Diversity and Adaptations

- Diversity of living things
- Systems of classification
- Adaptations for survival
- Evolution and Diversity
- Teaching "Diversity and Adaptations" in elementary grades

Unit 4: Earth – The Blue Planet

- Earth - an inhabitable planet
- Weather and Seasons
- Categorizing the world by continents, biomes, vegetation zones, climate zones, etc. Introduction to maps; reading and creating simple data charts
- Constant changes on Earth – rock cycle Rivers (erosion/sedimentation) Earthquakes and Volcanoes
- Teaching "Earth – The Blue Planet" in elementary grades

Unit 5: Force and Motion

- Relationship among force, mass, and motion of an object.
- Interaction of objects as it relates to force and linear, constant motion. Graphing of motion and basic calculations of speed and average speed.
- Non-linear motion and accelerated motion. (Laws of motion) Graphing of non-linear and accelerated motion.
- Teaching "Force and Motion" in elementary grades
- Unit 6: Properties and Matter
- Physical properties of matter, including melting point, boiling point, hardness, density, and conductivity
- Atoms, molecules, mixtures, elements, and compounds
- Introduction to the periodic table
- States of matter: solid, liquid, gas (examples of water) Introduction to

models and their limitations in science teaching
- Teaching "Properties of Matter" in elementary grades

SUGGESTED REFERENCES

There are many science books and other reference that could be useful during this course. Here is just a selection:

1. Target Science - Physics by Stephen Pople
2. Target Science - Chemistry by Michael Clugston & Rosalind Fleming
3. The Teaching of Science in Primary schools – Wynne Harlen
4. Inquiry – Thoughts, Views, and Strategies for the K-5 Classroom – National Science Foundation Ready, Set, Science! Putting Research to Work in K-8 Science Classrooms – National Research Council
5. Taking Science to School: Learning and Teaching Science in Grades K-8 – National Research
6. John Sears Issues in Science Teaching Issues in Subject Teaching 2001
7. Brian Clegg-Getting Science_ The Teacher's Guide to Exciting and Painless Primary School Science (2007)
8. Macmillan, McGraw-Hill publishers California Science Activity Lab Book Teacher's Guide Grade 2 2008
9. Macmillan, McGraw-Hill publishers California Science Activity Lab Book Teacher's Guide Grade 2 2008
10. Sandra_K._Abell,_Ken_ Appleton,_Deborah L. Hanuscin (2010) Designing and Teaching the Elementary Science Methods Course

Web Resources

Council Lederman, N. & Abd-El-Khalick, F. (not dated). "Avoiding De-Natured Science: Activities That Promote Understandings of the Nature of Science" retrieved from http://toolbox.learningfocused.com/data/0000/0014/2125/Teaching_the_NatOSci.pdf.

"A science prototype: Rutherford and the atom," (not dated) retrieved from http://undsci.berkeley.edu/lessons/pdfs/rutherford.pdf.

Understanding Science is a website that communicates what science is and how it works: http://undsci.berkeley.edu/index.php.

For an easy to understand illustration of Newton's Laws of Motion, go to http://teachertech.rice.edu/Participants/louviere/Newton/.

For information about Bloom's Taxonomy, refer to http://www.odu.edu/educ/roverbau/Bloom/blooms_taxonomy.htm.

FC/ B.Ed.- 102	GENERAL METHODS OF TEACHING (FOUNDATION)	3

COURSE OBJECTIVES

1. A personal theory of teaching and learning based on a critical analysis of implicit theories formed as a student and modified/elaborated through reflections prompted by the work done in this course.
2. An argument paper that presents the pros and cons of teacher-centred and learner-centred teaching methods and states your position as a teacher
3. Records of structured, reliable classroom observations and conclusions drawn from reflection on these.
4. Participation in a Cooperative Learning group that planned, taught, and critiqued a lesson to college/university classmates
5. An elementary school lesson plan
6. A reflective journal

SUGGESTED TEACHING APPROACHES

This is the prospective teachers first opportunity to study teaching and, to a lesser extent, learning in school. They will soon learn that there are several sources of knowledge about teaching and learning and you will be introduced to these sources. Because they have years of experience as a student but are a beginner to the study of teaching, this course provides you with the opportunity to experience school with a focus on the teacher. They will observe teachers at work in classrooms and interview two students in each classroom. They will start your student interviews with two elementary school students whom you interview about their teachers away from the classroom. They will have a conversation with at least two experienced teachers. They will participate in planning and teaching a lesson to your college/university classmates and will write a plan for a lesson appropriate for students in an elementary school.

RECOMMENDED ASSESSMENT

The formative assessment will focus on skill building and introduction to a variety of teaching methods through case studies, readings, role plays of various scenarios, micro teaching and reflective practice in teaching. The assessment format will be as per rules.

Note for Students: You are expected to be a self-directed student in this course. This means that you will act to arrange school visits and to find teachers and students to talk with away from school. You also will take an active interest in your journal and use it for the purposes for which it is intended. Finally, you will be a responsible member of any group of classmates with whom you work. It is probable that the value of this course to your study of teaching will be proportional to the energy and time you invest in the course assignments

COURSE CONTENT

Unit 1 Teaching and Learning in School (2 weeks/6 hours)

- Your experience as a student
- Students currently in school
- Published research
- Observations in classrooms
- Reflections on classroom observation by yourself and with others
- Conversations with experienced teachers
- Theories about education and instruction

- The relationship between teaching and learning
- Your experience as a student
- Current students' self descriptions
- Published research, especially in cognitive and educational psychology
- Observations in classrooms
- Reflections on student interviews by yourself and with others
- Conversations with experienced teachers
- Theories about learning
- Cultural influences on teaching and learning

Unit 2 Classrooms are Busy Places

- Classroom space is crowded
- Work takes place in public: students don't have offices
- Teachers must simultaneously pay attention to a group and each individual in the group
- Children are not carbon copies of each other
- Resources are scarce: students have to share and often wait
- Teachers plan but unexpected events upset plans often
- Classroom activities do not occur one at a time: several different activities are in progress at the same time
- Learn names, interests, & learning strengths fast
- Establish rules and routines
- Group students
- Organize books and other materials for easy access
- Create pairs of students to help each other

Unit Three: Teacher-centred and Student-centred methods

- Distinction between lower and higher order learning
- Outcomes from lower order learning
- Outcomes from higher order learning

- Instructional activities that enable lower order learning
- Instructional activities that enable higher order learning
- Direct Instruction: a method to enable lower order learning
- Inquiry Learning: a method to enable higher order learning
- Different roles for teachers and students
- Template for Direct Instruction lessons
- Sample lessons
- Template for Inquiry/Problem Solving lessons
- Sample lesson
- Inquiry, Problem Solving, Project: same or different?
- Choice: Teacher –centred or Learner- centred? Or both?

Unit Four: Lecture, Demonstration, Discussion, Questions, and Cooperative Learning

- Peer teaching practice
- Rationale for Cooperative Learning

- Different models of Cooperative Learning
- Cooperative Learning procedures
- Incentive structure of Cooperative Learning
- Limitations of Cooperative Learning
- Checklists as assessment devices
- Reasons to lecture
- Structure of a lecture
- Active lectures
- Structure of a demonstration
- Characteristics of good discussion
- Purposes of questions
- Questions in lecture, demonstration and discussion
- Wait time
- Open and closed questions
- Lessons taught in class

Unit Five: Teacher-Student and Student-Student Interactions that Support Learning in the Classroom

- Respect
- Credibility
- Fairness (justice)
- Trust
- Interest
- Enthusiasm
- Adaptive teaching
- Cooperative working relationships are central
- Examples of cooperative working relationships
- Feelings are the foundation of thought
- Importance of trust and confidence

Unit Six: Designing Instruction: Goals and Objectives; Assessment; Plans; and Materials (4 weeks; 12 hours)

- Learning principles
- Pakistan's elementary school curriculum
- Definitions of standards, goals, and objectives
- Examples of standards, goals, and objectives
- Bloom's Taxonomy of Educational Goals and Objectives
- Definition of assessment in schools
- Personal experience with assessment
- Assessment practices in schools in Pakistan
- Purposes of assessment
- Distinction between formative and summative assessment
- Examples of formative assessment
- Sources of instructional materials, including textbooks, in Pakistan
- School budgets for instructional materials

 Lo/no cost materials as a supplement to or substitute for materials provided by the government
 Examples of materials created from local resources by teachers for mathematics, science, and literacy
 Review of teaching methods and instructional and learning principles
 Review of students' current personal theories of teaching and learning
 Search for synthesis
 Complete instructional design project (lesson plan)
 Presentation of lesson plans designed by students

Unit Seven: Self-Regulated Learning

- Becoming your own teacher

 Parents and teachers attitudes toward self-regulated learning
 Interdependence between learning and motivation
 Intrinsic and extrinsic motivation
Mastery learning goals and performance learning goals

SUGGESTED REFERENCES

1. Westwood, P. S. (2008). What teachers need to know about teaching methods. Aust Council for Ed Research.
2. Marzano, R. J. (2007). The art and science of teaching: A comprehensive framework for effective instruction. Ascd.
3. Marzano, R. J., Pickering, D., & Pollock, J. E. (2001). Classroom instruction that works: Research-based strategies for increasing student achievement. Ascd.
4. Marzano, R. J. (2003). What works in schools: Translating research into action. ASCD.
5. Marzano, R. J. (2004). Building background knowledge for academic achievement: Research on what works in schools. Ascd.
6. Orlich, D. C., Harder, R. J., Callahan, R. C., Trevisan, M. S., & Brown, A. H. (2012). Teaching strategies: A guide to effective instruction. Cengage Learning.
7. Mitchell, D. (2014). What really works in special and inclusive education: Using evidence-based teaching strategies. Routledge.
8. Clarke, P., & Wales, J. (2005). Learning Citizenship: practical teaching strategies for secondary schools. Routledge.
9. Kolencik, P. L., & Hillwig, S. A. (2011). Encouraging Metacognition: Supporting Learners through Metacognitive Teaching Strategies. Educational Psychology: Critical Pedagogical Perspectives. Volume 12. Peter Lang New York. 29 Broadway 18th Floor, New York, NY 10006.
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WEB RESOURCES

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Rosenshine, B. (2010). Principles of instruction (Educational Practice Series No. 21). Geneva: Retrieve from http://www.ibe.unesco.org/en/services/online-materials/publications/educational-practices.html

What Makes a Good Teacher? Opinions from Around the World. Retrieve from http://www.unicef.org/teachers/teacher/teacher.htm

West Virginia State Department of Education Resources for Formative Assessment Retrieve from http://wvde.state.wv.us/teach21/ExamplesofFormativeAssessment.html

Semester II

Course code	COURSES	credit hrs
CC/ B.Ed.-103	English-II (Communication Skills Compulsory)	3
CC /B.Ed.- 104	Computer Literacy (Compulsory)	3
CC/ B.Ed.-105	General Mathematics (Compulsory)	3
CC/ B.Ed.-106	Pakistan Studies (Compulsory)	2
FC/ B.Ed.- 103	Classroom Management (Foundation)	3
PC/ B.Ed.- 101	Methods of Teaching Islamic Studies (Professional)	3
	Total Credit Hours	17

CC/ B.Ed.-103	ENGLISH-II (COMMUNICATION SKILLS COMPULSORY)	3

COURSE OBJECTIVES

After completing this course, pre-service teachers/teachers will be able to:

1. use English confidently and independently
2. discriminate between formal and informal language use
3. communicate effectively in speech and writing with different audiences for a variety of purposes
4. communicate their own ideas clearly by applying their knowledge of grammar and usage in written and oral presentations
5. identify the main stylistic features of descriptive, narrative, persuasive and argumentative texts

SUGGESTED TEACHING APPROACHES

To make student teachers independent users of language, it is essential to involve them in the learning process. The course requires an integrated approach to language teaching which enables learning of all the four skills of language (i.e. listening, speaking, reading and writing) in natural settings. The learning and teaching approach should be balanced so that student teachers not only learn about language, but also how to use English in different contexts. The teachers and students are encouraged to respond through group and pair work, active learning strategies such as role plays, debates, presentations, brainstorming, etc.

Although student teachers may lack the necessary background at the beginning of the course to communicate in English, instructors will use English as the language of instruction. Instead of switching to Urdu or other languages when there is a problem, instructors will use alternative strategies such as slowing down, repeating a text, asking others to explain, or using simpler vocabulary.

RECOMMENDED ASSESSMENT

To make student teachers independent users of language, it is essential to involve them in the learning process. The course requires an integrated approach to language teaching which enables learning of all the four skills of language (i.e. listening, speaking, reading and writing) in natural settings. The learning and teaching approach should be balanced so that student teachers not only learn about language, but also how to use English in different contexts. The teachers and students are encouraged to respond through group and pair work, active learning strategies such as role plays, debates, presentations, brainstorming, etc.

Although student teachers may lack the necessary background at the beginning of the course to communicate in English, instructors will use English as the language of instruction. Instead of switching to Urdu or other languages when there is a problem, instructors will use alternative strategies such as slowing down, repeating a text, asking others to explain, or using simpler vocabulary.

COURSE CONTENT

UNIT 1 - EFFECTIVE COMMUNICATION

Effective communication

- Communicating effectively
- The communication cycle and process
- Communication barriers

Language Development of English Language Teachers (ELT)

- Understanding group dynamics
- Understanding ELT as a self directed learner
- Developing Language awareness by using CLT activities

Organizing a message

- Grammatical accuracy in speech and writing
- Coherence and clarity
- Opening statement/topic sentence & key words

UNIT 2 – MAKING ORAL PRESENTATIONS (2 weeks/6 hours)

Effective presentations

- The ingredients of a successful presentations
- Structuring a presentation – the key stages
- Using visual displays to present key facts and figures

Presenting in a logically organized and interesting manner

- Using PowerPoint or overhead transparencies for presentations that describe a process/phenomenon
- Tips to hold your audience's attention
- Preparing for a presentation
- Delivering a five-minute presentation

UNIT 3 – SOUND PATTERNS, TONE AND PURPOSE (4 weeks/12 hours)

Sound patterns and tone

- Vowel and consonant sounds and clusters
- Phonemes and syllables
- Stress and intonation

Modes of communication

- Audience and purpose - Visual texts: pictures and video clips
- Identifying purpose and audience in different texts
- The language of media – differentiating between audience and purpose

Audience specific

- Writing for different audience
- Presenting informally vs. formally
- Communicating through different mediums

Understanding the purpose

- Reading for meanings
- Reports/Descriptive vs. narrative texts

- Argumentative vs. persuasive texts
- Writing/Presenting persuasively

UNIT 4 – PERSUADING AUDIENCE (3 weeks/9 hours)

Public speaking

- Speech/presentation: extemporary and prepared
- Public announcements
- News broadcast

Being interviewed

- Résumé/CV
- Interview skills
- Interviewing for a job/internship

Persuasive writing

- Writing persuasively
- Applications
- Letters of advice/direct request

UNIT 5 – COLLECTING & PRESENTING INFORMATION (4 weeks/12 hours)

Collecting information

- Power reading/study skills
- Note-taking; summarizing
- Synthesizing information

Graphical information

- Reading graphical information: data presented through charts, graphs, etc.
- Converting a report to a chart/graph
- Summary and outline

Collecting and presenting data objectively

- Small scale research project
- Developing a questionnaire
- Gathering data and presenting findings
- Reporting results

Project presentation Revisions

SUGGESTED TEXTBOOKS AND REFERENCES

1. Eastwood, J. (2005) *Oxford Practice Grammar*, Karachi: Oxford University Press.
2. Swan, J. *Practical English Usage* (3rd editions) Oxford University Press
3. Thomson and Martinet, *A practical English Grammar (Intermediate)* Oxford University Press
4. Howe, D.H. & Kilpatrick, L. (2008) *English for Undergraduates*, Oxford: Oxford University Press Write better, Speak better (2005) Editors of Readers Digest. Readers' Digest Association
5. Barker, A. (2010). Improve your communication skills (Vol. 39). Kogan Page Publishers.

6. Shoolbred, M., & Chivers, B. (2007). A Student's Guide to Presentations. A Student's Guide to Presentations, 1-176.
7. Van Emden, J., & Becker, L. (2017). Presentation skills for students. Bloomsbury Publishing.
8. Mandel, S. (1987). Effective presentation skills. Crisp publications.
9. Suzy Siddons-The Complete Presentation Skills Handbook_ How to Understand and Reach Your Audience for Maximum Impact and Success-Kogan Page (2008)
10. John Adair-The Concise Adair on Communication and Presentation Skills-Thorogood (2005)

WEB RESOURCES

http://www.bbc.co.uk/worldservice/learningenglish/

http://learnenglish.britishcouncil.org/en/

http://www.teachingenglish.org.uk/

http://freesoftwarepc.biz/educational-software/download-free-software-3d-grammar-englishportable/ (a grammar software free download)

CC /B.Ed.-104	COMPUTER LITERACY (COMPULSORY)	Credit Hours 3

COURSE OBJECTIVES

Trainee-teachers will develop confidence and an aptitude for using computers and will be able to:

1. use computer technology as a tool for communication & collaboration, problem solving
2. create productivity materials related to teaching profession (lesson plans, result sheets etc.)
3. use computers technology for personal & professional growth, for research and generating new knowledge
4. explore new technologies/knowledge for career growth as lifelong learners

SUGGESTED TEACHING APPROACHES

This is a skills-focused/practical course and it is expected that all the sessions would be implemented practically in the computer lab. The course is based on interactive exploration approach using lecture demonstration method with various teaching techniques including K-W-H-L, brain storming, thought provoking questions, think pair-share, reflections, discussions, etc. The instructional strategies recommended focus the development of knowledge, skills and attitude.

Each planned session is of 60 minutes

Allocate 2 hours of trainee-practice with each hour of teacher-facilitated instruction. For a 3 credit hours course, it takes 3 hours of teacher-facilitated instruction with 6 hours of trainee teacher practice a week.

RECOMMENDED ASSESSMENT

The course is based on interactive exploration approach using lecture demonstration method with various teaching techniques including K-W-H-L, brain storming, thought provoking questions, think pair-share, reflections, discussions, etc. The instructional strategies recommended focus the development of knowledge, skills and attitude.

COURSE CONTENT

Unit 1 Introduction to Computer

- Introduction to computer
- Examples of computer o personal computers (desk-top, laptops, pocket PCs/hand-held computers)
  - main-frame computer systems
- Brief history of computers with timeline
  - Knowledge about and interfacing with:
  - Input devices (Examples: mouse, keyboard, scanner, joystick, webcam, digital camera, bar-code reader, digital voice recorder, etc.) o Knowing the mouse and keyboard
- Interfacing with the computer using mouse and keyboard o Practicing to input data using a mouse (leftclick, right-click, move, drag, trackball, double-click), etc.
- Output devices (Examples: printer, speaker, projector, etc.)
- Storage devices (hard disk, USB-flash disk, CDs/DVDs, memory card, etc.)
- Understanding of Central Processing Unit (CPU) □□ How do computers work?

- Operating/System software introduction
- Application software- usage & types (word processing, spreadsheets, multimedia, etc.)

Unit 2 Learning Computer Basics and Internet

- Hands-on activities on:
  - o User window (Minimizing, maximizing and closing a window, menu, status and other bars, etc.)

□ □ Working with the Operating System

- Start/Shut down (menu, purpose, etc.)
- User window (Minimizing, maximizing and closing a window, menu, status and other bars, etc.)
- Basic concepts of Desktop, Icons, shortcuts, etc.

□ Working with the Operating System (Continued)

o Control Panel

o Using Help

o Selecting a Printer, Changing a Default

- Printer, Checking the Status of a Printer

- Concept of files and folders (types of files and extension)
- File and folder properties o Renaming a folder, etc. (Practicing to input data using a keyboard)
- Types of storage devices
- Practically knowing and accessing storage devices/drives

□ Data transfer between different storage devices (Example: to/from USB-flash disk to hard disk, etc.)

- Introduction to Internet and the World Wide Web (www)
- Internet browsing applications (Examples: Internet Explorer, Mozilla Firefox, Apple Safari, etc.)
- Web addresses and links

□ Interfacing with the Internet browser window (browser menu-bar, buttons, scrolling, clicking on links, etc.)

□ Search engines

- Using specialized web-sites (see reference weblinks)
- Searching for information (search tips, etc.)

Brief introduction to:

- Local Area Network (LAN); sharing on a LAN; Wide Area Network (WAN); Wireless Networks
- Sharing on networks; network-related security issues
- Firewalls

□ Security (Identity and virus protection):

o Protection against virus and spam emails o What is Hacking, and protecting against it

□ Software installation (Example: Installing an electronic Dictionary) □ Utilities:

- o What is file compression and why it is needed o File compression applications (Winzip, other programs)
- o Learning to compress files and folders using Windows default options (Zip, rar)

Unit 3 Using Productivity Applications (Word Processing) (Microsoft Word, OpenOffice.org Writer)

- General introduction to application window
- Creating, saving & opening documents
- Formatting, editing Pages, text & paragraphs
- Adding pictures to pages (Clipart & from file)
- Working with tables, charts & graphs
- Working with Diagrams (Using "draw" feature)
- Print preferences, printer properties and printing a document
- Using preset and advance features
- Using word processing to create classroom instruction documents (diagrams, lesson plan, worksheets, flash cards, brochures, newsletters) and motivation tool (certificate)

Unit 4: Using Productivity Applications (Spreadsheet) (Microsoft Excel, OpenOffice.org Calc)

- General introduction to spreadsheets interface
- Creating, saving & opening spreadsheet
- Using worksheets (renaming and adding worksheets)
- Adding and working with information (formatting cells, adding comments, inserting hyperlinks)
- Changing the look of information with spreadsheet (cell alignment, changing font face and size, adding background color to cells and rows, inserting picture)
- Doing Mathematics (formulas: addition, subtraction, average, logic formula etc)
- Making charts (formatting i.e. background, legend, color of bars, creating pictograph)
- Including print properties
- Using spread sheets to create class room management documents (seating chart, electronic attendance register, result sheet, student academic performance graph, bio data)

Unit 5: Using Productivity Application (Multimedia)

Microsoft PowerPoint, OpenOffice.org Impress

- General introduction to multimedia application
- Creating, saving & opening presentation
- Viewing and working with slides
- Building presentations (adding, moving/sorting and duplicating a slide)
- Making slides look good (applying templates, changing color schemes, slide layout, background)
- Adding pictures and artistic effects (inserting compressing pictures , applying borders to pictures and other objects, adding 3-D effects,
- Adding sounds, movies and links
- Adding animations and special effects (applying slide transition, adding & customizing animations, adding action buttons, turning off animations)
- Setting up and playing presentation (printing presentations, setting time)
- Using multimedia to create presentation (school profile, lesson presentation, action plans, assignment presentation, etc)
-

Unit 6: Making Connections

- Searching multimedia resources
- Uploading, downloading documents and other files (pictures, audio, etc.)
- Saving information from Web pages
  Interfacing with online multimedia resources (Example: videos on www.youtube.com about learning computer)
- Creating and using e-mail to communicate and collaborate o E-mail management (creating, sorting, forwarding, searching, flagging, deleting)
  o Attaching document (files & folders)
- Using Web 2.0, Using chat/talk applications (Skype, GoogleTalk, etc.)
- Introduction to online collaboration
- Working with an online collaboration application
  (Application: Google docs)
- Creating, importing and editing a file – document, spreadsheet & presentation)
- Sharing and accessing online files

Unit-7: Using multimedia devices and resources

- Introduction and examples of digital devices
  (camera, mobile phone, digital voice recorders, etc.) Using a digital camera and other technologies i.e. mobile phones to down-load images, and videos
- Transferring images and videos to computer from mobile devices (mobile phone, camera)
- Using multimedia applications (Examples: Real Player, Windows Media Player, Quick Time Player etc.) to play educational audio & video clips
  Unit 8: Use of computer in daily life

 Uses of computer

- at workplace,
- in community,
- for communication, o
- education & research, literacy
- entertainment

- Code of ethics
- Computer crime
- Copyrights Law and fair-use guidelines and plagiarism
- Computer as a teacher
- Use of computer-assisted instruction
- Online education (Example: Virtual University of Pakistan

SUGGESTED REFERENCES

1. Corbel, C., & Gruba, P. (2004). Teaching computer literacy (pp. vi+-55). Sydney: National Centre for English Language Teaching and Research.
2. (Computer_Tech) Faithe Wempen-Digital Literacy For Dummies (For Dummies-For Dummies (2014)
3. -Absolute Beginners Guide to Computer Basics -QUE (2009)
4. Introduction to computers by peter norton 6e (c.b)
5. Joe Kraynak-The Complete Idiot's Guide to Computer Basics-Alpha Books (2002)

6. Peter Norton-Peter Norton's Introduction to Computers-McGraw-Hill (2006)
7. Herrington, A., Hodgson, K., & Moran, C. (2009). Teaching the New Writing: Technology, Change, and Assessment in the 21st-Century Classroom. Language & Literacy Series. Teachers College Press. 1234 Amsterdam Avenue, New York, NY 10027.
8. Carrington, V., & Robinson, M. (Eds.). (2009). Digital literacies: Social learning and classroom practices. sage.
9. Robinson, H. M. (2008). *Emergent computer literacy: A developmental perspective*. Routledge.
10. Shaffer, D. W., & Gee, J. P. (2006). *How computer games help children learn*. New York: Palgrave Macmillan.

WEB RESOURCES

Jones, B., & Flannigan, S. L. (2006). Connecting the digital dots: Literacy of the 21st century. *Educause Quarterly*, *29*(2), 8-10.

Eckert, P. (2006). Communities of practice. *CONCISE ENCYCLOPEDIA OF*, 109.

Bawden, D. (2008). Origins and concepts of digital literacy. *Digital literacies: Concepts, policies and practices*, *30*(2008), 17-32.

Liao, L., & Pope, J. W. (2008). Computer literacy for everyone. *Journal of Computing Sciences in Colleges*, *23*(6), 231-238.

FC/ B.Ed.-103	CLASSROOM MANAGEMENT (FOUNDATION)	Credit Hours 3

COURSE OBJECTIVES

After completing this course, prospective teachers will be able to:

1. define classroom management as a means to maximizing student learning.
2. identify key features of a well-managed classroom.
3. plan lessons, activities and assignments to maximize student learning.
4. differentiate instruction according to student needs, interests and levels.
5. design and practice predictable classroom routines and structures to minimize disruptions
6. plan for a culture of caring and community in the classroom

SUGGESTED TEACHING APPROACHES

This course assumes that prospective teachers will develop their own plans for classroom management as a result of all they learn in the sixteen weeks that follow.

This course relies on peer discussions, independent reflections and class lectures. It also assumes that student teachers will read all the recommended text and ask provocative questions of themselves and during class. Students are expected to listen with tolerance to new points of view and contribute their understanding and experiences during discussions.

RECOMMENDED ASSESSMENT

This course assumes that prospective teachers will develop their own plans for classroom management as a result of all they learn in the sixteen weeks that follow.

COURSE CONTENT

Unit 1—Learning Theories and Classroom Management

- Why a course on Classroom Management?
- How does a teacher's personal philosophy about teaching and learning affect his or her beliefs about classroom management?
- What happens in a well-managed classroom?
- Classroom Observations and Data Collection (students spend 6 hours in a classroom including class and out-of-class hours)
- What are the features of Classroom Management? (physical environment, social environment)
- What challenges must teachers negotiate in the management of a classroom?
- How do classroom discipline and management differ?
- What kind of classroom environment do I want?
- What do I need to think about in designing the effective classroom environment?
- Identifying resources for learning
- Using displays and visuals for enhancing the learning environment in the classroom
- Seating arrangements for different kinds of learning experiences Physical facilities to enhance the learning environment
- Building the social environment
-

Unit 2-- Curriculum and Classroom Management

How can my curriculum support the classroom management?

In what ways can the teacher create a plan for teaching and learning that is consistent with her/his philosophy?

o Planning, motivation, teaching and assessing the curriculum

o Differentiation of instruction

o Multi-grade classrooms

o Over-crowded classrooms

Unit 3—Routines, Schedules and Time Management in Diverse Classrooms

- What are classroom 'routines' and 'structures' and how do they help in the management of classroom time?
- How do you create structures and routines in a multi-grade context?
- How can routines and structures help me deal with special needs and situations?
- How might routines and structures be used to teach specific subject content like Math, Science or Literacy?
- How might routines and structures be used to promote cooperation and collaborative learning?

Unit 4—Creating Shared Values and Community

- What is community inside and outside the classroom and school?

What is community participation and involvement?

- What are typical practices of community participation?
- How can I manage involvement of the community in my classroom?
- What routines and structures need to be put in place?
- In what ways might community involvement be different in multi-grade classroom?
- How can I create an "ethic of care" in my classroom?

- diverse classrooms as caring, democratic communities
- respectful relations between teacher and students, students and students
  - How can a caring classroom help me build responsible actions and personal accountability?
  - What happens when behavior breaks down?
  - How do I deal with unexpected events?

Unit 5—Planning the Classroom Environment I Would Like

- How can I use what I have learned to create the classroom I want?

o Peer critique and review of final projects o Summary and closure

SUGGESTED REFERENCES

1. LePage, P., Darling-Hammond, L., Akar, H., Gutierrez, C., Jenkins-Gunn, E., & Rosebrock, K. (2005). Classroom Management.
2. Jones, V. F., & Jones, L. S. (2004). Comprehensive classroom management: Creating communities of support and solving problems. Boston: Pearson/Allyn and Bacon.
3. Classroom Management That Works: Research-Based Strategies for Every Teacher By Robert J. Marzano, Jana S. Marzano, Debra Pickering
4. The Multi-grade Classroom: A Resource handbook for Small Rural Schools--Book 3: Classroom Management and Discipline by Susan Vincent, Northwest Regional Educational Laboratory,

5. Marzano, R. J. (2003). *Classroom management that works: Research-based strategies for every teacher.* Alexandria, VA: Association for Supervision and Curriculum Development.
6. Hue, M. T., & Li, W. S. (2008). Classroom management: Creating a positive learning environment (Vol. 1). Hong Kong University Press.
7. Lewis, R. (2008). Understanding pupil behaviour: Classroom management techniques for teachers. David Fulton Publishers.
8. Scarlett, W. G., Ponte, I. C., & Singh, J. P. (2008). Approaches to behavior and classroom management: Integrating discipline and care. Sage Publications.
9. van Niekerk, S. C. (2008). *An educator's guide to effective classroom management*. Van Schaik Publishers.
10. Sherwood, P. (2008). Emotional literacy: The heart of classroom management. Aust Council for Ed Research.

WEB RESOURCES

Chapter 1—Introduction to Proactive Classroom Management
http://ptgmedia.pearsoncmg.com/images/9780135010631/downloads/Henley_Ch1_IntroductiontoProactiveClassroomManagement.pdf

Canter, L. Assertive discipline: More than names on the board and marbles in a jar. [Retrieved on February, 28, 2011] from http://campus.dyc.edu/~drwaltz/FoundLearnTheory/FLT_readings/Canter.htm

Evertson, C., Poole, I., & the IRIS Center (n.d.) *Norms and Expectations.* [Retrieved on January, 20, 2011] from http://iris.peabody.vanderbilt.edu/instructors/guides/case_studies/ICS-003ICpdf

Evertson, C. M., & Emmer, E. T. (2009). *Classroom management for elementary teachers* (8th Ed.). Upper Saddle River, NJ: Pearson.

CC/ B.Ed.-105	GENERAL MATHEMATICS (COMPULSORY)	Credit Hours 3

COURSE OBJECTIVES

Students will:

1. ● Increase their mathematical content knowledge for Number and Operations, Algebra and Algebraic Thinking, Geometry and Geometric Measurement, and Information Handling for teaching in the primary, elementary, and middle grades
2. ● Increase their confidence, competence, interest, and enthusiasm for mathematics by exploring and doing mathematics
3. ● Deepen an understanding of how children learn mathematics
4. ● Build a variety of instructional techniques with clear purposes
5. ● Enhance their use of questioning techniques to elicit children's understanding
6. ● Learn ways to engage students in mathematical thinking through interactive activities

SUGGESTED TEACHING APPROACHES

Each unit of study has a consistent design or organization and is meant to maximize time on learning for prospective teachers.

1. Content: Most one hour sessions will begin working on a math problem. Prospective teachers will engage in solving and discussing a math problem and sharing approaches and solutions. The content has been developed to so that prospective teachers will engage in mathematics in depth to help them connect concepts within and across the four units.

2. Pedagogy: In each lesson prospective teachers will actively engage in doing mathematics in order to experience approaches to teaching and learning math that they can use when they teach. They will recognize that there are often multiple ways of approaching a problem and in some instances more than one correct answer. The instructor will present questions that stimulate curiosity and encourage prospective teachers to investigate further by themselves or with their classmates.

The course will also examine how children learn and develop mathematical understanding and skills and how the way children think influences the teaching of mathematics in the primary, elementary, and middle grades.

RECOMMENDED ASSESSMENT

Students are expected to continue learning about math and the teaching of math after class. There will be assignments to stretch prospective teachers content knowledge and to learn more about teaching math. Assignments will take many forms including independently solving math problems and school based tasks.

In summary, the General Mathematics course is a comprehensive effort to build and deepen maths content knowledge, to learn and use high-quality instructional practices, and to study ways in which young students approach and learn mathematics.

COURSE CONTENT

Unit 1: Numbers and Operations

- Counting
- Models for Addition & Subtraction with natural numbers
- Addition and Subtraction as inverse Operations
- Word problems involving addition and subtraction

- Working in the base-10 system
- Models for Multiplication with natural numbers
- Multiplication and Division as inverse operations
- Models for Division with natural numbers
- Nature of the remainder in division
- Factors, Prime and Composite Numbers
- Models of fractions (sets, number line, area, volume)
- Types of fractions (proper, improper and mixed-number)
- Decimals as fractions linked to base-10 place value
- Concept of GCF and LCM
- Operations with fractions and decimals
- Percent as related to fractions and decimals
- Ratio and Proportion
- Rates
- Integers, Operations with integers
- Venn Diagrams

Unit 2: Algebra

- Repeating patterns and growing patterns
- Generalizing a pattern and finding a rule
- Creating coordinate graphs
- Continuous, discontinuous, and discrete graphs
- Equivalent expressions
- Interpreting tables, graphs and equations of linear functions
- The concept of slope
- Order of Operations
- Interpreting tables, graphs and equations of quadratic functions
- Solving for x, the unknown

Unit 3: Geometry and Geometric Measurement

 Characteristics of Polygons with an emphasis on Triangles and Quadrilaterals,
- Point, line, line segment, ray
- Models of angles
- Benchmark angles
- Classifying angles by measurement
 Perimeter and Area formulas
- Circumference and Area formulas
- Surface Area formulas
- Volume formulas
- Squares, square numbers, square roots (surds)
- The Pythagorean Theorem

Unit 4: Information Handling

1- Graphic displays of information

- Collect & organise data via: tally marks, pictographs, line plot, bar graph, and line graphs (discrete and continuous)
- Interpret the above graphic displays of data

2- Measures of dispersion and central tendency

- Range
- Mean
- Median

Mode

SUGGESTED REFERENCES

1. Mathematics for Elementary School Teachers, by Tom Basserear, Brooks Cole.
2. Beckmann, S. (2014). Mathematics for elementary teachers with activities. Boston, MA: Pearson Education.
3. Elementary and Middle School Mathematics: Teaching Developmentally, by John A. Van de Walle, Karen Karp, and Jennifer Bay-Williams, published by Pearson Education.
4. Mathematics Explained for Primary Teachers, by Derek Haylock, SAGE Publications.
5. *How Students Learn: History, Mathematics, and Science in the Classroom* www.nap.edu/catalog.php?record_id=10126#toc National Academies Press
6. Lin, F. L., & Cooney, T. J. (Eds.). (2011). Making sense of mathematics teacher education. Springer Science & Business Media.
7. Clarke, B., Grevholm, B., & Millman, R. (2009). Tasks in primary mathematics teacher education. New York: Springer.
8. Ferozsons Mathematics series for schools
9. OUP Mathematics series for elementary classes
10. Dawson, A. J., Jaworski, B., & Wood, T. (Eds.). (2003). Mathematics teacher education: Critical international perspectives. Routledge.
11. Van de Walle, J. A. (1990). Elementary School Mathematics, Teaching Developmentally. Addison-Wesley/Longman, Route 128, Reading, MA 01867.

WEB RESOURCES

1. NCTM *Illuminations*: http://illuminations.nctm.org/
2. Maths Currriculum: http://nzmaths.co.nz/
3. N-Rich Maths site: http://nrich.maths.org/public/
4. *What does Good Mathematics Instruction Look Like?:*
5. http://www.naesp.org/resources/2/Principal/2007/S-Op51.pdf

CC/ B.Ed.-106	PAKISTAN STUDIES (COMPULSORY)	2

COURSE OBJECTIVES

1. To create awareness among students about Pakistan as an enlightened nation , comparing it with the rationale and endeavors for Pakistan's creation;
2. To educate students about key concept in the disciplines comprising Pakistan Studies (history, geography, economics and political science);
3. To assist students to identify various perspectives on current, persistent and controversial issues in Pakistan; identify their own position and be able to support it;
4. To inculcate in students the sense of patriotism, tolerance, active citizenship, and respect for cultural diversity and religious harmony.
5. To encourage students to design and implement a project to promote active and responsible citizenship;

SUGGESTED TEACHING APPROACHES

The teaching of Pakistan Studies will adopt methods that promote creativity, aesthetics, and critical perspectives, and enable learner to draw relationships between past and present, to understand changes taking place in society. This requires students and teachers to engage in active teaching and learning.

In order to make the process of learning participatory there is a need to shift from mere imparting of information to debate and discussions. This approach to learning will keep both the learner and teacher alive to social realities.

It has often been observed that cultural, social and class differences generate their own biases, prejudices and attitudes in classroom contexts. The approach to teaching therefore needs to be open-ended. Teachers will discuss different dimensions of social reality in the class, and work towards creating increasing self-awareness amongst themselves and in the learners. Teaching will utilize a range of audio-visual materials, including photographs, charts and maps, and organize visits to museums and archeological sites if possible. Learning about Pakistan studies will also involve the local community – older community members can talk about local history, local experts such as water engineers and local craftsmen and women can talk about their work in relation to topics in the course. Experiential learning will be encouraged through project work.

Thus, to achieve set course objectives and outlined unit outcomes; to foster students' creativity, intellectual curiosity, tolerance and respect for others and to maintain a good civic sense, the course will use a combination of the different teaching and learning approaches. Students will be encouraged to engage in the following activities / strategies to stimulate their interest in the topics being studies and to develop a better understanding of the syllabus content:

- Effective lecturing
- Instructional strategies
- Cooperative learning structures
- Conducting inquiry
- Critical discussions / debates on the content materials
- Project work
- Drawing, reading and filling-in maps

RECOMMENDED ASSESSMENT

To achieve set course objectives and outlined unit outcomes; to foster students' creativity, intellectual curiosity, tolerance and respect for others and to maintain a good civic sense, the course will use a combination of the different teaching and learning approaches. Students will be encouraged to engage in the following activities / strategies to stimulate their interest in the topics being studies and to develop a better understanding of the syllabus content:

- Effective lecturing
- Instructional strategies
- Cooperative learning structures
- Conducting inquiry
- Critical discussions / debates on the content materials
- Project work
- Drawing, reading and filling-in maps

Course Content

UNIT 1: HISTORICAL PERSPECTIVES

Introduction; The concept of civilization

- Introduction to the course
- Civilization

- Ancient civilizations of Indus valley: Mohenjo-Daro and Harrapa
- Skills development
  Inquiry skill
  Presentation skill
  Teaching history: facts versus opinions
- Ideological rationale with reference to important personalities
  Two nation theory: Sir Syed Ahmad Khan, Allama Iqbal and Quaid-eAzam Muhammad Ali Jinnah
- Factors leading to the birth of a nation
  Factors leading to the creation of Pakistan - Economic, Social and Political
- Factors leading to the birth of a nation
  Factors leading to the creation of Pakistan - Economic, Social and Political
- Struggle for Pakistan
  British colonization and Muslim reform movement (1857 – 1905)
  The struggle of independence (1905 – 1940)
- Struggle for Pakistan
  The Pakistan movement (1940 – 1947)
  The teething years (1947 – 1958)

UNIT 2: LAND AND PEOPLE

- Geography of Pakistan
  General overview to geography of Pakistan
  Introduction to project work
- Map skills
  Globe and different types of map
  Skill development: map and globe reading and interpreting
- Physical features of Pakistan

Physical features of Northern and Western Highlands and The Punjab Plains

- Weather and climate; Factors affecting weather and climate
  Factors that influence weather and climate of Pakistan
  Major climatic zones of Pakistan and their characteristics
- Environmental problems in Pakistan
  Major Natural and Human Made Disasters in Pakistan
  Disaster Management / Preparedness
- Movement and Human environment interactions
  Movement: people, goods and ideas;
  Humans adapt to the environment / Humans modify the environment / Humans depend on the environment.
- Population and its effects on economy
  Population density and distribution
  Population growth and its effects on economy of the country

UNIT 3: BASIC ECONOMICS

- Basic Concepts of Economics
  Goods and services
  Utility
  Scarcity
- Economic systems
  Market
  Command
  Mixed
- Sectors of the economy - Agriculture
  Role and importance of agriculture in Pakistan's economy
  Agriculture production and productivity
- Sectors of the economy – Industry
  Contribution of industrial sector to national economy Prospects for industrialization
- Sectors of the economy - Trade
  Major imports and exports of Pakistan
- Economic Development
  Economic development and growth
  Economic development of Pakistan

UNIT 4: GOVERNMENT AND POLITICS IN PAKISTAN

- The government of Pakistan
  Introduction
  Systems, levels functions and branches of government
- Objective Resolution
  The approval of the Objective Resolution by the Constituent Assembly
  Key features of the Objective Resolution
  Significance and impact of Objective Resolution in constitution making
- The Political and Constitutional Phases
  Pakistan: The early years (1947 – 1958)
  The Ayub Era (1958 – 1969)
  The Yahya Regime (1969-1971
- The Political and Constitutional Phases

The Z. A. Bhutto Era (1971-1977)
The Zia Regime (1977-1988)
Civillian Rule (1988-1999)
Musharraf Rule (1999-2008)
The 1973 Constitution

- Citizen participation
  The role of the citizen in a democracy;
  Civil society and the role of civil society
  Major Civil Society Organizations: Origin, Growth, Contribution and Impact
- Citizen participation
  Role of major political parties in politics of Pakistan

UNIT 5: CONTEMPORARY PAKISTAN

- Contemporary Pakistan
  Politics
- Contemporary Issues
  Major Social, Cultural, Sectarian and Ethnic issues
- The future of Pakistan
  Economic Prospects
  Positional opportunities and threats
- Consolidation of the course
- Conclusion of the course

SUGGESTED RESOURCES

1. Abid, S.Q. (2007). A Muslim Struggle for Independence: Sir Syed to Muhammad Ali Jinnah. Lahore: Sang-i-Meel.
2. Ali, C. M. (1998). The Emergence of Pakistan. Lahore: Research Society of Pakistan. Ali, Mehrunnisa (2001). Readings in Pakistan's Foreign Policy. Karachi: Oxford University Press.
3. Amin, Shahid.M (2004). Pakistan's Foreign Policy: A Reappraisal. Karachi: Oxford University Press. Anwar Syed (2007). Issues and Realities of Pakistani Politics. Lahore: Research Society of Pakistan, University of the Punjab.
4. Burke, S.M, Qureshi, Salimul-Din (1995). The British Raj in India. Karachi: Oxford University Choudhary, G. W. (1969). Constitutional Development in Pakistan. London: Longman Group Ltd.
5. Cohen, S. P. (2005). The Idea of Pakistan. Karachi: Oxford University Press.
6. Kazimi, M. R (2007). Pakistan Studies. Karachi: Oxford University Press.
7. Kazimi.M.R. (2009). A Concise History of Pakistan. Oxford University Press.
8. Khan, F. K. (1991). A Geography of Pakistan: Environment, People and Economy. Karachi: Oxford University Press.
9. Khan, H. (2001). Constitutional and Political History of Pakistan. Karachi: Oxford University Press. Malik, H. & Gankovsky, Y. V. (Eds.) (2006). The Encyclopedia of Pakistan. Oxford University Press.
10. Rabbani, M. I. (2003). (Revised Edition). Introduction to Pakistan Studies. Lahore: Caravan Book House.
11. Rafique Afzal, Political Parties in Pakistan, Islamabad: National Institute of Historical and Cultural Research, 1999, (Vol. I, II and III) 1999.
12. Shafqat, Saeed, *New Perspectives on Pakistan: Visions for the Future*, Karachi, Oxford University Press, 2007

13. Smith, N. (2007). *Pakistan: History, Culture and Government*. Karachi: Oxford
Yusuf, Hamid (1998) A study of political Development 1947-99. Lahore: The Academy.

Website Resources

Story of Pakistan: A multimedia journey http://www.storyofpakistan.com/
Government of Pakistan http://www.pakistan.gov.pk/
Pakistan Institute of Trade and Development www.pitad.org.pk
Pakistan Agricultural Research Council http://www.parc.gov.pk/
Geographical Association: Furthering the learning and teaching of Geography http://www.geography.org.uk/
National Fund for Cultural Heritage http://www.heritage.gov.pk/

PC/ B.Ed.- 101	METHODS OF TEACHING ISLAMIC STUDIES (PROFESSIONAL)	3

COURSE OBJECTIVES

The course focuses on the following:

- Analysis of Syllabi Curriculum and Resources Exploration and Development of Resources
- Lesson Planning
- Aims and Objectives Assessment for Learning Evaluation and Assessment
- Participative Learning: Group Work, Pair Work, Role Play, Questioning for Learning. Higher/Lower Order Questioning Methodologies
- Teacher Exposition Methodologies
- Concept Development Methodologies
- Teaching Texts Methodologies
- Varying Stimuli Methodologies
- Micro Teaching Curriculum and Resources Exploration

SUGGESTED TEACHING APPROACHES

The teachers and student teachers are encouraged to respond through pair/group work and active learning strategies such as role play, debates, presentations, brainstorming, etc. Teachers and student teachers are encouraged to use online resources and make the best use of the interactive exercises in various websites. A variety of teaching and learning approaches will be used throughout the course, for example, group work, peer learning, class debates and discussions.

RECOMMENDED ASSESSMENT

This course aims to nurture the students' personality towards the best moral and social conduct, healthy attitudes and self-discipline in accordance with the guidance of the Qur'aan and Sunnah. It strives to encourage them to develop as responsible citizens, who will contribute to the well-being of society and of humanity in general. It is designed to promote an enquiring, analytical and positive approach to the study of Islam, especially in its individual and collective expression in the contemporary world. It introduces students to the challenging and multi-faceted nature of Islam and to the ways in which this is reflected in experiences and practices. It helps students to identify and explore questions about the meaning of life and to consider such questions in relation to the values and teachings of Islam. It encourages students to reflect on contemporary issues and act thereon in the light of the Qur'aan and Sunnah; and enables students to recognize, appreciate and add to the contribution of Muslims to world civilization. The course teaches diversity and is committed to the betterment of family, community, environment and humanity. It encourages independent thinking, critical thinking, problem solving and real world connections from a foundation of strong basic skills.

Week 1	Importance of Islamic Education. What topics should we teach?

	Why do we teach Islamic Studies in schools?
Week 2	Methods of Teaching Islamic Studies
Week 3	Construct your own outline of the course according to your previous learning. What topics do we teach in primary classes?
Week 4	Develop an Outline for the topics from Grade 1-6 with Linear and
Week 5	How to use active learning strategies in teaching of Islamiat
Week 6	*AQA'ID* *beliefs,*
Week 7	*FIQH* *Islamic law*
Week 8	*ADAB supplications and etiquette,*
Week 9	*'AKHLAQ character*
Week 10	*QASAS AL-AMBIYA'* *Stories of the prophets*
Week 11	*Companions of the Prophet*
Week 12	*Selected Quranic Surahs*
Week 13	*Selected Ahadith*
Week 14	TARIKH AL-ISLAM History of Islam
Week 15	*Holistic Integrated Curriculum* Linking Islamic concepts with other subjects
Week 16	Logical arrangement of the syllabus for best learning Follow up Review of all the work done

SUGGESTED REFERENCE BOOKS:

1. Course Pack and Complete Resources:
https://drive.google.com/drive/folders/1PjurNrIUnNhHeOL1MJdJA3QkOp0zLZET

2. Complete Resources and Course Pack Weeks 4-11:
https://drive.google.com/drive/folders/1nsc79Si7SfUc0TMwi0qfcDBv8oTdIMFY

3. Resource Material for Active Learning Islamic Songs and Rhymes:
https://www.youtube.com/watch?v=Rob3iU3y8R4

4. Ali and Sumayyah Islamic Resource Links:
https://drive.google.com/drive/folders/1JoPxv9EYqw7kkcIuq4NA60hfcIjYNadK

5. How to Teach Islam in a Fun way for Children
https://drive.google.com/drive/folders/183-yUFyQ5T0ydlFRTRN-tKWf6SEVEwbf
6. Islamiat Syllabus Design Resources
https://drive.google.com/drive/folders/1ekFLDtTbiBQr5CMQP3KvtCfyeG7M-0QQ
7. Primary Resources for Teaching Islamiat:
https://drive.google.com/drive/folders/1ANvwL70y17vXosHfFFWPnBaTiGIHzJAI
8. Islamic Education Key Points about Knowledge:
https://drive.google.com/drive/folders/1WqMvAWumy6b42cXUe5fUABfF8-yZETV_
9. Arabic Curriculum Resources for Homeschooling and Islamic Teachings:
https://drive.google.com/drive/folders/19sC5P3zFnIPNvZFo9dy4NwboyEZpSlEp
10. Resource Material for Active Learning How to Make Lapbooks 2:
https://www.youtube.com/watch?v=zFVJ2OBMICM

SUGGESTED BOOKS AND ARTICLES:

1. Islamiat Text Books for Elementary Classes, Publisher : Punjab Curriculum and Textbook Board
2. Mastering O Level Islamiat, Muhammad Bilal Aslam, Publisher: TARIQ NAJIB CORPORATION
3. Islamiyat (Urdu) Revised Edition Teaching Guide 1: https://oup.com.pk/school-textbooks/islamic-studies/islamiyat-urdu-revised-edition-teaching-guide-1.html
4. ISLAMIAT AND ITS TEACHING AIOU B.ED Book: https://tajassus.com/0654-islamiat-and-its-teaching-aiou-b-ed-book-download/
5. Teachers' Guide – Aasan Islamiat – 4: https://fidem.com.pk/wp-content/uploads/2019/03/Islamiat-TRB-4.pdf
6. An Innovative Teaching Method in Islamic Studies: The Use of PowerPoint in University of Malaya as Case Study: https://www.researchgate.net/publication/282536591_An_Innovative_Teaching_Method_in_Islamic_Studies_The_Use_of_PowerPoint_in_University_of_Malaya_as_Case_Study
7. Zedan, Ashraf. "M., Mohd Yakub Zulkifli Bin Mohd Yusoff, & Mr. Roslan Bin Mohamed,(2015). An Innovative Teaching Method in Islamic Studies: The Use of Power Point in University of Malaya as Case Study." Procedia-Social and Behavioral Sciences 182: 543-549.
8. Lubis, Maimun Aqsha, Melor Md Yunus, Mohammed Diao, Tajul Arifin Muhamad, Ramlee Mustapha, and Noriah Mohd Ishak. "The perception and method in teaching and learning Islamic education." International Journal of Education and Information Technologies 1, no. 5 (2011): 69-78.
9. TEACHING OF ISLAMIC STUDIES AS A SUBJECT IN THE SECONDARY SCHOOLS AND MADARIS IN PAKISTAN: http://www.uob.edu.pk/journals/TEACHING%20OF%20ISLAMIC%20STUDIES%20AS%20A%20SUBJECT%20IN%20THE%20SECONDARY%20SCHOOLS%20AND%20MADARIS%20IN%20PAKISTAN.pdf
10. Teaching of Islamic Studies: https://vulms.vu.edu.pk/Courses/EDU512/Downloads/Handouts%20of%20Teaching%20of%20Islamic%20Studies%20(EDU-512).pdf

Year II

Semester III

Course code	COURSES	credit hrs
PC/ B.Ed.-201	Teaching Literacy Skills (Professional)	3
PC/ B.Ed.-202	Teaching of Urdu/ Regional Languages (Professional)	3
PC / B.Ed.-203	Teaching of General Science (Professional)	3
PC / B.Ed.-204	Instructional and Communication Technology(ICT) in Education (Professional)	2
CoC /B.Ed.-201	Art, Crafts and Calligraphy (Content)	3
TP/ B.Ed.- 201	Teaching Practice (Short Term)	3
	Total Credit Hours	17

PC/ B.Ed.-201	TEACHING LITERACY SKILLS (PROFESSIONAL)	3

COURSE OBJECTIVES

After completing this course, pre-service teachers/teachers will be able to:

1. describe reading as a holistic process comprising comprehension, fluency, and word recognition/solving.
2. Identify phases of second language development and the implications for reading and writing instruction
3. identify various phases in reading development.
4. explain the reciprocal nature of reading and writing and the effects of children's language on their development as readers and writers
5. develop a repertoire of strategies for teaching comprehension, vocabulary, fluency, and word recognition/solving to diverse early readers, including multilingual learners and children learning a new language.
6. differentiate instruction through various classroom organizational structures and teaching strategies.
7. Identify supports for learning to read and write, including family and community.

SUGGESTED TEACHING APPROACHES

. The students will engage in small group work in order to process and clarify assignments as well as material read and material presented in a whole group brief lecture/discussion format, modeled lessons, and video presentations. Students will work with partners or small groups.

RECOMMENDED ASSESSMENT

Assessment to check student understanding in class will be through tasks given in small group work in order to process and clarify assignments as well as material read and material presented in a whole group brief lecture/discussion format, modeled lessons, and video presentations. Students will work with partners or small groups. Individual assignments will also be given.

COURSE CONTENT

Unit 1: What is Reading and Writing

- Introduction
- Why this Course?
- What is Skilled Reading? What is Skilled Writing?
- Components of Reading
- Oral Language as the Foundation of Reading
- The Sub-systems of Language
- Learning to Read and Write in a Multilingual Context
- Home-School Connection
- Stages of Second-Language Acquisition
- Phases and Models of Reading and Spelling Development

- Stages of Writing Development

Unit 2: Growing Up to Read and Write: Early Reading and Writing

- Phonological Awareness Alphabetic Principle
- Instructional Strategies for Word Recognition
- Book Reading
- Literacy-Rich Classroom Environment
    - Types of print resources to use in the early-literacy classroom Differentiating instruction in a print-rich classroom.

Unit 3: Becoming Readers and Writers (Grades 1-3)

- Instruction Strategies for Fluency
- Instructional Strategies for Vocabulary
- Instructional Strategies for Comprehension
- Matching Texts to Students
- Guided Reading
- Writing as a Window Into Reading
- Course Wrap-Up

SUGGESTED REFERENCES

1. M.S.Burns, P. Griffin, and C.E. Snow (1999). *Starting Out Right: A Guide to Promoting Children's Reading Success.* Washington, DC: National Research Council. Available on line: http://www.nap.edu/catalog.php?record_id=6014
2. Anne L. Steele, School Specialty Publishing-Reading for Every Child_ Phonemic Awareness, Grades K-1 -Instructional Fair (2004)
3. Anne Vander Woude, School Specialty Publishing-Reading for Every Child_ Fluency, Grade K -Instructional Fair (2004)
4. B. Mikulecky-More Reading Power_ Reading Faster, Thinking Skills, Reading for Pleasure, Comprehension Skills-Addison Wesley Publishing Company (1996)
5. Educational Publishing House Pte. Ltd.-Practice Makes Perfect - English K1
6. Karen Breitbart, School Specialty Publishing-Reading for Every Child_ Comprehension, Grade K -Instructional Fair (2004)
7. Kate Grant-Supporting Literacy_ A Guide for Primary Classroom Assistants (2000)
8. Lawrence Baines-A Teacher's Guide to Multisensory Learning_ Improving Literacy by Engaging the Senses (2008)
9. *Put Reading First: Help Your Child Learn to Read from* *http://lincs.ed.gov/publications/pdf/PRFbrochure.pdf*
10. *Learning to Read and Write: Developmentally Appropriate Practices for Young Children* http://www.naeyc.org/files/naeyc/file/positions/WWSSLearningToReadAndWriteEnglish.pdf
11. *Starting Out Right: A Guide to Promoting Children's Reading Success* http://www.nap.edu/catalog.php?record_id=6014

WEB RESOURCES

http://www.naeyc.org/files/naeyc/file/positions/PSREAD98.PDF

Where we Stand: On Learning to Reading and Write
http://www.cal.org/projects/archive/nlpreports/Executive_Summary.pdf *Executive Summary:*

Developing Literacy in Second-Language Learners: Report of the National Literacy Panel on Language-Minority Children and Youth

http://www.aft.org/pdfs/teachers/rocketscience0304.pdf *Teaching Reading IS Rocket Science: What Expert Teachers of Reading Should Know and Be Able to Do*

http://lincs.ed.gov/publications/pdf/PRFbooklet.pdf *Put Reading First: Kindergarten to Grade 3*
http://tapestry.usf.edu/nutta/data/content/docs1/NaturalApproachNarrative.pdf The Natural Approach: Stages of Second Language Development

Web sites:
http://www.readinga-z.com: Reading A to Z

www.ttms.org/: Teaching That Makes Sense

http://www.readingrockets.org/: Reading Rockets

http://www.colorincolorado.org/: Colorin Colorado

http://www.pbs.org/parents/readinglanguage/ PBS Parents Reading and Language

http://www.fountasandpinnellleveledbooks.com Fountas & Pinnell Leveled Books

Videos: http://www.learner.org/resources/series162.html Teaching Reading K-2: A Library of Classroom Practices
http://www.learner.org/workshops/writing35/index.html Reading Like a Writer Videos

CoC /B.Ed.-201	ART, CRAFTS AND CALLIGRAPHY (CONTENT)	3

COURSE OBJECTIVES

By the end of the semester participants will be able to:

1. Explain the importance of art education and its role in child development especially for nurturing creativity, enhancing aesthetic sense and stretching imagination.
2. Use tools and materials in art more skillfully
3. Use of an art journal on their own artistic ideas and thoughts for refining their teaching as an art teacher
4. Recognize and appreciate artists, art styles, and artwork
5. Reflect and participate in art critiques as a critic and as an artist
6. Initiate independent projects that allow personal interpretation and self-expression
7. Identify links between art and other school subjects

SUGGESTED TEACHING APPROACHES

Participants will engage in instructional activities using a greater variety of materials and/or combination of materials. It will provide opportunities for participants to explore their abilities to transmit forceful and meaningful ideas in a variety of media to a two-dimensional surface based on their previous experiences.

RECOMMENDED ASSESSMENT

Participants would be encouraged to use sketch books to note information and develop ideas, make use of a good variety of media to illustrate art history lessons, e.g. teacher can explore and experiment with different mediums to illustrate her ideas, she can develop a time line mural, explore low cost materials for making cave arts etc develop skills in note-making when viewing reproductions of the work of artists and designers; set regular assignments for homework which require personal research. Variety of teaching and learning approaches would be used e.g. the museum visit/ report and the research project, glossary, handouts.

COURSE CONTENT

Unit 1: Introduction to Arts, Crafts & Calligraphy (2 Weeks)

- What are Arts, Crafts and Calligraphy?
- The role of the teacher in teaching art

Influence of the arts in children's development

- Calligraphy- The emergence of Islamic calligraphy
- Ceramics and Sculpture

Puppetry in Pakistan

Unit 2: History and Culture

- Indus Civilizations

Exploration of history through a museum visit Art and Architecture (From Indus to Mughal)

- Islamic Art and Calligraphy (Introduction of art and craft and calligraphy /origin from Persian artist and their calligraphy)
- Pakistani Calligraphers (Anwar Jalal Shimza, Rasheed Butt, Hanif Ramy, Zahoor-ul- Ikhlaq, Arshad, Sadqain, Shakir Ali, Gul gee, Aslam Kamal)

Review of this unit

Unit 3: History and Culture

- Introduction to the Cubism Understand the Cubism

Pakistani Artist‘s (worked in Realism e.g. Shakir Ali Mansoor Rahi)

- Intro about Realism
- Pakistani Artist‘s work in Realism
- (Ali Imam, M. Husain, Hanjra, Khalid Iqbal, Ana Molka) Hands-on activities
- Abstraction
- Origin and History of Abstract art
- Explore the work of Pakistani artists in abstract (Ahmed Pervaiz, Lubna Latif, Maqsood Ali, Anwar Maqssod Hameed Ali)
- Hands-on activities
- Indigenous art
- Pottery, ceramics, textile etc. Hands-on activities
- Art Across the curriculum
- Ideas to integrate art with languages, science, social studies, mathematics etc. Teachers will be facilitated to learn how illustrations, drawings and craft work can be used to understand and express the concepts of science, maths, social studies and skills in languages
- Hands on activities and conclusion

Unit 4: Elements of Art & Principle of Design

- Understanding elements of art (line, Shapes, color, texture, and space and volume)
- The importance of lines and its use in art work
- Kinds of lines
- Use of color (Color wheels, tints, tones and shade)
- Use of Space and value in 2D and 3D art Texture

- Use of Space and value in 2D and 3D art

Texture

- (Natural and man- made)
- Introduction of Principle of Design (unity, variety, balance, contrast, emphasis, and pattern and proportion)
- Drawing/ technique of rendering
- Still life / Painting /Printing / Pattern making
- Shapes- organic and geometrical shapes
- Sculpture Landscape
- Stick Drawing and conclusion and review of the unit
- What is assessment in art curriculum?
- How and why we assess creativity?
- Review the recommendations proposed in the national curriculum grades
- Design rubric/checklist for portfolio
- Set criteria for presentation/display/ peer and self-assessment etc.
- Conclusion and review of whole unit

SUGGESTED REFERENCES

1. Barnes, R. (1996). Teaching Art to Young Children 4-9. London and New York : Routledge, (1996).
2. Eisner, E. (2002). The Arts and the Creation of Mind, Chapter 4, What the Arts Teach and How It Shows. Yale University Press, NAEA Publications, (2002).

3. J., Lancaster. (1990. Art in the Primary Schoo. Bungay, Suffolk : Richard Clay Ltd, (1990. Jenkins, P.D. 1986. Art for the fun of it. A guide for teaching young children. USA : Simon & Schuster, 1986.
4. K., Gentle. 1993. Teaching Painting in the Primary School. UK: Redwood Books, Trowbridge, 1993.
5. Matthews, J. 1994. Helping Children to Draw & Paint in early Children. Children and visual representation. London : Hodder & Stoughton., 1994.
6. P., Gura. (1996). Resources for early Learning Children, Adults and Stuf. London : Hodder & Stoughton
7. P., Tambling. (1990. Performing Arts in the Primary School. UK :
8. Vandal, S.H. Art Education in Pakistan: A case study of bringing art to school children at the informal level. Pakistan : s.n.
9. Razzak. A (2011) Children and Art- Status of art education in Pakistan: VDM. Germany Razzak. A (2009) Fun with paper bag: Feroz Sons. Lahore
10. Sahi, J., & Sahi, R. (2009). Learning Through Art: A Resource Book for Primary School Teachers. Eklavya, in collaboration with Vidyankura, NIAS, Bangalore.

WEB RESOURCES

1. Craft, A. (2003). Creative thinking in the early years of education. *Early Years: An International Journal of Research and Development*, *23*(2), 143-154.
2. Thompson, C. M. (1997). Teaching art in elementary schools: Shared responsibilities and distinctive roles. *Arts Education Policy Review*, *99*(2), 15-21.
3. Garber, E. (2002). Craft education in Finland: Definitions, rationales and the future. *International Journal of Art & Design Education*, *21*(2), 132-145.

PC/ B.Ed.-202	**TEACHING OF URDU/ REGIONAL LANGUAGES (PROFESSIONAL)**	**3**

نصاب برائے تدریسِ اردو (فنکشنل/عملی)

- کورس کا تعارف: (COURSE DESCRIPTION)
- حاصلاتِ تعلم: (COURSE OUTCOMES)
- تعلّمی اور تدریسی رسائیاں: (LEARNING AND TEACHING APPROACHES)
- یونٹ (UNIT)

۱۔ نظریہءزبان

۲۔ عملی تدریسی طریقے (سننا، بولنا اور سمجھنا)

۳۔ عملی تدریسی طریقے (پڑھنا اور لکھنا)

۴ ۔ جائزہ و آزمائش

- حوالہ جات (REFERENCES)
- اسائنمنٹ (مختلف موضوعات) (ASSIGNMENTS)
- کورس سے متعلق لازمی معلومات
- اردو سے متعلق غلط فہمیوں کا اِزالہ
- یونٹ نمبر ا سے متعلق سبقی اشارے
- تفصیلی سبقی خاکے
- دیگر یونٹس سے متعلق اہم سبقی اقدامات

سال دوم/سمیسٹر ۳

ایسوسی ایٹ ڈگری آف ایجوکیشن/ADE

کریڈٹ:۳

پیش لازمہ: (PREREQUISITES)

تدریسِ اردو کے اس کورس میں صرف وہ طلبہ داخلے کے اہل ہوں گے۔جو سمیسٹر اول میں اردو کورس کامیابی سے مکمل کر چکے ہوں۔

کورس کا تعارف: COURSE INTRODUCTION

اس کورس میں زیرِ تربیت اساتذہ نظریہء آموزشِ زبان(The Theoryof Learning of Language) اور زبان کے متنوع ماحول (FEATURES OF A LANGUAGE -RICH ENVIRONMENT) کے حوالے سے تدریسِ زبان کو سمجھیں گے۔ ماہرینِ زبان کا کہنا ہے کہ زبان کا فطری سافٹ وئیر پیدائش سے قبل ہی ہمارے دماغ میں موجود ہوتا ہے اور یہ پروگرام یونیورسل گرائمر کہلاتا ہے۔ بچے اپنی معصوم عمر ہی میں ہم سے اچھے زبان کے متعلم ہوتے ہیں۔اس نظریے کے تحت اس کورس میں ابتدائی اور وسطانی جماعتوں کی درجہ بندی کی گئی ہے۔ لسانی مہارتوں کو جماعت بندی کے تحت عملی تدریسی طریقے (سننا، بولنا اور سمجھنا) اور عملی تدریسی طریقے (پڑھنا اور لکھنا) میں تقسیم کیا گیا ہے۔علاوہ ازیں ان مہارتوں پر دسترس کے نقطہء نظر سے آڈیو لنگوئل اور ٹوٹل فزیکل جیسے عملی طریقوں سے استفادہ کیا گیا ہے۔

جائزہ و پیمائش اور اس پر تنقید کرنا مدرس کے لئے بہت مفید ہے۔اشاراتِ سبق کامیاب تدریسی حکمت عملی کی ضمانت ہیں۔ جو اساتذہ کی تربیت کا لازمی ہیں۔اس لیے اس نصاب میں ایلیمینٹری اساتذہ جماعت اول تا ہشتم جدید سبقی اشارات نا صرف خود تیار کریں گے بلکہ ایلیمینٹری مدارس میں ان کی عملی مشق بھی کریں گے۔اس کورس کی جدت یہ ہے کہ سبقی اشارات کی تیاری اور عملی مشق کورس کا آخری یونٹ نہیں بلکہ دورانِ کورس جاری رہے گی۔

حاصلاتِ کورس: COURSE OUTCOMES

اس کورس کی تکمیل کے بعد زیرِ تربیت اساتذہ اس قابل ہو جائیں گے کہ وہ:

- نظریہء آموزشِ زبان (The Theory of Teaching of Language) کے فطری تقاضوں کو سمجھ سکیں۔
- اردو زبان شناسی پر عبور حاصل کر سکیں۔
- سن کر لہجے، تلفظ کی ادائیگی اور الفاظ کے آہنگ کا لطف لے سکیں۔
- بڑھ کر جملہ سازی کی تحریری مشق کر سکیں۔
- پڑھ کر زندگی سے متعلق مختلف موضوعات پر عمدہ تحریریں پیش کر سکیں۔
- جائزہ و آزمائش کے جدید ترین انداز سبقی اشارات میں بتا سکیں۔
- طریقہ ہائے تدریس میں عملی کا مظاہرہ کر سکیں۔
- ابتدائی سے وسطانی سطح کے تدریسی کورس پر سمعی بصری معاونات و سبقی اشارات تیار کر سکیں۔

تعلّمی اور تدریسی رسائیاں: (LEARNING AND TEACHING APPROACHES)

نظریہء آموزشِ زبان کے ماہرین کا کہنا ہے کہ بچہ ماں کے پیٹ ہی سے سننا شروع کر دیتا ہے۔ کیوں کہ زبان بچے کے جینز میں پوشیدہ ہوتی ہے۔ جدید تکنیکی مہارتیں، تدابیر، فطری سانچے، آزمائشی سوالات اور سوالنامے تدریسی عمل کو جانچتے، پرکھتے اور معیارِ استدلال مقرر کرتے ہیں۔ اس کورس کی تدریسی تعلّمی رسائی زیرِ تربیت اساتذہ کا (جماعت اول تا ہشتم) کے طلبہ کے لیے فراوانی زبان کا ایک متنوع ماحول تیار کرنا اور آموزشی قالب تیار کرنا ہے۔ جو معیارِ زبان کے اصولوں پر پرکھے جاسکیں۔ کورس سے منسلک ان سرگرمیوں کا مقصد زیرِ تربیت اساتذہ کو اپنی تعلّمی ذمے داری بڑھانے کا موقع فراہم کرنا ہے۔

یونٹ ۱

نظریہء زبان

(THEORY OF LANGUAGE)

تعارف:

زبان کے متنوع ماحول میں بچے کے لیے کثرت سے ماحولیاتی مواد زبانی اور تحریری صورت میں موجود ہوتا ہے جو والدین، عزیز و اقارب اور اساتذہ کی جانب سے میسر آتا ہے۔ اس یونٹ میں زیرِ تربیت اساتذہ فراوانی زبان کی نمایاں خصوصیات EATURES OF A LANGUAGE -RICH ENVIRONMENT کو سمجھتے ہوئے آموزشِ زبان کے وسیلوں کے مطابق زبان کے فطری سانچوں پر تدریسی حکمتِ عملی تیار کریں گے۔ مثلاً بچوں کو بات کرنے کے مواقع فراہم کرنا، اردگرد کے ماحول پر رائے لینا، خواہش دریافت کرنا اور منظوم و نثری آسان فہم مواد فراہم کرنا وغیرہ۔ اردو کی لسانی خوبیاں صوتی، قواعدی، متنی نوعیت کی حامل ہیں۔ ان خوبیوں سے استفادہ کرتے ہوئے زیرِ تربیت اساتذہ جماعت اول تا ہشتم کے تدریسی مسائل پر کیسے قابو پاتے ہوئے جدید سبقی ڈیزائن میں کارآمد تدریسی تدابیر اختیار کرتے ہیں۔ اس یونٹ کا کام عملی تدریسی معلومات فراہم کرنا ہے تاکہ اساتذہ عملی مشق کی تیاری کرسکیں۔

پہلا ہفتہ

- نظریہء زبان (THEORY OF LANGUAGE)
- آموزشِ زبان کے وسیلے (پیدائش سے پہلے اور بعد کے محرکات، والدین، اساتذہ)
- اردو زبان کا متنوع ماحول

دوسرا ہفتہ

- اردو کی بنیادی لسانی خصوصیات (صوتی، قواعدی، متنی)
- اردو سے متعلق غلط فہمیوں کا ازالہ
- اردو کی تدریسی تدابیر

تیسرا ہفتہ

- جدید سبقی ڈیزائن

- تدریسی تکنیک
- سمعی بصری معاونات

عملی مشق (TEACHING PRACTICE) شروع ہونے سے پیش تر اساتذہ موضوعاتی بحث کے ذریعے درج بالا نکات کے تحت راہنما استاد کی زیرِ نگرانی اپنی حکمتِ عملی طے کریں گے۔

یونٹ ۲

عملی تدریسی طریقے (سننا، بولنا اور سمجھنا)

ابتدائی تا وسطانی سطح کی جماعتیں

تعارف:

زبان کی تدریس میں صرف سننا ہی کافی نہیں، سن کر سمجھنا ہی اصل شے ہے۔ بچے کے اردگرد مبہم آوازیں اس کے لیے جلد از جلد زبان ازبر کرنے میں مددگار بنتی ہیں۔ زبان سننا اس کے سیکھنے کا پہلا مرحلہ ہے۔ تدریسِ زبان میں بھی پہلی مہارت سننا سکھانا یا تدریسِ سماعت ہے۔ جماعت اول تا ہشتم عملی تدریسی طریقوں (سننا، بولنا اور سمجھنا) کے ذریعے حروف اور الفاظ کی کھوج زبان کا عملی پہلو ہے۔ قرآن ۷۵۶ آیات میں مطالعہء کائنات کا درس دیتا ہے۔ اس کائنات میں موجود ہر شئے پر غور کرنے کی دعوت دیتا ہے۔ اس یونٹ میں دیکھ کر زبان سیکھنا یعنی مطالعہ بہ ذریعہ سماعت تدریس کیسے کی جائے۔ اوصافِ خوش خوانی تدریسِ نظم ونثر میں کارگر ثابت ہوتے ہیں اس لیے زیرِ تربیت اساتذہ جدید طریقہ ہائے تدریس مثلاً (فنکشنل، آڈیولنگوئل اور ٹوٹل فزیکل) کو جدید سبقی اشارات میں دورانِ عملی تدریس استعمال کریں گے۔ زیرِ تربیت اساتذہ کی تدریس دورانِ کورس جاری رہے گی۔ اس لیے ایک ہفتہ سبقی اشارات کی تیاری کے لیے مختص کیا گیا ہے۔ جس میں زیرِ تربیت اساتذہ عملی تدریسی طریقے (سننا، بولنا اور سمجھنا) اور مطالعہ بہ ذریعہ سماعت تدریس کا گر سیکھ سکیں۔

چوتھا ہفتہ

- اوصافِ خوش خوانی/کرداری مقاصد (تلفظ، روانی، تاکید، لب ولہجہ، تفصیل)
- بنیادی لسانی عادات/مہارتیں تعارف (بولنا، سننا، سمجھنا)
- بولنا اور سننا (فنکشنل، آڈیولنگوئل اور ٹوٹل فزیکل طریقوں سے مشق)

پانچواں ہفتہ

- بہ ذریعہ قصہ/کہانی (تمثیل، ڈراما، قصہ گوئی)
- بہ ذریعہ کھیل (مثلاً لفظ کی بناوٹ میں حروف کی کھوج)
- بہ ذریعہ مطالعہ (ٹی وی، ریڈیو، کمپیوٹر، مطالعہء کائنات)

چھٹا ہفتہ

- پرائمری سطح پر تدریسِ نظم
- مڈل سطح پر تدریسِ نظم
- فی البدیہہ نظم گوئی

ساتواں ہفتہ

- سبقی اشارات/طریقہ ہائے تدریس (ابتدائی تاوسطانی سطح کی جماعتیں)
- سبقی ڈیزائن/تکنیکی مہارتیں/تدریسی حکمتِ عملی نظم ونثر

یونٹ ۳

عملی تدریسی طریقے (پڑھنااورلکھنا)

ابتدائی تاوسطانی سطح کی جماعتیں

تعارف:

اس یونٹ میں عملی تدریسی طریقوں (پڑھنااورلکھنا) کی مشق کروائی جائے گی۔تاکہ زیرِتربیت اساتذہ الف بائی طریقے سے حروف کی ساخت اورتحلیلی طریقے سے مرکب جملے بنانے کی مشق کا استعمال اشاراتِ سبق کی تیاری میں خوب کرسکیں۔مثلاً ابتدائی جماعتوں کے لیے حروف کی پہچان پرآزمائشیں تیارکرنایاوسطانی جماعتوں میں مولانا روم کی حکایات پڑھا کرکہانی لکھنے کا ہنرسکھانا۔تصویردکھا کرکہانی کے مختلف پلاٹ تیار کرنااورپھرسننے بولنے کی مشق کروانا جوہرسطح پرکی جاسکتی ہے۔تاہم ابتدائی تادرمیانی سطح کی جماعت کا معیار،استحسان واستدلال مدِنظررکھ سبقی اشارات تیارکیے جائیں گے۔کیوں کہ اشاراتِ سبق کی تیاری اورعملی مشق ہریونٹ کاحصہ ہیں۔تاکہ زیرِتربیت اساتذہ عملی مشق کی اہمیت سمجھ سکیں۔

آٹھواں ہفتہ

- طریقہ ہائے تدریس کاتعارف (ابتدائی ووسطانی سطح کے مطابق)
- الف بائی،مخلوطی،تحلیلی طریقے
- فنکشنل/عملی اردو

نواں ہفتہ

- زبان شناسی کی تدریس (ابتدائی وثانوی سطح کے مطابق)
- تدریسِ قواعد (بہ ذریعہ نظم)
- تدریسِ قواعد (بہ ذریعہ اقتباس)

دسواں ہفتہ

- رول پلے،بازرسی (FEED BACK)
- فنکشنل/عملی طریقے (ابتدائی وثانوی سطح کے مطابق)
- تدریسی تدابیر (ابتدائی وثانوی سطح کے مطابق)

گیارھواں ہفتہ

- منظومات پرمبنی اسباق کی منصوبہ بندی جماعت اول تاسوم
- نثرپرمبنی اسباق کی منصوبہ بندی جماعت اول تاسوم
- نثرپرمبنی اسباق کی منصوبہ بندی جماعت چہارم تاششم

یونٹ ۴

جائزہ وآزمائش

تعارف:

تدریسی عمل کا جائزہ اور اس پر تنقید کرنا مدرّس کے لیے بہت مفید ہے۔ اسباق کے جائزے میں مدرّس کے اشارات، سبق کی خوبی اس کے موقف کی موزونیت، اس کی تدابیر، توضیح کی کامیابی، اس کے عمل تدریس کی کیفیت اور بہ حیثیت مجموعی اس کے سبق کے اثر اور نتیجے پر خاص نگاہ تنقید ڈالنی چاہیے۔ زبان کی جانچ پڑتال کے سائنٹفک قالب تیار کرنا اس یونٹ کا کارآمد پہلو ہے۔ ایلیمینٹری اساتذہ جماعت اول تا ہشتم ہر درجے میں شامل نصاب پر نئے پیمانے تیار کرسکیں گے۔

بارھواں ہفتہ

- جائزہ وآزمائش تعارف
- سوالات کی تکنیک، مشق
- کلوز ٹیسٹ، کثیر انتخابی
- آزمائش (TEST)

تیرھواں ہفتہ

- سوالنامے
- پرچہ جات
- اسائنمنٹ

چودھواں ہفتہ

- ابتدائی سطح کے سانچے (جماعت اول تا سوم)
- وسطانی سطح کے سانچے (جماعت چہارم تا ششم)
- مڈل/وسطانی سطح کے سانچے (جماعت ہفتم وہشتم)

پندرھواں ہفتہ

- منظومات پر مبنی اسباق (جماعت چہارم تا ششم)
- نثر پر مبنی اسباق (جماعت ہفتم وہشتم)
- منظومات پر مبنی اسباق (جماعت ہفتم وہشتم)
- نثر پر مبنی اسباق (جماعت ہفتم وہشتم)

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ماڈل اسائنمنٹ: (ASSIGNMENTS)

۱۔ مختلف موضوعات پر اخباری اشتہارات لکھیں اور ایک ہفتے میں جمع کروائیں۔ اشتہار رنگارنگ، بامعنی اور جدید ہوں۔

۲۔ رموزِ اوقاف پر اس انداز سے سبقی اشارہ تیار کیجیے کہ کہانی کی کہانی ہو اور رموزِ اوقاف پڑھا دیے جائیں۔ کم از کم تین دن میں سبقی خاکہ جمع کروائیں۔

۳۔ دو گروپوں میں سننے/ بولنے اور پڑھنے/ لکھنے کی مہارتیں تقسیم کی جائیں گی دونوں گروپ اسکرپٹ لکھ کر رول پلے/تمثیل تیار کریں گے۔ دونوں گروپ اپنے مکالمے (اسکرپٹ) تحریری صورت میں ایک ہفتے میں جمع کروائیں گے۔

۴۔ جماعت اول اور ہشتم سے دو اسباق پر سائنٹفک قالب تیار کریں اور ایک ہفتے میں جمع کروائیں۔

نصاب سے متعلق لازمی معلومات:

یہ ہمارا روزمرہ کا مشاہدہ ہے کہ پیدائش کے بعد بچہ اپنے ماحول میں بولی جانے والی زبان خود بہ خود ایک مختصر عرصے میں بولنا شروع کر دیتا ہے۔ اس عام مشاہدے کی غور طلب بات یہ ہے کہ ایک چھوٹا بچہ جس کی ذہنی صلاحیتیں ابھی نشوونما کے مراحل سے گزر رہی ہیں، زبان جیسی پیچیدہ

چیز خود بہ خود کیسے سیکھ لیتا ہے۔ نہ تو اُس نے اسکول کی شکل دیکھی ہے، نہ کسی ٹیوٹر نے اُسے بتایا ہے کہ بولا کیسے جاتا ہے اور نہ والدین نے اسے بولی جانے والی زبان کے اسرار و رموز سمجھانے کی کوشش کی۔ کسی بیرونی دباؤ یا درس و تدریس کے بغیر پیدائش کے دو سالوں کے اندر اندر بچے کا زبان سیکھ جانا صرف حیرت ناک عمل ہی نہیں ہے بلکہ تدریس زبان کے اساتذہ کے لیے اس میں ایک عظیم سبق پنہاں ہے۔

زبان سیکھنے کے اس قدرتی عمل سے یہ بات اخذ کرنا مشکل نہیں ہے کہ زبان سیکھنا ایک فطری عمل اور بچہ یہ خداداد صلاحیت لے کر پیدا ہوتا ہے۔ بچہ کا ماحول اس خداداد صلاحیت کو پروان چڑھانے میں اہم کردار ادا کرتا ہے۔ ایک ایسا ماحول جہاں بچے کے لیے محبت، عزت اور آزادی ہو بچے کو سیکھنے کے عمل میں مدد کرتا ہے۔ Noam Chomsky کے نظریے کے مطابق دنیا میں آنے والا ہر بچہ اپنے ساتھ دماغ میں ایک خاص عضو لے کر آتا ہے جسے Language Acquistion Device کہتے ہیں۔ زبان سیکھنے کے بنیادی اصول و اجزا پیدائشی طور پر موجود ہوتے ہیں۔ پیدائش کے بعد جب بچہ اپنے ماحول میں بولی جانے والی زبان سنتا ہے تو اس کی زبان سیکھنے کی فطری صلاحیتیں متحرک ہو جاتی ہیں اور کچھ عرصے میں بچہ کا دماغ بولی جانے والی زبان کی پیچیدگی کو سمجھنے لگتا ہے اور بچہ زبان بولنا شروع کر دیتا ہے۔

سننا اور بولنا دو اہم لسانی مہارتیں ہیں۔ عام طور پر تدریس اُردو میں ان مہارتوں پر توجہ نہیں دی جاتی۔ آموزش زبان کی ابتدا سننے سے ہوتی ہے اور سننے کا ردعمل بولنے کی صورت میں سامنے آتا ہے۔ اگر چہ سننا اور بولنا فطری صلاحیتیں ہیں اور غیر رسمی طریقے سے خود بہ خود نشو و نما پاتی ہیں مگر اُنھیں بھی جلا دینے کی ضرورت ہے۔ سننا، سن کر سمجھنا، سمجھ کر مناسب ردعمل کا اظہار کرنا اور مناسب لب و لہجہ اختیار کرنا وغیرہ سننے اور بولنے کے مختلف مرحلے ہیں اور ان کے لیے مناسب تربیت بہت اہمیت رکھتی ہے۔ کیوں کہ

- سننے اور بولنے کی فطری صلاحیتوں کو جلا ملتی ہے۔
- غور سے سننے اور سننے کے عمل کو مؤثر بنانے کی صلاحیت پیدا ہوتی ہے۔
- درست زبان میں اپنے دل کی بات سادہ اور قابل فہم انداز سے بیان کرنے کی اہلیت پیدا ہوتی ہے۔
- بلا جھجک، اعتماد اور روانی کے ساتھ گفتگو کی صلاحیت پیدا ہوتی ہے۔

یہ ہم سب کا مشاہدہ ہے کہ ایک ایسا ماحول جہاں بچے کو زبان بولنے کی آزادی ہو، جہاں اُس کو گفتگو کرنے کے مواقع ملتے ہوں اور جہاں اس کی عزت نفس کا احترام ہوتا ہو اُس کو زبان سیکھنے میں بہت مدد دیتا ہے۔ اُردو زبان کے اس کورس میں جہاں ان مہارتوں کے خاص پہلوؤں کی پر توجہ دی گئی ہے۔ وہیں ان مہارتوں کو پروان چڑھانے کے لیے ادبی/نصابی کتب سے مربوط کیا گیا ہے۔ لسانی مہارتوں کو مربوط پروگرام کے تحت

زیرِ تربیت اساتذہ کے لیے دیے گئے۔ اس کورس کے تمام یونٹوں کی اس طرح منصوبہ بندی کی گئی ہے کے چاروں لسانی مہارتیں یونٹ کا بنیادی مرکز رہیں۔ زیرِ تربیت اساتذہ تمام یونٹوں کی تدریس کے دوران اشاراتِ سبق کی تیاری اور عملی مشق بھی سرانجام دیں گے۔ اور ایسی سرگرمیاں بچوں کے لیے تیار کریں گے جس سے بچے نہ صرف سرگرمی سے پڑھنے اور سمجھنے میں حصہ لیں بلکہ اُنھیں پڑھنے، لکھنے سننے اور بولنے کے مواقع بھی ملیں۔

ابتدائی سے وسطانی جماعتوں میں اُردو کی نصابوں کتاب میں دیے گئے ہر سبق کا مقصد تدریس اُردو ادب کی مختلف اصناف سے واقف کروانا بھی ہے۔ دوران تدریس اگر اساتذہ کرام اس نقطے کو خاطر میں نہیں لائیں گے تو اُردو پڑھانے کا حق ادا نہیں ہوگا۔ مثلاً چچا چھکن کا سبق اس لیے دیا گیا ہے کہ طلبہ کی توجہ کردار نگاری کی طرف دلائی جاسکے دوران تدریس اگر اساتذہ بچوں کو یہ غور کرنے میں مدد نہیں کریں گے کہ امتیاز علی تاج نے چچا چھکن کا کردار یا ٹوٹ بٹوٹ کیسے تراشا ہے، کس طرح اس کردار کو پیش کیا ہے وغیرہ تو اس سبق کو پڑھانے کا مقصد پورا نہیں ہوگا۔ اسی طرح یہ بات شخصیت نگاری، منظر نگاری، آپ بیتی اور سفر ناموں والے اسباق پر لاگو ہوتی ہے۔ اس لیے اس کورس میں اصنافِ ادب کو درج بالا جماعتوں کے مطابق درجہ بندی اور لسانی مہارتوں کے تحت شاملِ نصاب کیا گیا ہے۔

ہر استاد اپنی شخصیت، ذہانت اور قابلیت کے مطابق تعلیم دیتا ہے۔ تاہم یہ اندازہ لگانا کہ کس طرح کامیاب تدریس کی جائے، بہت اہم ہے بنیادی تدریسی تکنیک کے بغیر یہ ممکن نہیں کہ استاد اپنے مقصد میں کامیاب ہو جائے۔ اور یہ شعبہ ایسا ہے جس میں تبدیلی، چیلنج اور گنجائش ہر وقت موجود رہتی ہے اس لیے اس کورس میں جانچنے، پرکھنے اور معیار مقرر کرنے کے نئے پیمانے دورانِ تدریسی مشق تیار کرنے پر خاص توجہ دی گئی ہے۔ امید ہے فنکشنل/عملی اندازِ تدریس کی جانب مثبت قدم ثابت ہوگا۔

اردو سے متعلق غلط فہمیوں کا اِزالہ

اُستاد کا اُردو رسم الخط میں مہارت رکھنا خصوصاً ابتدائی جماعتوں میں از حد ضروری ہے۔ اردو کو آسان مضمون سمجھنے کی وجہ سے اردو پڑھانے والے اکثر اردو زبان کے استاد نہیں ہوتے اور اگر موجود بھی ہوں تو شاید ادب کے طالبِ علم تو ہوں مگر زبان کے استاد نہیں۔ گفتگو میں پہلا مرحلہ لب و لہجے کی درستی کا ہے۔ اس کے لیے صحیح تلفظ سکھانا ضروری ہے۔ تلفظ سے مراد یہ ہے کہ ہر حرف کی آواز اس کے صحیح مخرج کے ساتھ ادا کی جائے اور ہر لفظ نہ صرف درست طریقے پر بولا جائے بلکہ الفاظ کے درمیان مناسب ٹھہراؤ، فاصلے اور وقفوں کا تعین کیا جائے۔

حرکات و سکنات کا صحیح استعمال کیا جائے اور ادائیگی ٹھہر ٹھہر کر مناسب لہجے کے ساتھ کی جائے۔ تلفظ کی درستی کے لیے استاد کو اپنا نمونہ پیش کرنا چاہیے۔ نہ صرف یہ کہ وہ خود صحیح تلفظ ادا کرے بلکہ اس مقصد کے لیے صحیح زبان بولنے والوں کو سنے، ان کے ساتھ گفتگو کرے اور معیاری لغت استعمال کرے۔ موقع کی مناسبت سے صحیح تلفظ اور ادائیگی کے ساتھ الفاظ بولے۔ چھوٹی جماعتوں میں بول چال کے لیے اپنا نمونہ پیش کرے۔ لہجے کا جو فقدان آج ہے شائد کبھی نا تھا۔ اس طرح بچوں کو زبان سیکھنے کے درپیش مسائل کا حل بھی نکالا جاسکتا ہے۔

جدید تدریسی طریقوں سے واقفیت استاد کے پیشہ ورانہ اخلاق کا حصہ ہے اس عمل کو زبان آموزی کہتے ہیں۔ ثانوی زبانوں کی تدریس کے بہت سے طریقے رائج رہے ہیں۔ ان طریقوں کے نقائص دور کر کے انھیں بہتر بنانے کی کوشش کی جائے۔ اس طرح کئی نئے طریقے بھی وجود میں آتے ہیں۔ ہر زبان کا اپنا ایک مزاج ہوتا ہے اور ہر زبان کے اپنے تدریسی مسائل ہوتے ہیں۔ تدریسی مسائل کو سمجھتے ہوئے عملی طریقوں کو برتنا استاد کی حاضر دماغی ہی نہیں ہنر بھی ہے۔ ہمارے اساتذہ کو زبان کی آموزش کے فنکشنل انداز اختیار کرنا ہوگا۔

سمعی بصری آلات یعنی ریڈیو، ٹیپ ریکارڈر اور ایسے صوتی آلات جو تدریسی اعانت کے طور پر استعمال ہوتے ہیں، سننا سکھانے میں بہترین اعانت ہیں۔ مختلف مضامین کے لیے ''رہنمائے اساتذہ'' بھی شایع ہوتے ہیں۔ اُردو کے سلسلے میں ان کا مطالعہ استاد کے لیے ضروری ہے۔ ان میں سمعی و بصری معاونات کے کئی طریقے بتائے جاتے ہیں۔

اردو زبان کا اثاثہ دیگر زبانوں کے الفاظ کا اس میں شامل ہونا ہے۔ عربی، فارسی اور اب انگریزی کے الفاظ اسے اردش بنا رہے ہیں۔ اردو میں انگریزی الفاظ کا آنا درست مگر افعال کی تبدیلی زبان کے حسن کو ماند کر دیتی ہے اس کا بھی خصوصاً خیال رکھنا اساتذہ کی ذمے داری ہے۔

میں اکیلا ہی چلا تھا جانب منزل مگر
لوگ ساتھ آتے گئے اور قافلہ بنتا گیا

WEB RESOURCES

Zaidi, N., & Malik, S. K. (2018). Effects of Integrated Lessons on Learning Urdu Language Skill of Students at Primary Level. *Global Social Sciences Review*, *3*(2), 81-98.

Amanulla, M. B. (2016). Teaching of Urdu: Problems and Prospects. In *Proceedings of International Multilingual Conference Ethiraj College for Women Chennai*.

Urdu Textbooks grades PCTB https://pctb.punjab.gov.pk/download_books

PC / B.Ed.-203	TEACHING OF GENERAL SCIENCE (PROFESSIONAL)	3

COURSE OBJECTIVES

The study of General Science in Primary and Secondary school is linked to National prosperity and economic development. The course is designed for the effective interactive ways of teaching science. The course will highlight the power of observation and inquisitiveness in general sciences studies. It will also focus on how to relate facts, concepts, and theories to every day experience.

SUGGESTED TEACHING APPROACHES

Throughout this course, pedagogy is interwoven with the content development. Faculty will model inquiry teaching to student teachers in order for them to experience firsthand the learning and teaching of science in an inquiry way. Thoughtful discussions will follow such hands-on experiences to clarify the applied methods and expected learning. These reflections are essential because it is through these discussions that prospective teachers will gain essential pedagogical content knowledge. They will also learn how to apply this knowledge to their science teaching in elementary grades upon graduation. Discussions, reflections, and application of pedagogical science content knowledge are critical components of Science I (and Science II). Each task prepares prospective teachers for their own teaching and enables them to modify activities to best meet the needs of their individual classrooms. For this reason, a substantial amount of time is dedicated to the "Teaching of Specific Science Content" in each unit of the course.

RECOMMENDED ASSESSMENT

Assignments and some take several weeks to complete. A mix of individual and group assignments is also provided. These assignments are designed to deepen students' learning and allow them to research and apply their knowledge to topics of personal interest. All the assignments count toward the final grade.

Assignments are similar to those conducted in Science I but are more complex and self-directed:

a) Conduct an investigation on a science topic, and present your findings and conclusions.
b) Develop an investigation around a core science concept for an elementary grade.
c) Write an editorial for a local newspaper on a relevant science topic stating an opinion supported by evidence.
d) Using the inquiry approach, plan and teach a science activity in a local elementary school.

COURSE CONTENT

Unit 01 Nature of Science

1.1 Definition of science
1.2 Science as a process: Scientific Method
1.3 Science as a product: Scientific Knowledge

Unit 02 Aims / Objectives Teaching General Sciences

2.1 History of Science Education
2.2 Aims / Objectives of teaching General Science at

Elementary level

Unit 03 Methods of Teaching General Science

3.1 Demonstration cum-lecture method
3.2 Discovery method
3.3 Project method
3.4 Other innovative method

Unit 04 Approaches of Teaching General Science

4.1 Teaching approach
a) Problem solving
b) Inquiry techniques
c) Exploration
d) Observation e) Experiment

4.2 Teaching Strategies
a) Scope & propose of practical activities
b) Science laboratory
c) Safety measure in laboratory

Unit 05 Teaching Aids

5.1 Need & importance of teaching aids
5.2 Types of teaching aids
5.3 Principles of using teaching aids
5.4 Using low cost teaching aids

Unit 06 Characteristics of effective Science Teaching

6.1 Characteristics of lesson planning
6.2 Characteristic qualities of science teacher
6.3 Effective questioning
Unit 07. Evaluation
7.1 Designing a test
7.2 Administering & scoring a test
7.3 Interpreting test results

SUGGESTED REFERENCES

1. Bell, P., Lewenstein, B., Shouse, A. W., & Feder, M. A. (2009). Learning science in informal environments: People, places, and pursuits (Vol. 140). Washington, DC: National Academies Press.
2. Duschl, R. A., Schweingruber, H. A., & Shouse, A. W. (Eds.). (2007). Taking science to school: Learning and teaching science in grades K-8 (Vol. 500). Washington, DC: National Academies Press.
3. Krajcik, J. S., Czerniak, C. M., Czerniak, C. L., & Berger, C. F. (2003). Teaching science in elementary and middle school classrooms: A project-based approach. McGraw-Hill Humanities, Social Sciences & World Languages.

4. Lawson, Anton. E. (1995). "*Science teaching and development of thinking*". California: Wadsworth publishing company
5. Harlen, W., & Qualter, A. (2018). The teaching of science in primary schools. David Fulton Publishers.
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7. Gish, D. T. (1995). *Teaching creation science in public schools*. Institute for Creation Research.
8. Davies, D., Howe, A., Collier, C., Digby, R., Earle, S., & McMahon, K. (2003). Teaching science, design and technology in the early years. David Fulton Publishers.
9. Hassard, J., & Dias, M. (2013). The art of teaching science: Inquiry and innovation in middle school and high school. Routledge.
10. Rehman Mehmooda (1999). "*Teaching of science and mathematics*". Peshawar: Ijaz printer, Pakistan

WEB RESOURCES

1. Bakioglu, B., Karamustafaoglu, O., Karamustafaoglu, S., & Yapici, S. (2018). The effects of out-of-school learning settings science activities on 5th graders' academic achievement. European journal of Educational Research, 7(3), 451-464.
2. Tal, T., & Dierking, L. D. (2014). Learning science in everyday life. Journal of Research in Science Teaching, 51(3), 251-259.
3. Zhai, J. (2015). Teaching science in out-of-school settings. New York: Springer, 10, 978-981.

INSTRUCTIONAL AND COMMUNICATION TECHNOLOGY (ICT) IN EDUCATION

COURSE CODE: PC / B.ED.-204
CREDIT HOURS: 2

COURSE OBJECTIVES

After completing this course, pre-service teachers/teachers will be able to:

1. develop a well-articulated perspective on information and communications technology in education informed by personal experience and critical examination of computer resources, curriculum, and educational practice.
2. model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning
3. engage students in exploring real-world issues and solving authentic problems using digital tools and resources
4. participate in local and global learning communities to explore creative applications of technology to improve student learning
5. promote student reflection using collaborative tools to reveal and clarify students' understanding and thinking, planning and creative processes
6. evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning
7. develop confidence, skill and an attitude to use a range of technologies (radio, video, computer, digital and online tools, digital accessories, etc.) for instruction and generating new knowledge for life-long learning

SUGGESTED TEACHING APPROACHES

Teachers-in-training and instructors should integrate this course with other courses and with their theses or projects; adapt the course to personal interest, knowledge, experience, and responsibility; and design assignments with sufficient depth and breadth to be useful in other courses and later work.

Trainees will combine the exploration of educational software and other ICT resources with the discussion of its application with a critical examination of educational issues that surface with computer and other ICTs use - issues such as empowerment, the shaping of modes of thinking, access, control, ownership, role of student and teacher, classroom and school organization, and professional development.

Throughout the course, electronic mail (email), Google applications, and other tools that support collaboration will be used to provide continuity of discourse, to increase the coherence of work, to share information, to discuss issues, and to articulate thoughts about ICTs in education.

Peer-teaching or peer-instruction would be used regularly as a learning strategy as the participants of this course specifically, are expected to benefit from it much more than lecturing or other strategies when it comes to using technologies. Other active-learning strategies such as discussions, pair and group work, etc. are suggested to be used rigorously throughout the course.

RESSOMMENDED ASSESSMENTS

The sessions are designed in a way that they use content to teach skills. The instructors would observe that the first half of most of the sessions in Unit-2 is about using content from different subjects. The second half focuses on analysis of how use of technology enhanced and/or supported teaching of skills by using particular content. It should be noted that none of these halves or session sections should be treated as 'optional'.

The course facilitators will model the use of ICTs to support professional interaction and learning. The prospective teachers need to be "immersed" in a technology-rich instruction experience and practice so as to progress on various levels of ICT integration in education.

Unit-1:

Introduction to ICTs, Policy and Other Guidelines for Use of ICTs in Education

(1 week / 2 hours)

Unit Overview

The first unit aims at providing prospective teachers an understanding of ICTs in Education and the driving forces - i.e., supporting policies and the need. The trainees will get an overview of National Education Policy for Pakistan and the National Professional Standards (NTSTP) for ICTs in Education. The trainees would discuss and analyze the objectives for integrating ICTs in Education to live, learn and work successfully.

Intended Learning Outcomes:

After going through this unit and the suggested assignments, the trainees would

- develop an initial understanding of different types and formats of technologies that can be used in education.
- discuss and analyze the way needed teaching and work skills keep changing with the demand of the day.

• compare the conventional teaching practices with technology- supplemented and enhanced instructional and learning opportunities	
	Introduction and Guidelines a. Introduction to the course – ICTs in Education b. Pre-assessment for the course c. 21st Century Skills – the need of the day d. What are ICTs? e. Benefits of ICT f. Highlights - National ICTs Strategy for Education in Pakistan, National Education Policy 2009
Week 2: (2 sessions/2 hours)	**ICTs Integration, Standards and Competencies for Teachers** a. ICTs Integration – Why and What it means, objectives. Misconceptions b. Bloom's digital taxonomy c. ICT competencies for Teachers d. Highlights - National Professional Standards (NTSTP) for ICTs in Education e. Introduction to electronic Portfolios for both students and teachers– setting up for the course. f. Tools for generating e-portfolios. • Google classroom • Google drive • Class dojo

	• Class tag

Unit 2:

ICTs Integrated into Curriculum and Instruction– (9 weeks / 18 hours)

Unit Overview

This unit provides extensive technology-rich and enhanced instruction experience to the prospective teachers by giving essential knowledge and allocating several hours of practice sessions on ICT applications, discussions, and analysis of situations how ICTs are exploited to maximize learning experiences and outcomes. With an understanding of these requirements and benefits of *multi-channel learning*, the prospective teachers could develop sufficient confidence and skills to design ICT-supplemented instruction, using alternatives as needed.

Training teachers how to implement technology-enhanced instruction can fail. One of the reasons is that teachers experience "Information Overload" very easily when it comes to technology, and they shut down. This unit breaks the 'tasks' into small "chunks" (sessions by technology) coupled with hands-on practice which is expected to lead to success!

Intended Learning Outcomes:

The trainees will:

- go through technology-rich experiences throughout all aspects of the training and understand ICTs-integration for a variety of content and pedagogical themes.
- develop an understanding of providing video-enhanced learning experiences to their students.
- practice utilizing technology effectively to enhance teaching through lesson-planning.
- analyze, experience, and get supported through peer-teaching.
- compare the conventional teaching practices with technology- supplemented and enhanced instructional and learning opportunities.
- develop a technology plan for practicum school and classroom after thorough analysis of situation

Week 3: (2 sessions/2 hours)	**Learning through custom-designed/ready-made applications** (available on DVDs/CDs – Story of Pakistan, tutorials, multimedia encyclopedias, etc.) a. for instructions and delivering online sessions following tools will be introduced • Google meet • Zoom meetings. • Google jam board and google slides for collaboration and communication with students. • Canva and poster my wall for creating soft boards, word Walls and Bulletin Boards. • Jam Board • Zoom Whiteboards • Sharing screen options with students • Digital pens b. Exploring the custom-designed multimedia resources • Google suite (google classroom, google drive, google form, google slides, google docs) is totally custom design. Teachers can use them according to students learning needs. c. Instruction using available applications for teaching of Pakistan Studies/History, Functional English, Methods of Teaching, etc.) d. Lesson planning and review e. Live worksheets.com f. Online worksheets
Week 4: (2 sessions/2 hours)	**Audio, Radio Broadcast, and Interactive Radio Instruction (IRI)** a. Power of audio/radio in education b. Using audio/radio/IRI resources for teaching of different subjects (Functional English, Pakistan Studies/Islamic Studies, Early Childhood Education, etc.) c. Case-studies for extended reading

Week 5: (2 sessions/2 hours)	**Video, animations, movies and television broadcast** (Examples for different content/subject and pedagogy areas - Child Development, Early Childhood Education, Communication, Geography, Science, etc.) • Using recorded-classroom videos (Examples for different subject and pedagogy areas - Child Development, Early Childhood Education etc.) • Using video prompts in classroom • Lesson Planning using video resources
Week 6: (2 sessions/2 hours)	**(Continued) Video, animations, movies, and television broadcast.** • Using movies in education • Using video commercials in education • Using split-video technique in classroom • Documentaries and discussions • Exploiting the potential of television broadcast in education • Case-studies for extended reading • Lesson Planning using video resources • Lesson Demo and Presentations
Week 7: (2 sessions/2 hours)	**Learning through Internet (applications, etc.)** (Examples for different content/subject and pedagogy areas – Teaching of Science, language-development, improving communication skills, etc.) a. Concept of globalization Global Teacher Community' b. Online tutorials c. Browsing for a purpose - Seeking and filtering information d. Online tools for communication and collaboration e. Introduction to Digital Libraries, archives, and eBook f. Cyber security and cyber bullying g. Global citizenship

Week 8: (2 sessions/2 hours)	**Learning through Internet** /Videos in Education – Revisited Interactive online software applications • Google earth • Gizmo simulations • PhET simulations • VR technologies Study: (The Khan Academy) • Educational websites • Educational games • YouTube videos
Week 9: **(2 sessions/2 hours)**	**Using Digital Camera in Education** Video creation tools • Vimeo • Pow toon. • Open shot editor (Examples for different content/subject and pedagogy areas - Methods of Teaching, Child Development, Classroom Management, Practicum, etc.) a. Power of Pictures/photographs b. Developing local content using digital camera c. 'Shoot and share' - Sharing experiences. d. Tools for behavior management • Class dojo • Google classroom • Seesaw • Class tag
Week 10: **(2 sessions/2 hours)**	**Interactive Games and Puzzles** a. Exploring resources and applications, subject-wise (language, Science, Mathematics, etc.) b. Digital Applications - From Toys to Learning Tools Trainees to design a storyboard of an educational game; design a puzzle online by using Google slides or PowerPoint. • kahoot • edpuzzle • online flashcards • online bingo games

	• online crosswords • online worksheets • online games • scratch • code.org **educational toys** • Legos powered with scratch. • Bee boat
Week 11: **(2 sessions/2 hours)**	**Planning for ICTs Integration** a) Planning for ICTs Integration (SWOT analysis, building support networks, etc.) b) Developing a Technology Plan for Classroom and School **c)** Barriers for effective ICT use in schools and suggestions

Unit-3:

Collaborative Learning using ICTs (2 weeks – 4 hours)

Unit Overview

ICTs has undoubtedly offered numerous practical advantages by allowing users to overcome restrictions of time and place, transcending barriers of textbooks and classroom walls, providing up-to-date resources for teachers and students, supporting a range of individual learning styles, providing authentic contexts for students, and broadening the curriculum. One of the most promising ways the Internet is being utilized in schools is to participate in global or collaborative Internet projects and assignments. These projects often involve students in using the Internet and WWW for research, publishing of Web pages and communication using chat and e-mail. These project-based learning contexts are motivating students and providing real life contexts for successful collaborative learning.

In this unit, students will experience working on collaborative projects and assignments. It is encouraged that trainees establish contacts with trainees from other institutions in and outside of the country – as, with technology, there are no boundaries to learning!

Week 12: (2 sessions/2 hours)	**Enhancing Opportunities for Collaborative Learning** a. Collaborative projects (using email, Google Docs/presentations, etc.) – folk tales/cultural stereotypes, learning about communities, and other iEARN projects) o Pakistan Studies o English/Urdu – Using email or Google Docs to write a collaborative "Rotating Story" (Project) o Civics, etc. b. Using Wikis and Blogs – an introduction c. Kids logs.

	d. Vlogs e. Power point presentations f. Virtual events g. Digital posters
Unit-4: **ICTs for Life-long Learning and Teacher Professional Development** (2 weeks – 4 hours)	
Unit Overview This unit will provide some orientation to the prospective-teachers and teacher educators about the need for continuous professional development specifically in this age of ever-changing circumstances – technologically, socially, culturally, and economically. This unit emphasizes the need of life-long-learning as opposed to learning in the initial part of professional life. Moreover, this unit focuses on supporting life-long-learning with ICTs. The prospective- teachers will learn to connect and 'connect' to learn!	
Week 13: (2 sessions/2 hours)	**ICTs for life-long learning and teacher professional development** a. Why life-long learning? b. Planning – an information resource (TL resources on WWW, Wikipedia, National curriculum, etc.) c. Learning content and methods d. ICT/Collaborative Tools for Teachers (Emails, discussion groups, chat, mailing lists, professional forum, padlet, jam board, flipgrid etc.) e. Teaching-learning and assessment tools (templates, lesson plans, worksheets, online tests-IELTS, quizze.com, MS Forms. Google forms, kahoot, quiz let, edpuzzle, live worksheets, google slides, jam board, Nearpod, Zoom Breakout Rooms. f. Video/teleconferencing (Skype) g. eLearning and Blended Learning (Introduction)

Week 14	Continued - ICTs for life-long learning and teacher. professional development

Unit-5:

Evaluating ICT Tools and Resources for Use (1 week - 2 hours)

Unit Overview

This unit emphasizes the purposeful and judicious selection of digital resources. As a teacher would consider different factors while referencing a book, same is the case with using and referencing any ICT resource, be it a website, a video clip, radio program or an online puzzle.

Prospective teachers will evaluate resources based on several factors (purposefulness, need, time, cost, presentation quality, instructional value-addition, usability, context, etc.). Due to time constraints, the types of evaluation for technology interventions in education (like IRI programs, interactive video, etc.) is not covered in this unit (for example, formative and summative evaluation, integrative evaluation, etc.)

Week 15	**Evaluating ICT tools and resources (1 week - 2 hours)** **a.** Making decisions on identifying ICT resources: Assessing quality and usability of ICT resources with the help of rubrics b. Assessing quality of websites and other Internet applications, educational games, etc. (Gathering and analyzing information)
Week 16	**a**. Review b. Post-assessment

Course Extension Ideas

- Emerging trends (Virtual schools, Online Universities, E-tutoring, etc.)
- Assistive Technologies e.g., speech to text, read aloud, electronic boards, immersive reader, etc. (Case Study – Pakistan Foundation for Blinds, Technologies to assist Special Education)
- Technologies in other domains of education - Life Skills, health education, vocational training, preparing-for-work,etc.)
- Professional Associations online
- Digital Libraries e.g., Zendy, epic, The International Children's Digital Library
- Using Wikis and Blogs
- Tools and applications to support distance education.
- (Moodle, Whiteboards, Illuminate, etc.)
- Cell phones in education
- Concept-mapping (Mind Map)
- ELMS
- MS Teams
- Google suite
- Zoom meeting.

- Go webinar.
- Edmodo
- Edu Clipper
- Story bird
- Seesaw
- Class dojo
- Deck. Toys: This platform helps teachers create and share online lessons using their easy tools. The ability to offer differentiated paths within the same lesson is a nice feature. (Note: Requires teachers and students to have Google or Microsoft accounts.)
- Study bee: A grading and student feedback system that extends Google Classroom functionality

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3. Hernandez, R. M. (2017). Impact of ICT on Education: Challenges and Perspectives. *Journal of Educational Psychology-Propositos y Representaciones*, *5*(1), 337-347.
4. Mbodila[1], M., Jones, T., & Muhandji, K. (2013). Integration of ICT in education: Key challenges.

TP/ B.Ed.-201	TEACHING PRACTICE (SHORT TERM)	3

COURSE OBJECTIVES

Student Teachers will be able to:

1. Reflect on and learn from connecting theory and their teaching practice.
2. Collaborate with peers, Cooperating Teacher, other School Staff, and College/University Supervisor, establishing professional relationships.
3. Invite, accept, and utilize formative feedback from the Cooperating Teaching peers, and the College/University Supervisor in a non-defensive manner.
4. Produce instructional plans unit plans, which reflect the use of appropriate instructional methods and strategies to meet the needs of all students within the context of the practicum classroom.
5. Utilize appropriate instruments or techniques for informally and formally assessing student learning and learning needs.

 Recognize cognitive and affective needs of students and establish learning environments and use activities appropriate to meeting those needs.

SUGGESTED TEACHING APPROACHES

Every Student Teacher enrolled in the developmental practicum will be assigned to two different classrooms for this school placement experience, approximately half at early and the other half at upper elementary level. This will mean that by the end of the ADE (first two years of the B.Ed. Honors) Student Teachers will have experienced teaching in two different classrooms during the developmental practicum in Semester 3.

The Practicum Seminar will provide opportunities for structured and guided discussion, but rely heavily on reflective journals, small group and peer interaction.

RECOMMENDED ASSESSMENT

Every Student Teacher enrolled in the developmental practicum will be assigned to two different classrooms for this school placement experience, approximately half at early and the other half at upper elementary level. This will mean that by the end of the ADE (first two years of the B.Ed. Honors) Student Teachers will have experienced teaching in two different classrooms during the developmental practicum in Semester 3.

The Practicum Seminar will provide opportunities for structured and guided discussion, but rely heavily on reflective journals, small group and peer interaction.

COURSE CONTENT

Introduction to the school and classroom context:

- Complete School-based assignments which provide you with an opportunity to get to know the school, its resources, the rules, and procedures expected of you;
- Complete Classroom Observations which will provide you with an opportunity to learn about:
    - The classroom environment, placement of materials, arrangement of work spaces, traffic patterns;

- Classroom interactions, e.g. whole class teaching, teacher to student, student to student, student to teacher initiated interactions; o Assist the Cooperating Teacher as requested with any tasks such as:
- Small administrative tasks
- Helping individual children or small groups of children
- Meet with the Cooperating Teacher to discuss how he/she plans for instruction, expectations and the like

 Reflect on your learning this week.

Becoming more involved in the classroom:

- Complete school based assignments which will provide you with tools to use to learn to know more about:
  - Your Cooperating Teacher and his/her educational philosophy; o A small group of children or an individual child. - Complete classroom observations:
  - Small group engagement; o Individual child engagement.
- Assist the Cooperating Teacher as requested:
  - Work with children who need extra help; o Work with a small group of children to carry out the teacher's plans; o Meet with the Cooperating Teacher to discuss plans for teaching. - Reflect on your learning this week.

Taking an active role in co-planning and co-teaching sections of a lesson alongside your Cooperating Teacher:

- Complete school based assignments:
  - Learn about how your Cooperating Teacher manages their classroom; o Learn to know more about the community (parents and other community members) involvement in the school.
- Complete classroom observations:
  - Observe your Cooperating Teacher with the aim to rewrite the lesson plan adding ideas of your own;
  - Use one of the additional observation tools to understand how your Cooperating Teacher engages with the children.
- Assist the Cooperating Teacher as requested:
  - Continue with all the previous tasks in the classroom; o Work with your Cooperating Teacher to co-plan a few lessons; o Take over routines such as taking children for recess, taking the register, or reading a story to the class
  - Co-teach a few sections of classes with your Cooperating Teacher. - Reflect on your learning this week

Assuming responsibility for co-planning and co-teaching many in as many classes as you can.

- Complete school based assignments:
  - Learn to know more about the co-curricular activities available at your school, and specifically those that the children in your classroom do.
- Complete classroom observations:
  - Use an additional observation tool to learn how your Cooperating Teacher manages the classroom through movement;

    - Use an observation tool to learn how to keep track of student engagement by focusing on their on/off task behaviour.
- Assist the Cooperating Teacher as requested:
    - Continue with all the previous tasks in the classroom; o Co-teach a few lessons with your Cooperating Teacher.
    - Work with children who need extra help
    - Meet with the Cooperating Teacher to discuss plans for teaching whole lessons next week.
- Reflect on your learning this week

Assuming responsibility for planning, teaching and assessing in at least one subject.

- Complete school based assignments:
    - Complete any school based assignments that might be outstanding; o Use this time to start to file all assignments from the seminar and the school experience in your Developmental Portfolio, using your Notes for Self Assessment sheet to indicate how you believe you are meeting the NPSTP.
- Complete classroom observations:
    - Use the additional observation tools to observe how involved children are in the classroom, in terms of their verbal engagement.
    - Develop your own observation tool to collect data on how engaged children are. - Assist the Cooperating Teacher as requested:
    - Plan and teach lesson in at least ONE subject area this week.
    - Continue activities above, taking over responsibility for planning, teaching and assessing for one subject area..
- Reflect on your learning this week

Assuming responsibility for planning, teaching, and any additional responsibilities as negotiated with the Cooperating Teacher and College Supervisor.

- Complete school based assignments:
    - Continue to make notes about how you are meeting the NPSTP on your Note Sheet.
- Complete classroom observations:
    - If you are challenged by any particular aspect of teaching this week, complete an additional observation – using the same tool – to learn more about teaching and learning.
- Assist the Cooperating Teacher as requested:
    - Plan and teach lesson in at least TWO subject areas this week.
    - Continue activities above, taking over responsibility for planning, teaching and - Reflect on your learning this week

Second Classroom Placement
The Practicum Seminar

The seminar runs parallel to your experience at school. The content of the seminar will vary with the Instructor every semester that it is offered.

However, students may expect to discuss issues such as:

- Practical issues of teaching in learning in their field placements,
- Language learning,
- Different perspectives on how to organize and manage a classroom,
- Planning units of instruction,
- Content-specific instruction,
- Selecting and using assessments of learning,
- How to use standards for primary school teaching practice,
- Identifying the hidden curriculum in the classroom,
- Creating classroom environments that recognize physical, emotional, affective, social and intellectual needs of children,
- Non-instructional roles of the teacher,
- Working with parents and community
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SUGGESTED REFERENCES

Course readings and assignments will focus primarily on preparation for field assignments. Additional assignments and/or readings will be provided throughout the semester.

1. Louis Cohen, Lawrence Manion-A guide to teaching practice -RoutledgeFalmer (2004)
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3. Practicum Handbook Semester 3 (Student Teacher) English
4. Practicum Handbook Semester 3 (Supervisor) English
5. Practicum Handbook Semester 3(Cooperating Teacher) - Urdu
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SEMESTER IV

Course code	COURSES	credit hrs
FC/ B.Ed.-201	Classroom Assessment (Foundation)	3
FC/ B.Ed.-202	School, Community and Teacher (Foundation)	2+1
PC /B.Ed.- 205	Teaching of English (Professional)	3
PC/ B.Ed.-206	Teaching of Mathematics(Professional)	3
PC / B.Ed.-207	Teaching of Social Studies (Professional)	3
TP/ B.Ed.- 202	Teaching Practice	3
	Total Credit Hours	18

FC/ B.Ed.-201	CLASSROOM ASSESSMENT (FOUNDATION)	3

COURSE OBJECTIVES

After completing this course, you will be able to:

1. explain and defend the claim that professional judgment is the essence of classroom assessment
2. explain error in assessment, identify potential sources of error, and describe how teachers can compensate for error in assessment
3. create classroom scenarios that illustrate links between instruction, assessment, and learning.
4. explain the difference between formative and summative assessments
5. list the characteristics of constructive written feedback accompanied by an example produced by you on an elementary school student's achievement test
6. explain why the data obtained from an assessment always has to be interpreted and shared with relevant stakeholders

SUGGESTED TEACHING APPROACHES

This course introduces prospective elementary school teachers to two complex practices that characterize effective teaching: 1) constructing a test, using it, scoring it, interpreting the scores, and providing feedback to students: and 2) integrating assessment into lesson plans through establishing criteria for judging if learning objectives have been attained and selecting appropriate assessment tools.

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RECOMMENDED ASSESSMENT

Notions of Assessments are learned through practice, coaching, feedback and reflection in a classroom. Since these are complex teaching practices, rather than expecting you, the student teacher, to practice the finished act you will practice component parts which can be integrated as you achieve proficiency. You will have models to guide you and access to cued practice. Most of this practice can take place in college and university classrooms with peers providing feedback to each other. The learning framework for the course is guided practice and reflection. You will work in pairs and small groups. Class discussions will aim at identifying indicators of quality in the work done by you and your colleagues

Course Content

UNIT 1: INTRODUCTION TO CLASSROOM ASSESSMENT: CONCEPTS AND CONTEXT

Overview of course and ideas

- Overview of course
- Revisit Assessment practices in schools in Pakistan
- Personal experience with tests in school
- The distinction between assessment *of* learning and assessment *for* learning
- Review of research on the positive effects of continuous assessment
- Possible causes of those effects: motivation; feelings toward self; improved instruction

Review of research on the effects of a teacher's feedback on learning

Assessment concepts and underpinnings

- Curriculum: goals, objectives, standards, targets
- Pakistan National Curriculum (2006-2007): standards, benchmarks, learning outcomes

- Formative and summative Assessments
- Distinguishing between the two through real examples
    - Assessments concepts: The relationship between reliability and validity

Cultures of testing and assessment

- Shift from a culture of testing in schools to a culture of assessment
    - Assessment practices and policies in elementary schools in Pakistan
- How might the culture of classrooms change if formative assessment becomes a routine part of instruction? How might the roles of teachers and learners change? Might this pose challenges?

UNIT 2: ASSESSMENT IS THE BRIDGE BETWEEN TEACHING AND LEARNING

Constructing the Unit upon which the test will be based

- Study the subject textbooks to select the unit and determine the subject and topic for your unit with partner(s)
- Outline the content for your unit with your partner(s)
- Check your content outline with the National Curriculum content for your subject, topic and grade level

- Write the first lesson for your unit with your partners

- Groups exchange their unit , read each other's lessons and give feedback

- Write lessons 2 and 3 for your unit.

Principles and rules for writing Selected-Response and Constructed-Response objective test questions

- Study directions for and practice writing short answer and completion questions for your test(for the lessons that you have constructed)

- Study directions for and practice writing true-false, alternate-choice and matching questions for your test(for the lessons that you have constructed)

- Study directions for and practice writing multiple choice items for your test(for the lessons that you have constructed)

Assembling your test

- Writing and constructing answers to sentence completion and short answer questions

- Writing and constructing answers to true-false, alternate-choice and matching questions

- Writing and constructing answers to multiple questions
- Writing directions for the test

Assembling your test

- Building a Table of Specifications I

- Finishing a Table of Specifications II

Checking for balance in the coverage of learning objectives
- Determining the length of the test

Essays - One way to assess complex learning and achievement
- Forms and uses of essay questions
- Restricted-Response essay questions
- Extended-Response essay questions
- Scoring rubrics for Restricted and Extended-Response essays

Advantages and limitations of essays
- Suggestions for constructing essays

Making sense of the test items

By now you and you and your partner(s) will have gained enough experience on how to write a good test and connect it with SLO's. You can now analyze the type of test items that you see in textbooks for the same unit or a teacher made test.
- Item analysis of the test.
- Report on the results of the item analysis
- Decide which items to eliminate/improve.

- Research on students' reactions to the kinds of tests that they are given by the teachers as a means of feedback on tests items .

UNIT 3: INTEGRATING AND SHARING ASSESSMENT RESULTS

Characteristics of effective and ineffective feedback
- What is feedback?
- What are some ways in which teachers provide conscious and unconscious feedback to students? How might these affect learning?
- Conclusions from research on feedback in the classroom
- Characteristics of effective feedback
- Consequences for students from effective feedback on assessments

- Examples of effective feedback
- Characteristics of ineffective feedback
- Examples of ineffective feedback
- Guidelines for writing effective feedback
- Ways to avoid ineffective feedback statements
- The role of feedback in increasing students' learning and confidence

- Sharing assessment results with others

- How might you provide feedback to a parent in a way that facilitates the environment of teaching and learning at home
- Develop a mock parent teacher conference, keeping cultural considerations in mind.
- Role-play various parent teacher conference scenarios

Develop a mock teacher student session following points to be considered

- Sharing assessment results with students
- Integrate test performance with classroom performance.
- Develop some feedback statements that you would give students on their assignments

Practice - Feedback to students and assessment results to parents

- Half the class presents their feedback.
- Members of the class critique the feedback presentations

- The other half of the class presents their feedback.
- Members of the class critique the feedback presentations
- Feedback Framework: Medal, Mission and Goals
- review the feedback received in different courses against this framework

UNIT 4: THE ARRAY OF AVAILABLE ASSESSMENT TASKS

Informal Performance Assessment □

Anecdotes in teacher journals.

- Homework
- Written work produced in class
- Informal behavioral observation with check lists and rating scales □ Class discussions.
- Academic Tasks (Running Oral Reading Records, for example)

Restricted and Extended Performance Assessment

- Essays, Experiments, Projects, Demonstrations, Performances
- The Best Apple: an example of a Restricted Performance Assessment
- The Green Bean Race: an example of an Extended Performance
- Rubrics
- Learning objectives for Performance Assessments
- Strengths and weaknesses of Performance Assessments

Portfolios

- Purpose of Portfolio Assessment
- Supply content
- Evaluation of Structure

- Evaluation of Content
- Illustrations of Portfolio Assessment: Your Semester 3 Student Teaching Portfolio

Review

- You know more about assessment now than you knew 15 weeks ago when you had the discussion about a shift from a culture of testing in schools to a culture of assessment. Go back to that discussion now. Do you believe such a cultural shift can take place in classrooms in Pakistan? How?
- Though the topic was not covered in this course, there is some evidence that students earn higher scores on a test if they write test questions and answer them before taking the test prepared by the teacher. This is a good course in which to try this out. See if you can devise an assessment task for the course that you are taking and share it with your professor.
-

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Darling-Hammond, L., & Snyder, J. (2000). Authentic assessment of teaching in context. *Teaching and teacher education*, *16*(5-6), 523-545.

PC /B.Ed.-205	TEACHING OF ENGLISH (PROFESSIONAL)	3

COURSE OBJECTIVES

On completing the course, student teachers are expected to:

1. have gained a basic understanding of how second/foreign languages are acquired and possess a working knowledge of the following methods/approaches to Second Language Acquisition: grammar-translation, audio-lingualism, the natural approach, communicative language teaching.
2. be able to teach the four skills of listening, reading, speaking and writing to young learners using an interactive communicative approach.
3. be able to design suitable teaching materials which focus on helping learners acquire a basic level of communicative competence.
4. be able to assess their students' language performance and progress using their own self-designed assessment procedures.
5. know how to help learners develop basic grammatical competence and vocabulary knowledge in English using a learner-centered communicative teaching approach.
6. f. be aware of the differences between teaching and testing when they are designing their own classroom materials and activities.

SUGGESTED TEACHING APPROACHES

Active lecturing

An active lecture is not very different from any good lecture, but it attempts to involve listeners directly. There is no single best way to give an active lecture, but it includes the following suggestions.

Ambassadors
Brainstorming
Gallery Walk
KWL charts
Group work
Pair Share
SWOT analysis
Poster Session etc

RECOMMENDED ASSESSMENT

The Four Main Focus Areas of Pedagogy

Designing language assessment techniques through task-oriented activities

Cloze tests

- Multiple-choice questions about verbs
- Word completion
- Spellings
- Phoneme and morpheme recognition
- Yes-no
- True-false

Presentations

COURSE CONTENT

Unit One: Introduction to Second Language Acquisition

- Introduction to the Course *Teaching English*
- Introduction to Unit One and Initial Activity: Exploring course participants' views of how languages are learned.
- What do people need to know to speak a foreign language well?
- Four influential ESL approaches
- The Grammar-Translation method and its limitations
- Behaviourism and the Audio-Lingual Method
- The Natural Approach The Interactionist Approach
- Practical teaching activities using the Interactionist Approach
- Criticism of the Interactionist Approach
- A quiz to review the four approaches to SLA
- Implications of the Post-Methods Era
- Factors Affecting Second Language Learning: Investigating learner differences and learning styles

What is Communicative Language Teaching (CLT)?

Unit Two: Receptive Skills (Listening & Reading)

What are listening skills?

Listening as a skill: some listening theories How do children learn to listen?

- Some suggestions for classroom listening What does real-life listening involve?
- Extensive and Intensive Listening
- Techniques and Activities for Teaching Listening Skills communicatively in the classroom
- Pre-Listening, While-Listening, and Post-Listening activities
- Designing effective listening materials and activities for the language classroom
- Practical microteaching of listening skills in the classroom
- What is reading?
- What is the purpose of reading inside and outside the classroom?
- The power of reading
- Reading comprehension skills
    - Some suggestions for reading activities Factors affecting learning to read in a second language
    - The role of the teacher in extensive and intensive reading
- Techniques and activities for teaching reading communicatively
- Pre-Reading, While-Reading, and Post-Reading activities
- Designing and developing effective reading activities for the language classroom
- Practical microteaching of reading skills in the classroom

Unit Three: Productive Skills - Speaking and Writing

- What are Speaking Skills?
- Helping learners to improve their pronunciation through the use of simple exercises and tasks
    - How to introduce learners to the sound system of English – Use of varied drills Ways of helping learners to improve their pronunciation through practical classroom exercises (jazz chants, songs, rhymes, etc.)

- Teaching Basic Communication Strategies – relating functions to appropriate language forms
- Experiencing, Designing and Evaluating Speaking Activities for the
- Communicative Language Classroom I o Using songs to encourage speaking o Asking and Answering simple questions o A discussion game 'Shipwrecked'

Experiencing, Designing and Evaluating Speaking Activities for the

- Communicative Language Classroom II o Using pictures in a speaking exercise o Using a story for acting and developing speaking

Assessing CLT activities – a questionnaire
Practical microteaching of speaking skills in the classroom and evaluation
Key concepts in teaching second language writing : controlled writing, guided writing, genre-based writing, the product approach, the process approach
Types of writing tasks that have been used effectively in Communicative Language Teaching
Practical CLT Writing activities such as describing a view, writing about a personal experience, writing a dialogue between two friends, etc.
How to help students by giving them language scaffolding Giving useful feedback to learners on their writing.
Designing writing materials and activities for the language classroom
Practical microteaching of writing skills by groups in the classroom and evaluation of the presentations

Unit Four: Teaching Grammar Communicatively

- A review of basic concepts in grammar: tense, subject-verb agreement, formation of interrogative and negative verb forms, SVO word order, simple/compound/complex sentences.
- Student teachers work through practical exercises and activities in the above areas to ensure that they have a clear understanding of the appropriate grammatical forms required for the structures outlined above. The course facilitator gives student teachers some tips on how to edit their work for errors.
- The place of grammar teaching in the second language acquisition process; evaluating different approaches to grammar teaching taken by course book writers
- Micro-teaching by student teachers in groups of the activities they have prepared and evaluation of these activities by the class.

Unit Five: Teaching Vocabulary Effectively

- Function words vs. lexical words
- High frequency vs. low frequency words
- Discussion of which English words young learners will need to know to be able to speak and write at a basic level. How should these items be presented to the learners?
- Student teachers do web searches to choose 50 words they would like to teach to their students. Discussion in class on how and why the 50 words were selected.
- Making vocabulary a useful part of a language course – when and how should vocabulary be taught to English learners?

Unit Six: Assessing Language Performance

- Designing Language Tests for Young Learners
- Some basic principles and key concepts in assessment Basic principles for assessing children's language learning Why do we test students?

- Tips and special considerations for Testing Young Learners
- Conflicts between classroom learning and classroom testing and ways of reducing these conflicts
- Ways of Marking Language Tests and Giving Feedback
- Samples of test types that can be used to test young learners
- In groups, student teachers prepare their own materials for testing one of the four skills for a 15-minute presentation
- Micro-teaching in groups and evaluation of the testing materials by the class

SUGGESTED REFERENCE BOOKS

1. Cameron, L. (2001) *Teaching Languages to Young Learners*. Cambridge: CUP.
2. Fanselow, J. (1987) *Breaking Rules*. New York: Longman.
3. Goh, C.M. (2007) *Teaching Speaking in the Language Classroom*. Singapore: SEAMEO-RELC.
4. Harmer, J. (2001) *The Practice of English Language Teaching*. Harlow: Pearson Educational.
5. Hughes, A. (2003) *Testing for Language Teachers*. Cambridge: CUP.
6. Hyland, K. (2003) *Second Language Writing*. Cambridge: CUP.
7. Lightbown, P. and N. Spada (1999). *How Languages are Learned*. Oxford: OUP.
8. Nation, P. (2002) *Managing Vocabulary Learning*. Singapore: SEAMEO-RELC.
9. Phillips, S. (1993) *Young Learners*. Oxford: OUP.
10. Richards, J.C. (2001) *Curriculum Development in Language Teaching*. Cambridge:CUP.
11. Richards, J.C. (2005) *Communicative Language Teaching Today*. Singapore: RELC.
12. Swan, M. (2005) *Practical English Usage*. Oxford: OUP.
13. Thornbury, S. (2005) *Grammar*. Oxford: OUP
14. Ur, P. (1996) *A Course in Language Teaching*. Cambridge: CUP.

WEB RESOURCES

Fennelly, M., & Luxton, R. (2011). Are they ready? On the verge of compulsory English, elementary school teachers lack confidence. *The Language Teacher*, *35*(2), 19-24.

Awan, A. G., & Nawaz, A. (2015). Comparison of GTM and Direct Method of teaching English at Elementary level in Pakistan. *Global Journal of Management and Social Sciences*, *1*(1), 17-30.

Nawab, A. (2012). Is it the way to teach language the way we teach language? English language teaching in rural Pakistan. *Academic research international*, *2*(2), 696.

PC/ B.Ed.-206	TEACHING OF MATHEMATICS (PROFESSIONAL)	3

COURSE OBJECTIVES

Students will:

1. Deepen their understanding of key mathematical concepts in Pakistan's 1-8 National Mathematics Curriculum.
2. Identify and assess areas of youngster's understanding and misconception to inform their teaching practices.
3. Acquire the pedagogical skills and competencies required to teach Pakistan's 1-8 National Mathematics Curriculum.

Describe the nature, history, and development of grade 1-8 mathematics education both in Pakistan and internationally.

SUGGESTED TEACHING APPROACHES

Use the course outline as a journal prompt, having Student Teachers choose one or two items from each column that they felt were important in their own learning. Have them write about these and then, given the time remaining, either share in their small groups, engage in a whole-class discussion, or postpone the discussion until Week 15. However, before they leave class, be sure to take a poll of the items they thought were important to their own learning so that you can use the poll as a formative assessment about student needs, which can inform your future teaching.

Metacognitive logs

RECOMMENDED ASSESSMENT

Group projects • Journals • Games • Puzzles • Oral presentations • PowerPoint presentations • Posters • Drawings and diagrams • Music and rhythm • Physical and kinesthetic activities • Exhibitions • Portfolios of best work • Portfolios showing progress • Collections of relevant websites • Statistical reports • Research reports • Observational reports • Working with manipulatives • Constructions • Multiple representations • Writing word problems • Writing and putting on a play

Have Student Teachers complete the 'Mathematical Reflections: My Mathematics' self-assessment, which is intended to alert you to content issues that may surface during this course.

COURSE CONTENT

Unit 1 Anticipated Student Misconceptions

- Emergent
    - Mathematical Thinking
- The Value of Student Errors

Unit 2 Learning Mathematics with Manipulatives & Visual Aids

- Mathematical Problem Solving Strategies
- Mathematical Discourse: Learning by Talking
- Seeing Connections between Units of the National Curriculum

Unit 3 Cognitive Demand of Mathematical Tasks

- The Balance Between Concepts & Skills, The Role of Drill &
- Practice
- Multiple Representations for a Single Mathematical Idea

- Mathematical Learning Styles and Modalities, Mathematics & Multiple Intelligence Theory
- Learning Mathematics by Writing
- Precision in Mathematical

Unit 4 Learning Mathematics with Available Technology

● Introduction and/or Review of Seminal Thinkers in Mathematics & Mathematics Education
  - Introduction and/or Review of Seminal Islamic Thinkers in Mathematics & Mathematics Education

SUGGESTED REFERENCE BOOKS:

1. Stodolsky, S. S. (1988). The subject matters: Classroom activity in math and social studies. University of Chicago Press.
2. *Mathematics for Elementary School Teachers*, by Tom Basserear, published by Brooks Cole.
3. *Elementary and Middle School Mathematics: Teaching Developmentally*, by John A. Van de Walle, Karen Karp, and Jennifer Bay-Williams, published by Pearson Education.
4. *Mathematics Explained for Primary Teachers*, by Derek Haylock, published by SAGE Publications.
5. Whitin, P., & Whitin, D. J. (2000). *Math Is Language Too: Talking and Writing in the Mathematics Classroom*. National Council of Teachers of English, 1111 W. Kenyon Road, Urbana, IL 61801-1096
6. Muschla, G. R., & Muschla, J. A. (2010). *Hands-On Math Projects with Real-Life Applications, Grades 3-5* (Vol. 30). John Wiley & Sons.
7. Stone, J. (2006). *Hands-on Math: Manipulative Math for Young Children*. Good Year Books.
8. James, C. (2015). *The Garden Classroom: Hands-on Activities in Math, Science, Literacy, and Art*. Shambhala Publications.
9. Alvarado, A. E., & Herr, P. R. (2003). *Inquiry-Based Learning Using Everyday Objects: Hands-On Instructional Strategies That Promote Active Learning in Grades 3-8*. Corwin Press, Inc., A Sage Publications Company, 2455 Teller Road, Thousand Oaks, CA 91320-2218 (hardbound: ISBN-0-7619-4679-9, $61.95; paperbound: ISBN-0-7619-4680-2, $27.95).
10. Overholt, J. L., & Kincheloe, L. (2010). *Math Wise! Over 100 Hands-On Activities that Promote Real Math Understanding, Grades K-8*. John Wiley & Sons.

WEB RESOURCES

1. Mathematics Books https://pctb.punjab.gov.pk/download_books
2. NCTM *Illuminations*: http://illuminations.nctm.org/
3. New Zealand's Maths Currriculum: http://nzmaths.co.nz/
4. UK's N-Rich Maths site: http://nrich.maths.org/public/

5. *How Students Learn: History, Mathematics, and Science in the Classroom* www.nap.edu/catalog.php?record_id=10126#toc Published by National Academies Press.
6. *What does Good Mathematics Instruction Look Like?:* http://www.naesp.org/resources/2/Principal/2007/S-Op51.pdf
7. Thuneberg, H., Salmi, H., & Fenyvesi, K. (2017). Hands-on math and art exhibition promoting science attitudes and educational plans. *Education Research International*, *2017*.

PC / B.Ed.-202	SCHOOL, COMMUNITY AND TEACHER (FOUNDATION)	2+1

COURSE OBJECTIVES

Prospective teachers will be able to:

1. Analyze and describe relationships between teachers, the school and the families and community that support the school.
2. Identify how the teacher's role is influenced by social and cultural factors that affect education in schools and their communities.
3. Recognize and value diverse cultural, traditional and religious values and learning needs of their students in school as well as in their community.
4. List the social factors affecting education and how it can support the development of education in the country in general and community in particular.
5. • Explain his/her role as a role model for their students in school and in the community in general.

SUGGESTED TEACHING APPROACHES

Teaching and learning in this course are based on the principles of reflective practice, participatory process, and critical analysis. Short introductory presentations will be made by the instructor and/or invited guests, but much of the class time will be spent in discussion and group activities, including role play and presentations, aimed at consolidating understanding and exploring issues in more depth.

Student Teachers will be provided a course reading pack and will be directed to certain readings including online materials. As ready-made material on topics relevant to the course context (e.g. Pakistani schools and communities) may not be presently available, Student Teachers will also be expected to generate their own readings to share with others. As all Student Teachers will come to this course having attended secondary school, they will be expected to reflect on their own experiences, especially their roles and relationships as students. Against this familiar backdrop of student life, Student Teachers will be expected to explore their unfamiliar role as a teacher in both social and professional contexts.

RECOMMENDED ASSESSMENT

Multiple forms of assessment will be used in the course. Many of these may be new to Student Teachers. By using multiple forms of assessment, the Instructor will be able to gain many insights on the knowledge, skills, and dispositions of Student Teachers. In general, you will find suggestions for assessment included with each unit.

Plan for regular formative assessments (assessments for learning) and summative assessments (assessments of learning).

Student Teachers should know at the start of the course which assignments or tasks will be part of summative assessment and how they will be assessed. Some examples are

Short quizzes

• Minute papers: Ask Student Teachers to take one minute to write about what they are learning in class.

• Projects: Projects may be completed in class or as out-of-class assignments. These could include a school study, an essay, a presentation, a survey and report, or a report and reflection on a School Management Committee (SMC) meeting.

• Observing and recording: Keep a log in a small notebook.

COURSE CONTENT

Unit 1: Society, Community and Education

- Introduction and overview of the course
- Introduction of society, community and education
- Structures and Functions of community and schools in Pakistan
- Impact of education on Society
- Role of education in strengthening Pakistani communities
- Review of Unit 1

Unit 2: Understanding Social Interaction in Schools and Communities

- Meaning of Social Interaction and socialization
- Levels of social interaction
- Elements of social interaction

o Social contacts

- o Communication
- Social attitudes and values
- Types of social Interaction

o Cooperation
o Competition
o Conflict
o Accommodation
o Assimilation

- o Meaning/types of social Groups
- o Individual / group behavior
- o Role of school and teacher in developing Social Interaction for peace, harmony and tolerance in Pakistani communities.
- o Review of Unit 2

Unit 3: School and Culture

- o Main characteristics of culture
- o Elementary concepts of culture o Cultural trait o Cultural complex o Cultural pattern o Cultural lag
- o Cultural diversity
- o Culture and cultural elements of Pakistani communities
- o Role of education and school in protection and transmission of culture
- Impact of media on school and culture
- o Impact of technology on school and culture
- o Impact of media on school and culture
- o Impact of technology on school and culture
- o Review of Unit 3

Unit 4: Relationships between School and Community

- School as a social, cultural and Community Institution

o Effects of school on communities
o Effects of communities on school

- o School as a hub for community services
- o A critical analysis of effective role of school and teachers in Pakistani communities
- o Review of Unit 4

Unit 5: Social Institutions

- Definition and Types of social institutions
- The family
- Educational Institutions
- Religious institutions
- Critical analysis of the role of Social Institutions in Pakistani school.
- Review of Unit 5

Unit 6: Teacher's Role in School and Community

- Teacher as an integral part of community
- Teacher as a change agent in
- Community o School o
- Teacher as role models through their participation in community activities
- Effects of teachers and schools on individual and group behavior
- Review of Unit 6

Unit 7: Working Context of Pakistani Teacher

- Teacher as a social activist
- Teacher's leadership roles within and outside schools
- Teacher's role in establishing linkage among stakeholders.
- Review of Unit 7

Unit 8: Practical Experience

- The concluding unit will be a practical task in the community or other field experiences as assigned by the course instructor.

SUGGESTED REFERENCE BOOKS

There is no standard textbook for this course. The books listed below should be treated as 'suggested' readings that can provide support material for both students and the Instructor. Chapters will be assigned chapters when deemed appropriate.

1. Marshall, L & Rowland, F. (2006). *A guide to learning independently*, 4th edn, Pearson Longman, French Forest, NSW.
2. Kotley, S.B, (2008*). The Basics of Sociology*, Greenwood Press: USA
3. Bashiruddin, A.& Retallick, J, (eds), (2009). *Becoming Teacher Educators*, Aga Khan UniversityInstitute of Educational Development: Karachi
4. Kimonen, E., & Nevalainen, R. (Eds.). (2014). *Transforming Teachers' Work Globally: In Search of a Better Way for Schools and Their Communities*. Springer Science & Business Media.
5. Noel, J. (Ed.). (2013). Moving teacher education into urban schools and communities: Prioritizing community strengths. Routledge.
6. Merz, C., & Furman, G. (1997). Community and schools: Promise and paradox. Teachers College Press, 1234 Amsterdam Avenue, New York, NY 10027 (paper: ISBN-0-8077-3616-3; cloth: ISBN-0-8077-3617-1).
7. Rogoff, B., Turkanis, C. G., & Bartlett, L. (2001). Learning together: Children and adults in a school community. Oxford University Press.

8. Sergiovanni, T. J. (1994). *Building community in schools*. San Francisco: Jossey-Bass.
9. Berns, R. M. (2015). Child, family, school, community: Socialization and support. Cengage Learning.
10. Solomon, R. P., Levine-Rasky, C., & Singer, J. (2003). *Teaching for equity and diversity*. University of Toronto Press.

WEB RESOURCES

In addition to the above, the following is a list of suggested (recommended) readings that may be used to supplement class sessions where appropriate:

Abdalla, M.J. & Qureshi, R. (2009). Teacher leadership for school-based professional development: A case study. In Qureshi, R. & Shamim, F.(eds) *Schools and schooling practices in Pakistan: Lessons for Policy and Practice,* Oxford University Press: Pakistan

Qureshi, R. , Pirzado, P. & Nasim, S. (2007), Schooling in Rural Sindh, Pakistan, In Qureshi, R. & Rarieya, J. (eds), *Gender and Education in Pakistan.* Oxford University Press: Pakistan, pp.126146.

Qureshi, R. (accepted for publication). Education for Inclusion: what would it take to have an inclusive primary school in Pakistan?' *Educational Awakening*, Journal of the Islamic University Malaysia.

Qureshi, R. (2006). Colonial Legacy: Understanding the historical roots of female Illiteracy in Pakistan, *Muslim Education Quarterly*, vol. 23 (1 & 2): pp.20-37.

Qureshi, R. (2008). Is Child-Friendly School on the agenda for school reforms? Conversations with Pakistani school heads,' Conference proceedings of the International Conference on the Teacher Education: Transformative Society & Teacher Education Reform, September 1920,2008, Changchun, China:pp.1-10.

Shaaban, M. & Qureshi, R. (2007) "Teacher leaders: Experiences of Pakistani Teachers in leading school improvement activities." Conference proceedings of the International Conference on "Quality in Education: Teaching and Leadership in Challenging Times" February 21-23, 2006, Pakistan: Aga Khan University-Institute for Educational Development:.pp.558-564.

Qureshi, R. & Shamim, F.(Eds). (2009). *Schools and schooling practices in Pakistan: Lessons for Policy and Practic*e, Oxford University Press: Pakistan.

Qureshi, R. & Rarieya, J. (Eds) (2007). *Gender and Education in Pakistan.* Karachi, Pakistan: Oxford University Press: Pakistan.

PC / B.Ed.-207	TEACHING OF SOCIAL STUDIES (PROFESSIONAL)	2

COURSE OBJECTIVES

Students will be able to:

1. Review/reflect on the nature, methods, key concepts and skills in the disciplines comprising the Social Studies (history, geography, political science, citizenship, anthropology, sociology, economics) and to deepen their understanding regarding their use to educate for informed, responsible and active citizenship
2. Develop an understanding of current, persistent and controversial issues (global warming, cultural diversity, universality of human rights) and acquire the skills to teach controversial issues in their classrooms
3. Recognize diversity and differences as assets and learn to evaluate different perspectives and biases
4. Encourage and promote inquiry and critical approach in their teaching practice, thereby engage in critical reflection on their experiences (at the university and in real classrooms) to improve their practice

Broaden their repertoire of content knowledge, pedagogical strategies, and instructional skills

SUGGESTED TEACHING APPROACHES

The old adage 'if all you have is a hammer, everything looks like a nail' is equally true of teaching strategies. If the only classroom teaching strategy you know is traditional lecturing, that is the teaching tool you will likely use for all classroom situations.

The course will be taught through activities and strategies that:

develop a sense of curiosity among Student Teachers and an interest in learning more

facilitate Student Teachers to connect what they are learning to their prior knowledge and to current issues

encourage them to inquire

provide Student Teachers with the opportunities to think critically and creatively about what they are learning and to apply that learning to authentic situations.

RECOMMENDED ASSESSMENT

Teachers. By using multiple forms of assessment, the Instructor will be able to gain a better understanding of Student Teachers' knowledge, skills, and disposition. These assessments are in addition to University examinations. They will provide a good model on how to assess Student Teacher knowledge, skills, and dispositions. In general, you will find suggestions for assessment included with each unit.

Plan to collect ongoing information (formative assessment) about Student Teacher progress. This could include activities such as the following:

Short quizzes

Minute papers - Ask students to take one minute to write about what they are learning in class.

Observing and recording - Keep a log in a small notebook.

COURSE CONTENT

Unit 1: Citizenship and Human Rights Education

Introduction to the course, Definitions, Rationale for teaching and learning of Citizenship

- Key Concepts of Citizenship education
- Controversial Issues—What, Why and How to teach them

Towards creating a better world—developing citizenship values, skills and dispositions through the teaching of controversial issues

- Links with other subject areas
- Citizenship rights

The Evolution of the concept of Human Rights

- Rights and Responsibilities, Defining Human Rights

Civil, Political, Social, Economic and Cultural Rights

Women's rights, Children's rights, Interdependence

- Human dignity, Justice, Equality, Freedom,
- Universality, Indivisibility—Are human rights universal?
- Reflection and Review

Unit 2: History - People, Past Events and Societies

Definition, Rationale and Methods of History

- Key concepts: Time and Chronology
- Change and Continuity

Cause and Effect

- Multiple causation
- Multiple perspectives, Interpretation of history
- Reflection and Review

Unit 3: Geography - People, Place and Environment

Definition and Rationale for teaching and learning Geography

Key Concepts/Themes of Geography: Location, Place, Humanenvironmental Interactions, Movement, Regions

Skills required for teaching and learning Geography

Global Warming—exploring the issue • Global Warming—a myth or reality?

- Controversy about the theory of, and responses to Global Warming
- Reflection and Review

Unit 4 Culture and Diversity

Rationale for the study of Culture

- The Dynamic Nature of Culture
- Groups and Institutions

Society, Socialization

- Civilization
- Cultural Adaptation

Assimilation, Acculturation

- Diffusion, Dissonance
- Multiculturalism and its implications
- Reflection and Review

Interdependence

- Peace and Sustainability
- Understanding Peace and Conflict

Why 'Peace Education', Teaching children the skills to resolve conflicts

- Positive attitudes and skills—empathy, cooperation, anger-management, and problem-solving
- Communication and Negotiation
- Reflection and Review

Unit 5 Power, Authority and Governance

Power, Government Systems and Regimes

- Institutions of Government, political processes and participation
- Civil society—individuals, groups and institutions
- Reflection and Review

Unit 6 Production, Distribution and Consumption

Definition of and Rationale for teaching and learning of Economics

- Conflict between wants and resources, Choice, Scarcity
- Opportunity cost

Economic systems

- Production and distribution of Wealth
- Supply and demand

Reflection and Review

Suggested Textbooks Websites and References

www.proteacher.com
This website has teaching ideas and resources, lesson plans etc. for elementary school

www.moneyinstructor.com
This website has worksheets, lessons and activities for teaching money, business and life skills. The ideas could be useful for teaching economics topics

www.educationworld.com
Educational research blogs, templates, tutorials, worksheets, lesson plans are many other articles with very good ideas for teachers are available on this site

www.pbs.org
A variety of videos, on culture and society, history topics, science and nature, etc are available on this site

www.teachingideas.co.uk
Lesson ideas, plans, activities, resources which can be used by teachers in their classrooms are available on this site

www.learner.org
This site offers Teachers' professional development and classroom resources and activities across the curriculum

www.geography-site.co.uk
A comprehensive site exploring geography with online lessons, revision sheets and easy to read information about geography topics

www.teachervision.fen.com/diversity/teacher resources/33631.html
Teachers could use the resources on this site to teach students to respect differences among people in their community and around the world

www.salsa,net/peace/teach/teachers.html Peace
tools for teachers could be found on this site

SUGGESTED REFERENCE BOOKS

1. Anderson, L. H. (2010). Chains. New York: Atheneum Books for Young Readers.
2. Brophy, J. and Alleman, J. (2006). Powerful social studies for elementary students. Belmont, CA: Thomson Wadsworth.
3. Bailey, R. (ed) (2000) Teaching Values and Citizenship Across the Curriculum. London: Kogan Page.
4. Birzea, C. (2000). Education for democratic citizenship: a lifelong learning perspective. Strasbourg: Council of Europe.
5. Bridges, D. (1986). Dealing with controversy in the curriculum: A philosophical perspective. In J. Wellington (Ed.), Controversial issues in the curriculum. Oxford, UK: Basil Blackwell.
6. Wales, J. & Clarke, P. (2005). Learning citizenship Practical teaching strategies for secondary schools. London: Routledge Falmer.
7. Clarke, B. (1994) Citizenship: London and Colorado: Pluto Press.
8. Clough, N & Holden, C. (2002) Education for Citizenship: Ideas into Action. London: Routledge/Falmer
9. Crick, B.(2000) Essays on Citizenship. Continuum: London.
10. David, W. & Cleaf, V. (1991). Actions in elementary social studies. Massachusetts: Allyn and Bacon.
11. Davies, I. (2005). 100 Ideas for Teaching Citizenship. London: Continuum.
12. Dean, B. L. & Joldoshalieva, R. (2006). Teaching Controversial Issues: Is it possible in Pakistan.??? (Ed).Unpublished book chapter.
13. Delanty, G. (2000) Citizenship in a global age: Society, Culture Politics. Buckingham and Philadelphia: Open University Press.

WEB RESOURCES

Citizenship Foundation (2004) 'Young People are not politically apathetic says new research'. Retrieved October 10, 2006, from http://www.citizenshipfoundation.org.uk/main/news.php?n83.

Citizenship foundation (2006) Controversial issues. Retrieved June 16, 2006, from www. citizenshipfoundation.org.uk/ main/page.php?12.

Department for Education and Skills (2004) 'Introducing Citizenship Education: A guide for parents and carers'. Retrieved October 30, 2006, from http://www.citizenshipfoundation.org.uk/main/resource.php?s256

Department for Education and Skills (no date) 'What is citizenship?'Retrieved November 20, 2006, from www.dfes.gov.uk/citizenship/section.cfm?sectionId=3&hierachy=1.3

Engle, S. & Ochoa, A. (1988). Education for democratic citizenship: Decision making in social studies. New York: Teachers College Press.

Frazer, E.(2003). Citizenship Education: Anti-political Cultural and Political Education in Britain, in A. Lockyer, B. Crick & J.Annette (eds.) Education for democratic citizenship: Issues of theory and practice. England: Ashgate. pp. 64—77

http:// www. citized.info/ pdf/commarticles/hilary_claire1.pdf. Retrieved December 12, 2006.

http://www.standards.dfes.gov.uk/ethnicminorities/raising_achievement/763611/# Retrieved May 12, 2006.
http://www.quoteland.com. Retrieved January 10, 2007.

Huddleston, T. and Kerr, D. eds. (2006), Making sense of Citizenship: A CPD Handbook. London: Hodder Murray.
www.citizenshipfoundation.org.uk/main/resource.php?s215

Oulton, C., Day, V., Justin, D. and Grace, M. (2004). Controversial issues—teachers' attitudes and practices in the context of citizenship education. Oxford Review of Education, 30 (4), 489507.

National Council for the Social Studies Task Force on Standards for Teaching and Learning in the Social Studies. (2008) A vision of powerful teaching and learning in the social studies: Building effective citizens. Social Education, 72(5), 277-280.

TP/ B.Ed.-202	TEACHING PRACTICE	3

COURSE OBJECTIVES

Student teachers will be able to:

1. Reflect on and learn from teaching practice.
2. Collaborate with peers, cooperating teacher and college/ supervisor, establishing professional relationships.
3. Invite, accept, and utilize feedback from the supervising teacher, peers, and the college/university supervisor in a non-defensive manner.
4. Produce and implement plans for teaching and learning which reflect the use of appropriate instructional methods and strategies to meet the needs of all students within the context of the practicum classroom.
5. Utilize appropriate instruments or techniques for assessing student learning and learning needs.

 Recognize cognitive and affective needs of students and establish learning environments and use activities appropriate to meeting those needs.

SUGGESTED TEACHING APPROACHES

Teaching and learning in this course are based on the principles of reflective practice, participatory process, and critical analysis. Short introductory presentations will be made by the instructor and/or invited guests, but much of the class time will be spent in discussion and group activities, including role play and presentations, aimed at consolidating understanding and exploring issues in more depth.

RECOMMENDED ASSESSMENT

Portfolio Assessment/ Model Lessons

COURSE CONTENT

a) School experiences

Introduction to the school and classroom context.

- Complete the Student Teacher Checklist, provided in your handbook.
- Meeting with the cooperating teacher to discuss how he/she plans for instruction, expectations and the like

- Non-observational Assignments, which will provide you with an opportunity to familiarize yourself with the school, staff, school rules, policies etc. The assignments you are required to complete will depend on your current placement. See the note below.

- If you are completing this practicum at a different school than the one you worked in for Semester 3, you will need to complete the assignments provided in your handbook.
    - Inventory of School Resources,
    - Community/Co-curricular Engagement
    - Discipline Procedures and Policies

    - Cooperating Teacher Interview
    - Interview a Child/Children
    - Classroom Management

- If you are at the same school as you were in Semester 3 – but working with a different teacher you need to complete the assignments provided in your handbook.
    - Cooperating Teacher Interview
    - Interview a Child/Children
    - Classroom Management

- Log of Daily Activities
- Daily Reflections (see the forms provided in your handbook)
- Classroom Observations which will provide you with an opportunity to learn how your teacher engages with the children using verbal behavior and how to pace a lesson
- As requested by the Cooperating Teacher, working with children who need extra help and with small groups of children to carry out the teacher's plans

Assisting the teacher in classroom instruction as requested and assuming responsibility for planning, teaching and assessing at least part of the lesson.

- Co-planning and co-teaching with the Cooperating Teacher
- Working with children who need extra help
- Completion of any non-observational assignments still outstanding
- Completion of classroom Observations which will provide you with an opportunity to observe children's engagement through their verbal responses and what types of verbal interaction occur in the classroom (selective verbatim)
  Working with small groups of children to carry out the teacher's plans
- Co-teaching lessons with the Cooperating Teacher
- Finding out about assessment – what strategies does the teacher use

Assuming responsibility for planning, teaching and assessing a at least one subject matter's lesson

- Co-plan full lessons with the Cooperating Teacher
- Co-teach lessons for one subject matter each day
- Working with children who need extra help
- Classroom observations that will provide you with information on how to use questions effectively to engage children. You should also consider using the observation tools provided in your Semester 3 handbook to learn about other aspects of teaching and learning.
- Prepare for a formal observation by your Cooperating Teacher using the Formal Observation Cover sheet, pre-observation guide, and post observation reflection sheet.
- Prepare for a formal observation by your College/University Supervisor using the Formal Observation Cover sheet, pre-observation guide, and post observation reflection sheet.
- Prepare for a mid-way triad meeting.

- Use the Notes for Self Assessment sheet indicating all the evidence you have collected and how this meets the NPSTP.

Assuming responsibility for planning, teaching and assessing in two subjects.

- Continue activities above, taking over responsibility for planning, teaching and assessing one subject full lesson) throughout the week
- Co-plan and co-teach all other subjects with the Cooperating Teacher
- Prepare for a formal observation by your College/University Supervisor using the Formal Observation Cover sheet, pre-observation guide, and post observation reflection sheet.

Assuming responsibility for planning, teaching and assessing at least three subjects

- Continue activities above, taking over responsibility for planning, teaching and assessing three core subjects with the whole class throughout the week (math, Urdu, science/general studies).
- Co-plan and co-teach all other subjects with the Cooperating Teacher
- Prepare for a formal observation by your Cooperating Teacher using the Formal Observation Cover sheet, pre-observation guide, and post observation reflection sheet.
- Prepare for a formal observation by your College/University Supervisor using the Formal Observation Cover sheet, pre-observation guide, and post observation reflection sheet.

Assume additional responsibilities as agreed with the Cooperating Teacher

- Continue planning, teaching and assessing the three core subjects throughout the week and add additional subjects as agreed with the Cooperating Teacher
- Co-planning and co-teaching teaching all other subjects with the Cooperating Teacher
- Prepare for a formal observation by your College/University Supervisor using the Formal Observation Cover sheet, pre-observation guide, and post observation reflection sheet.
- Prepare for a final triad meeting.
- Prepare a Professional Portfolio, addressing the NPSTP. (Use the Rubric provided in your handbook as a guide.)

b. The Practicum Seminar

The seminar runs parallel to your experience at school. The content of the seminar will vary with the Instructor every semester that it is offered.

However, students may expect to discuss issues such as:

- Practical issues of teaching in learning in their field placements,
- Language learning,
- Different perspectives on how to organize and manage a classroom,
- Planning units of instruction,
- Content-specific instruction,
- Selecting and using assessments of learning,

- How to use standards for primary school teaching practice,
- Identifying the hidden curriculum in the classroom,
- Creating classroom environments that recognize physical, emotional, affective, social and intellectual needs of children,
- Non-instructional roles of the teacher,
- Working with parents and community

REFERENCE BOOKS

Course readings and assignments will focus primarily on preparation for field assignments. Additional assignments and/or readings will be provided throughout the semester.

1. Louis Cohen, Lawrence Manion-A guide to teaching practice -RoutledgeFalmer (2004)
2. Practicum Handbook Semester 4 (Cooperating Teacher)-English
3. Practicum Handbook Semester 4 (Student Teacher) English
4. Practicum Handbook Semester 4 (Supervisor) English
5. Practicum Handbook Semester 4(Cooperating Teacher) - Urdu
6. Perry, R. (2002). *Teaching practice: A guide for early childhood students*. Routledge.
7. Gower, R., Walters, S., & Phillips, D. (1983). *Teaching practice handbook.* London: Heinemann.
8. Cakmak, M. (2019). *Dimensions and Emerging Themes in Teaching Practicum.* Routledge.
9. Townsend, T., & Bates, R. (2007). *Handbook of teacher education: Globalisation, standards and professionalism in times of change*. Springer.
10. Baird, B. N., & Mollen, D. (2018). The internship, practicum, and field placement handbook: A guide for the helping professions. Routledge.
11. National Professional Standards for Teacher Education in Pakistan

WEB RESOURCES

Allen, J. M. (2011). Stakeholders' perspectives of the nature and role of assessment during practicum. Teaching and teacher education, 27(4), 742-750.

White, S., & Forgasz, R. (2016). The practicum: The place of experience?. In International handbook of teacher education (pp. 231-266). Springer, Singapore.

Mudra, H. (2018). Pre-service EFL teachers' experiences in teaching practicum in rural schools in Indonesia. The Qualitative Report, 23(2), 319-344.

Year-III

SEMESTER – V

Course code	COURSES	credit hrs
CC / B.Ed.-301	English – III (Technical Writing & Presentation Skills) (Compulsory)	3
CoC / B.Ed.-Reading 301	Content Course – I (from selected discipline – I) Reading Specialization **"Foundations of Reading"**	3
CoC / B.Ed.-Math 302	Content Course – I (from selected discipline – II) Choose any one of the following specialization **Mathematics 1** **OR**	3 OR
CoC / B.Ed.- Sci 303	**Integrated Science 1**	3
FC / B.Ed.- 301	Foundations of Education (Foundation)	3
FC / B.Ed.-302	Curriculum Development (Foundation)	3
FC/ B.Ed.- 303	Educational Psychology (Foundation)	3
	Total Credit Hours	18

CC/ B.Ed.-301	ENGLISH – III (TECHNICAL WRITING & PRESENTATION SKILLS) (COMPULSORY)	3

COURSE OBJECTIVES

The course Objectives include:

1Adopting clear writing style to produce effective technical documents based on reader-based principles.

2. Presenting information in an appropriate style to different types of audience both orally and in written as per demand of their professional careers.

3. Communicating in ethically responsible manner.

4. Increased ability to work in teams.

5. Further mastering of presentation skills

6. Enable students write proposals for a research paper

7. Develop skills in writing emphasizing on style, content, language, form, clarity and consistency

8. Develop fluency in speaking with correct pronunciation

9. Enable students read, understand, analyse and respond to written miscellaneous topics

SUGGESTED TEACHING APPROACHES

There will be several short lectures, followed by case studies, videos, practical assignments and group discussions and written practice of letters, applications, resume, reports etc

RECOMMENDED ASSESSMENT

Assessment tasks consist of Quizzes, Practical discussions, case studies, role plays, onsite Exercises, hands-on practice of various technical writing formats

WEEK	CONTENT
1	Characteristics of well written academic piece What makes writing good
2	Developing strong Thesis statement Claims in thesis statement: types and purposes
3	Paragraph writing Introductory paragraph Concluding paragraph
4	Writing for an audience Adapting writing for different audience
5	Unity and coherence How to develop unity in writing What makes an essay coherent
6	Note taking and note making
7	Writing, structuring and shaping the extended essay Text markers
8	Comparing main types of essay Descriptive, classification, narrative, compare and contrast, cause and effect, argumentative, classification
9	Revising and editing

	Polishing writing
10	Proof reading: when how and by whom
11	Activity report: components and purpose
12	Personal reflection: practice in writing reflections
13	Formal / informal letter
	CV writing
14	Dissertation
	Components and analysis
15	Literary book report
16	Non-fiction book report
	Features + practice

RECOMMENDED BOOKS

1. Writing. Advanced by Ron White. Oxford Supplementary Skills. Third Impression 1992. ISBN 0 19 435407 3 (particularly suitable for discursive, descriptive, argumentative and report writing).
2. College Writing Skills by John Langan. Mc=Graw-Hill Higher Education. 2004.33
3. Patterns of College Writing (4th edition) by Laurie G. Kirszner and Stephen R. Mandell. St. Martin‟s Press.
4. The Mercury Reader. A Custom Publication. Compiled by Northern Illinois University. General Editiors: Janice Neulib; Kathleen Shine Cain; Stephen Ruffus and Maurice Scharton
5. Svobodova, Z., Katzorke, H., Jaekel, U., Dugovicova, S., Scoggin, M., & Treacher, P. (2000). Writing in English: a practical handbook for scientific and technical writers.
6. The English Grammar Workbook-a Self-study Guide to Improve Functional Writing (Educative English Books)The English Grammar Workbook-a Self-study Guide to Improve Functional Writing (Educative English Books)
7. Letter Writing In English: Rationale And Models for Social and Business Letters By Anna Maria Malkoc
8. Al-Maskari, K. (2012). *A practical guide to business writing: Writing in English for non-native speakers*. John Wiley & Sons.
9. Hannay, M., Mackenzie, J. L., & Wekker, H. (Eds.). (2013). *Effective writing in English: A resource guide*. Springer Science & Business Media.
10. Siepmann, D., Gallagher, J. D., Hannay, M., & Mackenzie, J. L. (2011). Writing in English: A guide for advanced learners. Francke.

WEB RESOURCES

Britton, W. E. (1965). What is technical writing?. College Composition and Communication, 16(2), 113-116.

Figueiredo, S. Technical Writing.

https://www.wikihow.com/Teach-Technical-Writing

Essential Technical Writing Skills from https://technicalwriterhq.com/career/technical-writer/technical-writing-skills/

FC /B.Ed.-301	FOUNDATIONS OF EDUCATION (FOUNDATION)	3

COURSE OBJECTIVES

Student Teachers will understand the following:

1. The concepts of ***Foundations And Education***
2. The influence of the disciplines that constitute the foundations of education on educational thought and practice
3. The interaction of the social, political, and economic structures of pakistani society
4. How social structure and culture cause individual action
5. How these structures and cultures interact with the disciplines of the *foundations* and actually bear on instruction.

6. Student teachers will be able to:
7. Differentiate between the various schools of thought that have influenced education on the whole and education in Pakistan in particular
8. Explain the idea of education and the social and philosophical influences on it
9. Evaluate the social structure of Pakistani society and the role of education in strengthening it.

SUGGESTED TEACHING APPROACHES

A variety of interactive learning approaches will be used in this course. These approaches will enhance Student Teachers' ability to: generate ideas; discuss, ask, and answer questions; develop social skills; and analyse and critique readings and discussion topics. The learning approaches will contribute to the conceptual development of the topic and enhance the Student Teachers' ability to evaluate and justify their opinions in an informed way.

RECOMMENDED ASSESSMENT

Student Teachers will demonstrate their knowledge of the whole course by exploring the relationships between the different philosophies of education, comparing the similarities and differences and the coherence between the philosophical, sociological and psychological perspectives on education through PowerPoint presentations, written assignments, and/or debates. Their performance should also be assessed after each unit through quizzes, tests, academic prompts, observations, homework and reflective journals.

COURSE CONTENT

Unit 1 The ideological foundations of education

- The Islamic foundation (objectives) in light of the Quran and the Hadith
- The Islamic concept of peace
- The interaction of other religions with Islam in an Islamic state
- The roles and expectations of the teacher

Unit 2 The philosophical foundations of education

- The nature, scope, and function of the philosophy of education
- The role of educational philosophy

- Main philosophical thoughts or schools of thought
- Idealism in education
- Realism in education
- Pragmatism in education
- Critical philosophical theories in education

Unit 3 The sociological foundations of education

- The functionalist perspectives on education
- The conflict perspectives on education
- The interactionist perspectives on education

Unit 4 The psychological foundations of education

- The behaviourist perspective on education
- The constructivist perspective on education
- The social cognitivist perspective on education
- The humanist perspective on education
- Instruction, learning process, and assessment strategies in light of the psychological perspective

Unit 5 The historical foundations of education

- The education system before the British invasion of the subcontinent
- Darul Uloom Deoband
- Darul Uloom Nadwat-ul-Ulma
- Mohammedan Anglo Oriental College
- Pakistan's education system (in light of education policies)
    - The state of elementary education
    - The state of secondary education
    - The state of tertiary education and the role of the HEC
    - The influence of the 18th amendment on education and thereafter

Resources

The following resources may be helpful in choosing appropriate readings. A choice of readings may be included in the syllabus or distributed in class, but include only resources that you expect students to use throughout the course. Other readings should be distributed as they are needed. Identify specific chapters from recommended books.

REFERENCE BOOKS

1. Canestrari, A. & Marlowe, B. A. (eds.) (2009). *Foundations of education: An anthology of critical readings*. New York: Sage Publications.
2. Semel, S. F. (2010). *Foundation of education: The essential text*. New York: Routledge.
3. Holt, L. C. & Kysilka, M. (2005). *Instructional patterns: Strategies for maximizing student learning*. New York: Sage Publications.
4. Moore, R. (2004). *Education and society: Issues and explanation in the society of education*. Cambridge: Cambridge Press.
5. Sharma, A. (1999). *Modern educational technology*. New Delhi: Commonwealth Publishers.
6. Howard Gardner The Unschooled Mind How Children Think and How Schools Should Teach 2011

7. Ornstein, A. C., Levine, D. U., Gutek, G., & Vocke, D. E. (2016). Foundations of education. Cengage learning.
8. Tehie, J. B. (2007). Historical foundations of education. Sign, 612(9045), 4394.
9. McLaren, P. (2015). Life in schools: An introduction to critical pedagogy in the foundations of education. Routledge.
10. Butin, D. W. (Ed.). (2014). Teaching social foundations of education: Contexts, theories, and issues. Routledge.

WEB RESOURCES

Bhatt, S. R. (2018). Philosophical Foundations of Education. In Philosophical Foundations of Education (pp. 17-23). Springer, Singapore.

Grantz, C. (2004). Foundations of education.

Tozer, S. E., & Butts, R. F. (2011). The evolution of social foundations of education. In *Handbook of research in the social foundations of education* (pp. 18-28). Routledge.

Pluim, G. W. (2016). Foundations of Education: A Social, Political, and Philosophical Approach. https://www.jstor.org/stable/canajeducrevucan.39.2.08

FC/ B.Ed.- 303	EDUCATIONAL PSYCHOLOGY(FOUNDATION)	3

COURSE OBJECTIVES

At the end of this course, Student Teachers will be able to:

1. Describe different schools of thought and differentiate between psychology and educational psychology
2. define learning and explain different theories of learn3ng and their application in the classroom
3. categorize individual differences based on physical, intellectual, emotional, and socio-cultural differences.
4. analyse the concept and theories of motivation

• analyse the impact of educational psychology on the processes of teaching and learning.

SUGGESTED TEACHING APPROACHES

A major portion of the course will be taught using an interactive, student-centred teaching approach through the following methods: • inquiry content and process • discussion • cooperative learning strategies (e.g. jigsaw, readings, group work, mind mapping, and think, pair, share) • question and answer • text-against-text • interactive lectures.

RECOMMENDED ASSESSMENT

A variety of assessment techniques will be used. Internal evaluation will account for 40% of marks and include assignments (10%), presentations (10%), and tests (20%).

UNIT DESCRIPTIONS

UNIT 1: BASICS OF EDUCATIONAL PSYCHOLOGY

- Nature of educational psychology
- Scope of educational psychology
- Difference between psychology and educational psychology
- Conceptual approaches to psychology
  - Structuralism and functionalism
  - Cognitivism
  - Behaviourist
  - Humanistic
  - Constructivist
  - Gestalt psychology
- Why do we study educational psychology?

UNIT 2: LEARNING PROCESS

- Definition of learning
- How do we learn?
- Learning Theories
- Behaviourist Theory and critique of its use in the classroom/critique
- Cognitive Theory and critique of its use in the classroom

- Social Learning Theory and critique of its use in the classroom
- Constructivist Theory and critique of its use in the classroom
- Overview of learning disability
- Types of learning disability
- Characteristics of children with learning disability
- Difference between slow learner and ADHD child

UNIT 3: INDIVIDUAL DIFFERENCES

- Concept of individual differences
- How do people differ?
- Why do people differ?
- Overview of physical, emotional, social, and mental differences
- How to deal with individual differences?
- Children with special needs
- Major types of special needs children
- Models of disability
- Occupational needs of special children
- Emotional disturbance
- Social and economic disadvantages
- Gifted Learners

UNIT 4: MOTIVATION

- Needs and drives
- Basic and acquired motives
- How is a child motivated?
- Techniques of motivation
- Classification of human motives — Maslow's need theory
- Psychoanalytic Theory
- Kohn's Motivational theory

TEXTBOOKS AND REFERENCES

1. Elliott, et.al. (2000). Educational Psychology: Effective Teaching, Effective Learning, 3rd Edition. McGraw-Hill. http://www.mhhe.com/socscience/education/elliott/book/today.htm
2. Gage, N. L., and David C. Berliner. 1998. Educational psychology. Boston: Houghton Mifflin.
3. Santrock, John W. 2008. Educational psychology.
4. Eggen, Paul D., and Donald P. Kauchak. 2016. Educational psychology: windows on classrooms.
5. Duchesne, Susan, and Anne McMaugh. 2012. Educational psychology for learning and teaching.
6. Morse, William Charles, Glenn Max Wingo, William Charles Morse, and William Charles Morse. 1971. Classroom psychology: readings in educational psychology. Glenview, Ill: Scott, Foresman.

7. Fontana, David. 1988. Psychology for teachers. Basingstoke: Macmillan Education.
8. Ormrod, Jeanne Ellis. 2012. Essentials of educational psychology: big ideas to guide effective teaching. Boston: Pearson.
9. Donald J. Treffinger, J. Kent Davis and Richard E. Ripple (Eds.)-Handbook on Teaching Educational Psychology-Academic Press Inc (1977)
10. Eloff, Irma, and L. Ebersöhn. 2004. Keys to educational psychology. Cape Town UCT Press.

WEB RESOURCES

http://web.utk.edu/~rmcneele/classroom/theories.html
http://teachingasleadership.org/sites/default/files/Related-Readings/LT_Ch1_2011.pdf
http://webspace.ship.edu/cgboer/maslow.html

FC / B.Ed.-302	CURRICULUM DEVELOPMENT (FOUNDATION)	3

COURSE OBJECTIVES

1. Understand the concept of curriculum
2. Differentiate between different types of curriculum
3. Gain awareness of curriculum design and development
4. Examine the components of the curriculum development process
5. State the critical issues, problems and trends in curriculum
6. Recognize the role of teacher as curriculum planner and developer to meet the challenges and demands of 21st century
7. Learn the skills and knowledge to translate intended curriculum into practice

SUGGESTED TEACHING APPROACHES

Student Teachers are encouraged to not only know about curriculum, but to also act as curriculum planners and developers.

A variety of teaching and learning approaches will be used throughout this course: lecture, group discussion, group work, peer learning, informational posters, and question-and-answer sessions. Discussion and reflection will help Student Teachers become familiar with the concept of curriculum; its elements, aims, and objectives; and the curriculum development process.

RECOMMENDED ASSESSMENT

Sample assignment 2: Child study

Note: This assignment could incorporate the individual reflective journal. It is also a good assignment to coordinate with other faculty. For example, the Science Instructor or Islamic Studies Instructor might want to require observation of how children are learning these subjects. Components assigned by other faculty should be graded by that faculty. The assignment might also become part of a larger portfolio to be developed over the two to four years of the program.

Student Teachers taking the course will be required to write a study about a child between 5 and 10 years old. The purpose is to follow the child's development in school. Ask the Student Teachers to arrange with a school that is convenient to conduct a child study. The class teacher may have suggestions about which child to study. Student Teachers should choose a child who does not seem to be a problem to the teacher and whose behaviour, learning needs, and the like are typical. Permission will need to be obtained from the child's parents. The study will not evaluate the child but document growth. The child may be a relative or someone the Student Teacher has not met before. If the Student Teacher chooses a relative, they should obtain permission from the child's teacher to visit the school and plan to observe at the school for 40 to 60 minutes a week for eight weeks.

Once the study is completed and graded, the Student Teacher should set up a time to meet with the class teacher and a separate time to meet with the parent or caregiver to go over what they have learned. The Student Teacher should also be prepared to discuss this with other Student Teachers in class.

COURSE CONTENT

Unit 1: Introduction to curriculum

- What is curriculum?: Traditional and progressive conceptions
- Various forms of curriculum
- Essential elements in curriculum: Objectives, content selection, and milieu
- Curriculum implementation
- Curriculum aims, goals, and objectives
- Taxonomy of educational objectives (Bloom's three domains)

Unit 2: Curriculum design

- The need for and importance of teacher involvement in curriculum design
- The concept of curriculum design
- Using the curriculum design process
- Analysing a unit plan in light of curriculum design concepts

Unit 3: Curriculum change and curriculum development in Pakistan

- The concept of curriculum change and its sources
- The process and strategies of curriculum change
- Issues of curriculum change in Pakistan
- The process of curriculum development in Pakistan
- Curriculum development at the primary and secondary levels
- Critique and discuss the unit plan chosen for analysis in Unit 2

Unit 4: Curriculum monitoring, evaluation, and assessment

- Traditional and progressive notions of curriculum monitoring and evaluation
- Forms of curriculum evaluation (formative and summative)
- The role of evaluation in curriculum improvement
- Traditional and progressive notions of assessment
- Types of assessment (norm-referenced and criterion-referenced assessment, portfolio assessment, and performance-based assessment)
- Practical application of an assessment plan for the unit they have chosen to analyse (developed in another course in the program) through critique and development

Unit 5: Futuristic perspectives on curriculum

- Future trends
- Presentation of unit critique and analysis

SUGGESTED REFERENCE BOOKS

1. Ross, Alistair. 2000. Curriculum construction and critique. London Falmer Press.
2. Developing the Curriculum William Gordon II, Rosemarye Taylor, Peter Oliva - Developing the Curriculum-Pearson (2018)
3. Ellis, Arthur K. 2004. Exemplars of curriculum theory. Larchmont, N.Y. Eye on Education.
4. Francis P. Hunkins Allan C. Ornstein - Curriculum _ foundations, principles, and issues, global edition-Pearson Education Limited (2016)
5. Hirst, Paul Heywood. 1975. Knowledge and the curriculum a collection of philosophical papers. London Routledge & Kegan Paul –
6. Kelly, A. V. 1977. The curriculum theory and practice. London Harper and Row –

7. Maree Gosper, Dirk Ifenthaler (auth.), Maree Gosper, Dirk Ifenthaler (eds.) - Curriculum Models for the 21st Century_ Using Learning Technologies in Higher Education-Springer-Verlag New York (2014)
8. Null, J. Wesley. 2011. Curriculum from theory to practice. Lanham, Md Rowman & Littlefield.
9. Ornstein, Allan C., Daniel U. Levine, and Allan C. Ornstein. 1989. Foundations of education. Boston Houghton Mifflin. –
10. Pinar, William F. 2003. International handbook of curriculum research. Mahwah, N.J. L. Erlbaum Associates.

WEB RESOURCES

Leslie Owen Wilson's 'Curriculum index' offers an overview of curriculum development and planning. http://www4.uwsp.edu/education/lwilson/curric/curtyp.htm This is a self-directed module on curriculum theory, design, and assessment.

www.col.org/stamp/module13.pdf

Haider, G. (2016). Process of curriculum development in Pakistan. *International Journal of New Trends in Arts, Sports & Science Education (IJTASE)*, *5*(2).

Durrani, N., & Dunne, M. (2010). Curriculum and national identity: Exploring the links between religion and nation in Pakistan. *Journal of Curriculum Studies*, *42*(2), 215-240. https://www.tandfonline.com/doi/full/10.1080/00220270903312208

Jamil, B. R. (2009, August). Curriculum reforms in Pakistan–A glass half full or half empty. In *Seminar on School Curriculum Policies and Practices in South Asian Countries, NCERT Delhi, India* (pp. 10-12). https://itacec.org/document/nep09/NCERT%20Pakistan%20paper%20BRJ.pdf

SEMESTER – VI

Course code	COURSES	credit hrs
PC / B.Ed.-301	Contemporary Issues and Trends in Education (Professional)	3
PC / B.Ed.-302	Comparative Education (Professional)	3
PC / B.Ed.-303	Introduction to Guidance and Counseling (Professional)	3
PC / B.Ed.-304	STEAM Education in Elementary Classes (Science, Technology, Engineering, Arts and Mathematics)	3
CoC / B.Ed.-Reading 304	Content Course – II (from selected discipline – I) Reading Specialization **(Reading Difficulties)**	3
CoC / B.Ed-Math 305	Content Course – II (from selected discipline – II) Choose any one of the following specialization • **Mathematics II OR**	3 OR
CoC / B.Ed.-Sci 306	• **Integrated Science II**	3
	Total Credit Hours	18

PC/ B.Ed.-302	COMPARATIVE EDUCATION	3

COURSE OBJECTIVES

explain comparative education
• identify educational comparative approaches and methods
• identify the similarities and differences, as well as the strengths and weaknesses, of education systems within Pakistan
• compare and contrast the educational systems of selected countries
• draw lessons from various systems of education for an informed practice.

SUGGESTED TEACHING APPROACHES

As this course requires research and study skills, Student Teachers will have to work independently and in groups to locate resources and do comparative analyses. The faculty will give lectures on some concepts, such meaning, history, and methods of comparative analyses, in an interactive way. Student Teachers will maintain a reflective journal throughout the course and will trace their development as critical consumers of knowledge.

RECOMMENDED ASSESSMENT

Grading policy approved by participating universities and their affiliated colleges will be used for assessment purposes. In addition to coursework assignments, Student Teachers will take a midterm and a final exam, as approved in the university exam policy. Sample assignments appear in the teaching notes.

COURSE CONTENT

Unit 1 Introduction to comparative education

- The purposes of comparative education
- The uses of comparative education
- What is comparative education?
- Comparability as a historical journey
- Approaches to comparative education
- Approaches to comparative education
- Methods of comparative education
- Methods of comparative education

Unit 2 The scope of comparative education and the determinants of a national education system

- The scope of comparative education
- Different disciplines from which comparative education draws ideas
- The importance of the sociology and philosophy of education to comparative education
- Factors determining a country's education system
- The role of key factors in determining education (religion, finances, and political and global trends)
- The role of teachers in appreciating and being critical reviewers of the factors that determine education systems

Unit 3 Comparative view of systems of education in Pakistan

- Three pathways to education
- Public and private education systems
- Madrassah and formal education
- Formal, distance, and non-formal education
- Project presentation

Unit 4 Comparative education in developed countries

- Education theories and practices in the United States
- Historical reforms that have guided education in the United States
- Education theories and practices in Japan
- Historical reforms that have guided education in Japan
- Education theories and practices in Hong Kong
- Historical reforms that have guided education in Hong Kong
- Education systems of the United States, Japan, Hong Kong, and Pakistan:
- Similarities and differences
- Lessons that can be learned and practices that can be adapted and adopted

Unit 5 Comparative education in developing countries

- The education system and practices in Afghanistan
- Issues and challenges in the education sectors of Afghanistan and ways of addressing them
- The education system and practices in India
- Issues and challenges in the education sectors of India and ways of addressing them
- The education system and practices in Bangladesh
- Issues and challenges in the education sectors of Bangladesh and ways of addressing them
- Education systems in Afghanistan, India, Bangladesh, and Pakistan:
- Similarities and differences
- Lessons that can be learned and practices that can be adapted or adopted in Pakistan
- Review and conclusion

SUGGESTED REFERENCE BOOKS

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2. Isani, U. A. G., & Virk, M. L. (2006). *Higher education in Pakistan*. Islamabad: National Book Foundation.
3. Kubow, P. K., & Fossum, P. R. (2007). *Comparative education: Exploring issues in international context*. Boston: Pearson Merrill.
4. Cohen, P. (2004). *The idea of Pakistan*. Washington, D.C: Brookings Institute.
5. Cowen, R. (2000). Comparing futures or comparing pasts? *Comparative Education*, 36(3), 333–342.
6. Lawal, B. O. (2004). *Comparative education*. Osogbo: Swift Publishers Nigeria Ltd.

7. Mallinson, V. (1975). *An introduction to comparative education* (4th ed.). London: Heinemann.
8. Tobin, J. J., Hsueh, Y., & Karasawa, M. (2009). *Preschool in three cultures revisited: Japan, China, and the United States*. Chicago: University of Chicago Press.
9. Ornstein, Allan C., Daniel U. Levine, and Allan C. Ornstein. 1989. Foundations of education. Boston Houghton Mifflin. –
10. Francis P. Hunkins Allan C. Ornstein - Curriculum _ foundations, principles, and issues, global edition-Pearson Education Limited (2016)

WEB RESOURCES

Comparative and International Education Society:
http://www.cies.us

Organisation for Economic Co-operation and Development (OECD) Development Co-operation Directorate:
http://www.oecd.org/dac

OECD Programme for International Student Assessment (PISA):
http://www.pisa.oecd.org

UNESCO Education for All Global Monitoring Report: http://www.unesco.org/en/efarepor

PC/ B.Ed.-301	CONTEMPORARY ISSUES AND TRENDS IN EDUCATION (PROFESSIONAL)	3

COURSE OBJECTIVES

At the end of the course the prospective teachers will be able to:

1. Examine the social implications of the mdgs and the EFA goals
2. Identify different issues pertaining to diversity as well as their impact on student learning
3. State the nature and scope of the factors affecting the quality of schooling
4. Explain how different kinds of schooling affect the quality of schooling
5. Analyse the changing role of the teacher in contemporary society
6. Critically evaluate the roles of peace, conflict, and education in the development of human society.

SUGGESTED TEACHING APPROACHES

Different teaching and learning approaches will be used during the course. They will be focused on developing content knowledge as well as skills and dispositions. Critical reflection and collaboration in learning and teaching as a means of personal and professional growth will be an important consideration throughout the course. Practical strategies to promote personal and professional development will also be introduced. These include the following:

Inquiry

Cooperative learning

Discussion and debate

Academic controversy

Project work

Field trips

RECOMMENDED ASSESSMENT

Course outline

Unit 1: Globalization, the Millennium Development Goals, and Education for All

Globalization
The role of globalization in education
The effects of globalization in the education sector

MDGs: General description and indicators
• Implementation of the MDGs
• Challenges and further strategies in the local context

EFA: General description and indicators
• Implementation of EFA

• Challenges and further strategies in the local context

Unit 2: Issues of diversity

- Diversity
- The impact of diversity on education
    - Approaches to addressing diversity issues: Learning difficulties
    - Language /Religion /Gender /Culture /Social and economic status
- The role of education in addressing issues of diversity
- Strategies and examples of diversity-inclusive pedagogy

Unit 3: The role of peace education at the micro- and macro-levels

- Introduction to peace education
- Societal factors affecting peace in the Pakistani context
- Conflicts in schools:
    - Tolerance /Bullying/Violence /Conflict resolution at the school level
- The impact of peace issues on education
- Peace education: A strategy for conflict resolution
- Projects on selected conflicts
- Presentation of the projects

Unit 4: The role of schools in addressing contemporary issues

- The relationship between school and society
- Schools as social agents and social critics
- The need for schools to create active citizens
- The role of schools in producing workers and professionals
- The role of schools in imparting democratic education
- The importance of character education and skills development
- Factors affecting the quality of schooling
- Issues faced by schools

Unit 5: The changing role of the teacher

- The various roles of a teacher
- The teacher's responsibility to value all learners
- Teachers as world change agents
- External issues affecting teachers' performance
- Interpersonal and social issues in education
- Internal issues affecting teachers' performance
- Teachers' strategies to tackle the issues

REFERENCE BOOKS

1. Rassool, N., & Mansoor, S. (2007). Contemporary issues in language, education and development in Pakistan. In *Global Issues in Language, Education and Development* (pp. 218-242). Multilingual Matters.
2. White, J. (Ed.). (2003). *Rethinking the school curriculum: Values, aims and purposes*. Routledge.

3. Bloom, D. (2004). Globalization and education. *Globalization: Culture and education in the new millennium*, *56*, 56-77.
4. Power, C. (2014). *The power of education: Education for all, development, globalisation and UNESCO* (Vol. 27). Springer.
5. Agarwal, M., & Ray, A. S. (Eds.). (2007). *Globalization and the Millennium Development Goals: Negotiating the Challenge*. Berghahn Books.
6. Kabeer, N. (2003). *Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A handbook for policy-makers and other stakeholders*. Commonwealth Secretariat.
7. Gannon, S., & Somerville, M. (Eds.). (2014). *Contemporary issues of equity in education*. Cambridge Scholars Publishing.
8. Bastos, F., & Zimmerman, E. (2015). *Connecting creativity research and practice in art education: Foundations, pedagogies, and contemporary issues*. National Art Education Association. 1916 Association Drive, Reston, VA 20191.
9. Armstrong, D., & Squires, G. (2012). *Contemporary Issues In Special Educational Needs: Considering The Whole Child: Considering the Whole Child*. McGraw-Hill Education (UK).
10. Woods, P. (Ed.). (1996). *Contemporary issues in teaching and learning* (Vol. 1). Psychology Press.

WEB RESOURCES

1. Prajapati, R., Sharma, B., & Sharma, D. (2017). Significance of life skills education. *Contemporary Issues in Education Research (CIER)*, *10*(1), 1-6.
2. Hoffman, E. S. (2014). Beyond the flipped classroom: Redesigning a research methods course for e3 instruction. *Contemporary Issues in Education Research (CIER)*, *7*(1), 51-62.
3. Duffy, B., & Pugh, G. (2013). Contemporary issues in the early years. *Contemporary Issues in the Early Years*, 1-320.

PC / B.Ed.-303	INTRODUCTION TO GUIDANCE AND COUNSELING (PROFESSIONAL)	3

COURSE OBJECTIVES

By the end of this course, Student Teachers will be able to:

1. Demonstrate knowledge of the importance of guidance and counselling to teachers and students
2. Critically analyse the concepts, scope, and theories that govern the process of guidance and counselling
3. Use the principles and functions of guidance and counselling to ensure a safe learning environment in school
4. Identify and apply different tools of data collection in different situations
5. Select and apply appropriate counselling techniques to solve students' problems
6. Coordinate and communicate with various stakeholders in the process of guidance and counselling.

SUGGESTED TEACHING APPROACHES

The course will include an interactive approach and active learning strategies, such as brainstorming, discussions, case studies, and role plays. It should provide Student Teachers with practical experience of identifying and providing better solutions to problems in a classroom and school setting. The emphasis will be on a student-centred approach in order to provide maximum opportunity for them to inquire, present, share their views, and take an active part in all classroom activities. In some sessions, interactive lectures will also be used.

RECOMMENDED ASSESSMENT

Student Teachers can be assessed in several ways, including questions and answers in classroom practice, quizzes, mini-assignments, and presentations.

COURSE CONTENT

Unit 1: Introduction to guidance and counselling

- Introduction to guidance and counselling
- The basic concepts of guidance and counselling: Guidance, counselling, and psychotherapy
- The Islamic concept of guidance and counselling
- The scope of guidance and counselling: Community, family, administration, and peers
- Principles of guidance and counselling
- Types of guidance and counselling: Educational and personal
- Types of guidance and counselling: Social and vocational
- Theories of guidance and counselling
    - Carl Roger
    - Erik Erikson
    - Alfred Adler
    - B. F. Skinner

Unit 2: The course instructor as a counsellor

- Qualities of a counsellor: Personal and professional
- Guidance services that a teacher can provide
- The teacher as an agent of change: Problems in the classroom for guidance and counselling

- The teacher as an agent of change: Issues in school for change
- The role of a teacher as a counsellor in classroom for improving academic performance
- The role of a teacher as a change agent in school
- Ethical considerations of guidance and counselling

Unit 3: Procedures and tools for guidance and counselling

- Steps and procedures of counselling
- Strategies for solving problems or staging interventions
- Techniques and strategies for problem-solving
    - Observation
    - Interview
    - Cumulative record
    - Questionnaire
    - Case study
- Referring cases to the concerned professionals

Unit 4: School-wide guidance and counselling

- Problems and issues in primary schools: Educational, social, physical, psychological, and career
- Initiating guidance programmes in schools: Needs assessment
- Initiating guidance programmes in schools: Support structure
- Initiating guidance programmes in schools: Vision, mission, and goal-setting
- Initiating guidance programmes in schools: Tasks and activities
- Initiating guidance programmes in schools: Assessment of guidance and counselling programmes
- Involving various stakeholders in the guidance programme: Parents
- Involving various stakeholders in the guidance programme: Community
- Visualizing action plans
- Preparing an action plan
    - Emergency drills: Earthquake, fire, and bomb drills
    - Traumatic stress management
- Assigning responsibilities
- Implementation of action plan or doing activity
- Documentation and report-writing
- Evaluation
- Future plan

SUGGESTED REFERENCE BOOKS

1. Dougherty, A. M. (2009). *Psychological consultation and collaboration in school and community settings* (5th ed.). Belmont: Brooks/Cole.
2. Hederson, D. A., & Thompson, C. L. (2011). *Counseling children* (8th ed.). Belmont: Cengage Learning.
3. Sharif, R. S. (2009). *Applying career development theory to counseling* (5th ed.). Stanford: Brooks/Cole.
4. Zunkar, V. G. (2006). *Career counseling: A holistic approach* (7th ed.). Belmont: Brooks/Cole.
5. Butcher, P. A. (2005). *Sociology* (9th ed.). Boston: McGraw-Hill.

6. Hurlock, E. B. (2008). *Developmental psychology* (5th ed.). London: McGraw-Hill.
7. Shaffer, D. R., & Kipp, K. (2010). *Developmental psychology: Childhood and adolescence* (8th ed.). Belmont: Wadsworth.
8. Nayak, A. K. (2007). *Guidance and counselling.* New Delhi: APH Publishing.
9. Thompson, R. A. (2012). P*rofessional school counseling: Best practices for working in the schools* (3rd ed.). New York: Routledge.
10. Okum, B. F., & Kantrwitz, R. E. (2008). *Effective helping: Interviewing and counseling techniques* (7th ed.). Belmont: Thomson.
11. Perry, W. (2008). *Basic counselling techniques: A beginning therapist's toolkit* (2nd ed.). Bloomington: Author House.

WEB RESOURCES

NDMA (National Disaster Management Authority). (2007). *National disaster risk management framework Pakistan*. Islamabad: NDMA, Government of Pakistan. Retrieved from: http://unportal.un.org.pk/sites/UNPakistan/OneUN/DRM%20Documents/NDRM%20Framework%20Pakistan.pdf

Bannister, C., & McInnes, B. (2005). *RCN working well initiative guidance on traumatic stress management in the health care sector*. Retrieved from: http://www.rcn.org.uk/__data/assets/pdf_file/0009/78543/001804.pdf

Lai-Yeung, S. W. C. (2014). The need for guidance and counselling training for teachers. *Procedia-Social and Behavioral Sciences*, *113*, 36-43.

CODE: PC / B.Ed.-304	**STEAM EDUCATION IN ELEMENTARY CLASSES** **(Science, Technology, Engineering, Arts and Mathematics)**	3

COURSE OBJECTIVES

Course Learning Outcomes:

- Enable student-teachers to develop the skill and proficiency to use STEAM in their future teaching
- Develop Motivational Resilience in Students so that they demonstrate proficiency in adaptive strategizing skills and persistence in the face of academic challenges, obstacles, and setbacks
- Students demonstrate high quality participation in academic work, including effort and enthusiasm
- Develop Metacognitive Skills in Students so they are aware of a variety of problem solving strategies and tools and be able to choose and strategically use these tools
- Facilitate Problem Solving so Students will be able to identify, frame, and solve complex problems and apply knowledge and skills to novel problems and/or situations across STEAM subjects
- Develop Academic Identity Students will feel a sense of belonging, competency, autonomy and purpose as they view themselves and their potential to enjoy and succeed in STEM classes and careers
- Develop a passion for learning and activism in students that extends beyond the classroom and to believe that they have the capacity to make change in their community.

SUGGESTED TEACHING APPROACHES

Teaching Methodology:

- Emphasis on deep content knowledge and higher-order cognitive skills by addressing learning goals in both areas
- Frequent formative and summative assessments to facilitate diagnostic teaching and learning
- Using learning activities that students find to be relevant, important, worthwhile, and connected to their cultural and personal lives outside the classroom
- Following a living-curriculum structure that is representative of the surrounding culture and aware and tolerant of all types of diversity and perspectives.
- Employing design thinking for completing the project, where they:
    - Empathize: to gain an understanding of the problem and the underlying issues. They may consult experts and learn from the experiences of others.
    - Define: the core problem after analyzing observations and synthesizing them.
    - Ideate: new solutions by thinking outside the box, and looking for alternate ways to video the problem
    - Prototype: the best possible solution through experimentation of ideas one by one.
    - Test: the prototype to see whether the problem is solved, using results to ‘redefine’ the problem, or modify any of its components that needs alteration.
- The teaching practice makes use of:

- Asking questions (science) and defining problems (engineering)
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Using mathematics and computational thinking
- Constructing explanations (science) and designing solutions (engineering)
- Engaging in argument from evidence
- Obtaining, evaluating, and communicating information

RECOMMENDED ASSESSMENT

Modes of Assessment:
The student-teachers will be assessed on:

- Developing Lesson plans according to the appropriate age, grade and level of proficiency of students
- Developing teaching activities incorporating STEAM and design thinking in order to cultivate problem solving and critical thinking in their students
- Documenting their own learning process in design journals that include reflections, images, and plans for the project, which will show mastery of skills and content.
- Presenting their final assigned STEAM project through microteaching at the end of the semester as final assignment.

Course Description:

This course is designed to incorporate STEAM (Science, Technology, Engineering, Arts and Mathematics) in the teaching of B.Ed. Elementary Content courses. Incorporating STEAM in mathematics and science classrooms enables educators to craft powerful collaborative learning experiences that support problem solving, flexible thinking and applying content in real-world contexts. In addition, with integration of both content-specific and content-neutral technology, students and teachers can construct meaning together in authentic ways that elevate learning. High-level STEAM education is project-based learning which enables students to gain knowledge and skills, over a period of time, through cross-disciplinary explorations and responses into subjects that apply to the real world. STEAM is complimentary with 21st century skills, particularly the "4 Cs" of creativity, collaboration, critical thinking, and communication, and incorporates Design Thinking (Empathise, Define (the problem), Ideate, Prototype, and Test) in pedagogy. Voice and choice are critical components to STEAM; students can choose team members and products to produce to solve authentic challenges. In addition, they may be allowed to pick subtopics within the overall project or challenge, or questions they want to explore within the overall driving question.

Course Structure:
For each STEAM activity and topic, the student-teachers will:

- List all the materials (and quantity) needed

- Discuss and identify the appropriate age and grade for which it can be used
- Reflect and organized how certain activities may be combined in one lesson
- Practice and develop the model etc. and assess how much time would it require for teaching children
- Identify how the method and/or materials used may be modified for better results according to target students
- Arrange the activities in a sequential order for ease of execution
- Determine what prior skills and knowledge are necessary before beginning the STEAM activity
- Develop a detailed lesson plan to be executed practically in microteaching

COURSE CONTENT

Week	Topics	
1	**Design Thinking Process in STEAM** + STEAM Vocabulary and Engaging Questions. Engaging Questions That Promote STEAM Explorations Strategies for Creating a STEAM-Focused Classroom Environment	
2	**STEAM Literacy: The Nature of STEAM** Teaching and Learning + Build shapes that we see around us every day	
3	**Engineering A Spider Web** STEAM Skills Presented in this Lesson: Science: Students will explore spider webs, the spider life cycle, and investigate why spiders are important to the ecosystem. Technology: Students will use technology to investigate, explore, and document learning. Art: Students will use different coloured yarn and construct symmetrical patterns in the spider web. Engineering: Students will engineer a spider web and construct a hands-on spider life cycle. Math: Students will explore geometric shapes and lines, patterns, spatial concepts, and mathematical relationships in the construction of the spider web and life cycle.	

4	**Parts of a Plant Cell: making a model** STEAM Skills Presented in this Lesson Plan: TECH: Use digital technology to research, document learning, and support inquiry and solution based learning. ARTS and ENGINEERING: Use creative expression to design, develop, and construct a 3-D plant cell model. SCI: Develop and use a model to describe the function of a plant cell. Learning the components of a plant cell.Tactile and Visual Design of a plant cell. MATH: Measurement and design of the shapes of the organelles and deciding the proportion and size of each.	
5	**Making Parachute Men** STEAM Skills Presented in this Lesson Plan: Math: Estimation and prediction of lengths, Number concepts Science: Shape Relationships, Sensory Development (Tactile and Visual) Art: Same/Different, symmetry, cutting equal lengths of yarn Technology: Connections between familiar and new knowledge, watching videos and documenting the construction of the model Engineering: Inquiry and Problem Solving about aerodynamics and balance	
6	**Weather and Climate: Design a sun blocking structure** STEAM Skills Presented in this Lesson: Science: Students will explore the causes of weather and climate changes. Technology: Students will use technology to investigate, explore, and document learning. Art: Students will make season bottles by using different materials aesthetically. Engineering: Students will engineer a sun blocking structure, which is symmetrical, balance and practical to implement Math: Students will explore geometric shapes and lines, patterns, spatial concepts, and mathematical relationships in the construction of the sun blocking structure	
7	**Early Maths: Addition, Subtraction and Fractions** STEAM Skills Presented in this Lesson: Science: Shape Relationships, concept of whole and part, Sensory Development (Tactile and Visual) when handling realia Technology: students will use different apps and software in order to practice Addition, Subtraction and Fractions Art: Students will make models with paper plates, cards, cups, paints and playdough to learn the concepts Engineering: Students will learn to divide plates in symmetrical shapes to depict fractions using straight lines to cut through them. Developing spatial concepts	

	Math: Number concepts, Students will learn mathematical relationships in Addition, Subtraction and Fractions	
8	**Activities with Water for Math and Science +** Gravity: Downhill Race STEAM Skills Presented in this Lesson: Science: Students will experiment with different materials and see their relationship with water. They will explore the concept of speed and acceleration. Technology: Students will use technology to investigate, explore, and document learning. Art: Students will colour and paint worksheets to record observations. Engineering: Students will engineer two structures/ circular models for the downhill race experiment, learning about setting up the space for its execution., Math: Students will explore angles, height and weight when studying speed and gravity	
9	**Understanding Mass and Volume + Weight Concepts** STEAM Skills Presented in this Lesson: Science: Students will observe and collect descriptions of the world by collecting data. They will discover constants in nature. Technology: Students will use technology to investigate, explore, and document learning. Art: Students will manipulate materials with different textures; and colour and paint worksheets to record observations. Engineering: Students will Use a ruler or straightedge to draw the best straight line through the dots that represent each of the materials on the graph. Math: Students will explore angles and develop Graphs to reveal patterns that lead to a deeper understanding of phenomena	
10	**Engineering Basics: Stick tower and Popsicle Stick Furniture + Building Bridges** STEAM Skills Presented in this Lesson: Science: Students will study the nature, uses and functions of bridges and the natural geographical features and landforms where bridges are needed. Technology: Students will use technology to investigate, explore, and document learning. Art: Students will develop a sense of symmetry and may decorate the models aesthetically Engineering: Learn about structural engineering, creative design and project efficiency. Introduction to woodwork. Bridge shapes and structures. Math: Students will explore angles and develop a concept of perpendicular and parallel. Computation of lengths and numbers. Explore shapes which make the strongest bridges	

11	**Understanding Momentum: Newton's Cradle** STEAM Skills Presented in this Lesson: Science: Students will study the demonstration of a scientific principle called the conservation of momentum. Technology: Students will use technology to investigate, explore, and document learning. Art: Students will Color the craft sticks first and learn about capillary action when making a tie-dyed Newton's Cradle. Engineering: Learn about structural engineering. The model demonstrates a concept called tolerances Math: Students will explore angles and develop a concept of perpendicular and cube structure. Computation of lengths and numbers.	
12	**Desktop Catapult** STEAM Skills Presented in this Lesson: Science: Students will experiment by testing different weighted items to see which ones fly farther. Learn about potential energy and projectile motion Technology: Students will use technology to investigate, explore, and document learning. Art: Students will Color/paint the craft sticks first. Learn shade mixing. think creatively about designing.their model Engineering: Learn about machine making. They will build 2-3 different catapults and see which one works better or if one works better with different materials Math: Students will explore angles. Computation of lengths, width and numbers. Track the arch made by projectiles.	
13	**Teaching Physiology Through The Robotic Hand** STEAM Skills Presented in this Lesson: Science: Students will study physiology, muscle movement and force. Technology: Students will use technology to investigate, explore, and document learning. Art: think creatively about designing their model. Display craftsmanship in constructing the model Engineering: Introduction to robotics. Learn about what mechanics are involved in designing the model. Math: Computation of lengths, width and numbers.Students will explore angles.	
14	**Making a Propeller Car** STEAM Skills Presented in this Lesson: Science: Introduction to electronics. Making a circuit, using a DPDT switch. Use of a propeller fan. Technology: Students will use technology to investigate, explore, and document learning.	

	Art: Think creatively about designing their model. Display craftsmanship in constructing the model Engineering: Introduction to electrical engineering and robotics. Learn about what mechanics are involved in designing the model. Math: Computation of lengths .Students will explore angles.	
15	**Final Assessment: Microteaching and Presentation of final STEAM Project**	
16	**Final Assessment: Microteaching and Presentation of final STEAM Project**	

RECOMMENDED REFERENCE BOOKS

1. The STEAM Revolution: Transdisciplinary Approaches to Science, Technology, Engineering, Arts, Humanities and Mathematics, Armida de la Garza, Charles Travis, Springer International Publishing, 2019
2. Awesome Science Experiments for Kids: 100+ Fun STEAM Projects and Why They Work, Crystal Chatterton, Rockridge Press, 2018
3. The STEAM Team: Simple Science Explained, Lisa Burke, Robert Winston, DK Publishing, 2018
4. Crafty Science: More than 20 Sensational STEAM Projects to Create at Home, Jane Bull, DK Publishing, 2018
5. From STEM to STEAM: Using Brain-Compatible Strategies to Integrate the Arts, David A. Sousa, Corwin Publishers, 2013
6. STEAM Education: Theory and Practice, Myint Swe Khine, Shaljan Areepattamannil, Springer International Publishing, 2019
7. Emerging Technologies for STEAM Education: Full STEAM Ahead, Xun Ge, Dirk Ifenthaler, J. Michael Spector (eds.), Springer International Publishing, 2015
8. Promoting Language and STEAM as Human Rights in Education: Science, Technology, Engineering, Arts and Mathematics, Zehlia Babaci-Wilhite, Springer Singapore, 2019
9. Teaching STEM Literacy A Constructivist Approach for Ages 3 to 8 by Juliana Texley, Ruth M. Ruud, 2018
10. Simple STEAM: 50+ science technology engineering art and math activities for ages 3 to 6, Forestieri, Marnie, Mitchell, Debby, Gryphon House, 2018

RESOURCE WEBSITES:

SCIENCE AND ENGINEERING RESOURCES:

- https://21centuryedtech.wordpress.com/2014/02/17/stem-education-over-25-steam-links-filled-with-resources-and-information/
- https://www.exploratorium.edu/snacks
- https://www.teachengineering.org/
- https://www.bigdiyideas.com/35-fun-diy-engineering-projects-kids/
- https://frugalfun4boys.com/learn/stemactivities/
- https://frugalfun4boys.com/physics-science-experiments-for-elementary-aged-kids/
- https://www.garrettsbridges.com/photos/popsicle-bridges/basic-arch-popsicle-stick-bridge/

- https://www.education.com/science-fair/
- http://www.technologystudent.com/index.htm
- http://teachersareterrific.com/
- https://teachersareterrific.com/2020/06/easy-solutions-for-assigning-jobs-in-stem.html
- https://teachersareterrific.com/2020/06/5-best-challenges-according-to-the-students.html
- https://teachersareterrific.com/2020/06/five-best-challenges-according-to-the-teacher.html
- https://www.kcedventures.com/explore-science
- https://www.123homeschool4me.com/24-simple-machine-projects-for-kids_97/
- https://teachbesideme.com/elementary-stem-projects/
- https://www.wikkistix.com/lesson-plans/stem-education-lesson-plan-spiders/

MATH RESOURCES:

- https://www.mathplayground.com/
- https://www.khanacademy.org/
- http://motionmathgames.com/
- https://teacher.desmos.com/activitybuilder/custom/592dcdc83822970b36e1361d
- https://shakeuplearning.com/blog/ways-use-technology-math-classroom/
- https://www.openmiddle.com/
- https://blogs.edweek.org/edweek/global_learning/2017/09/5_math_technology_tools_to_engage_students.html
- https://pages.sumdog.com/
- https://popplet.com/
- https://get.plickers.com/
- https://www.haikudeck.com/
- https://www.ixl.com/math/

Year-IV

SEMESTER VII

Course code	COURSES	credit hrs
CoC / B.Ed.-Reading 401	Content Course – III (from selected discipline – I) Reading Specialization **Reading Assessment**	3
CoC /, B.Ed.-Math 402	Content Course – III (from selected discipline – II) **Mathematics III OR**	3 OR
CoC /B.Ed.-Sci 403	**Integrated Science III**	3
PeC / B.Ed.-Reading 401	Pedagogy– I (Methods of Teachings related to specialization – I) Reading Specialization **Teaching Reading**	3
PeC / B.Ed.-Math 402	Pedagogy – II (Methods of teaching related to specialization – II) Continue with any one of the following specialization chosen in previous semester • Teaching of Mathematics II OR	3 OR
PeC / B.Ed.-Sci 403	• **Teaching of Science II**	3
PC / B.Ed.-401	Research Methods in Education (Professional)	3
TP / B.Ed.- 401	Teaching Practice (Short Term) Reading Specialization	3
	Total Credit Hours	18

PC / B.Ed.-401	RESEARCH METHODS IN EDUCATION (PROFESSIONAL)	3

COURSE OBJECTIVES

At the end of this course, Student Teachers will be able to:

describe the concept of educational research
identify different models and approaches of action research
identify research problems and develop research questions
develop a research proposal.

SUGGESTED TEACHING APPROACHES

This course is designed to prepare B.Ed. (Hons) candidates to be research professionals and to enhance their professional practice. Student Teachers will engage in a critical analysis of different research work and relate it to their own context. The units provide Student Teachers with the opportunity to engage with the research literature and to establish how different research techniques help improve the classroom experience.

The course Research Methods in Education is designed to orient Student Teachers to the concept and methods of research in education. In particular, the course focuses on action research, and it aims to equip Student Teachers with the necessary skills to plan and conduct action research in an educational setting. Action research is a form of research that can be used to improve professional practices in the classroom. It can help in both personal development and institutional improvement. This course will also help Student Teachers to write research proposals and research reports and to create presentations to discuss their work.

RECOMMENDED ASSESSMENT

A variety of assessments will be used in the course, including classroom presentations, assignments, and midterm and final examinations.

COURSE CONTENT

Unit 1: Introduction to research

- Definition of research
- Definition of educational research
- Research as a scientific method
- Significance of educational research
- Principles of educational research

Unit 2: Research methods in education

- Different research methods in education
- Qualitative research Action research
- Case study
- Ethnography
- Narrative research
- Quantitative research Survey
- Experimental research
- Mixed research Action research
- Programme evaluation

- Research tools
- Sampling
- Research process

Unit 3: Action research

- Nature of action research
- History of action research
- Difference between action research and other types of research
- Models of action research
- Approaches to action research

Unit 4: Research tools in action research

- Questionnaire
- Interview
- Interview (continued)
- Observation
- Rating scale
- Inventories

Unit 5: Data analysis

- Types of data
- Validity of data
- Reliability of data
- Data analysis

Unit 6: Developing a research proposal

- Parts of a research proposal
- Developing a research proposal

Unit 7: Writing a report

- A research report
- Components of a research report
- Sample report
- Summing up
- **Conclusion**

SUGGESTED REFERENCE BOOKS

1. Creswell, J. W. (2012). *Educational research: Planning, conducting and evaluating quantitative and qualitative research*. Boston: Pearson Education.
2. Lorraine R. Gay, Geoffrey E. Mills, Peter W. Airasian Educational Research Competencies for Analysis and Applications 10th Edition
3. Gay, L. R. (1987). *Educational research: Competencies for analysis and application*. London: Pearson Longman Publishing.
4. Jorgensen, D. L. (1989). *Participant observations: A methodology for human studies.* Thousand Oaks, CA: Sage Publications.
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6. Miles, M. B., & Huberman, A. M. (2006). *Qualitative data analysis: An expanded sourcebook.* London: Sage Publications.
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8. Wengraf, T. (2011). *Qualitative research interviewing: Semi-structured, biographical, and narrative methods*. London: Sage Publications.
9. Yin, R. K. (2008). *Case study research: Design and methods*. Thousand Oaks, CA: Sage Publications.
10. W. Lawrence Neuman-Social Research Methods_ Qualitative and Quantitative Approaches-Pearson Education Limited (2013)

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Mahboob, A. (2017). English medium instruction in higher education in Pakistan: Policies, perceptions, problems, and possibilities. *English medium instruction in higher education in Asia-Pacific*, 71-91.
Ahmad, I., Ali, A., Khan, I., & Khan, F. A. (2014). Critical Analysis of the Problems of Education in Pakistan: Possible Solutions. *International Journal of Evaluation and Research in Education*, *3*(2), 79-84.

TP/ B.Ed - 401	TEACHING PRACTICE (SHORT TERM) READING SPECIALIZATION PRACTICUM	3

COURSE OBJECTIVES

Reading is a fundamental component of learning. Children who do not learn to read at grade level by the end of grade 1 tend to fall behind in all other areas of cognitive development. During the last two decades remarkable efforts have been made by educators in developing strategies for teaching reading specifically in early grades. Reading Practicum course aims to equip student teachers with functional knowledge of various strategies of teaching reading, diagnosing reading difficulties, promoting reading culture in the school, assessing reading skills of the children and supporting them as per their needs.

The course intends to provide opportunities for students to relate theory with practice in real classrooms. The course helps student teachers to use appropriate instructional strategies to address the diverse needs of students. It also supports student teachers to diagnose reading difficulties in children and prepare remedial strategies for their improvement. The course also encourages student teachers to develop teaching and learning material as per their local context to improve the reading skills of children.

SUGGESTED TEACHING APPROACHES

Pre Requisites: Successful completion of Reading content /specialization courses

The practicum is a three-credit course. As this is a practical course, one credit requires additional hours of practice. It is recommended that student teachers spend approximately 30 days/6 weeks on the school placement in Reading Practicum.

RECOMMENDED ASSESSMENT

Practicum Portfolio

COURSE CONTENT

This course includes two important parts:

- **A placement in early grades**
- **Weekly seminar**

School placement

The reading practicum experience in semester 7 provides student teachers with carefully sequenced and supervised field experiences in specifically reading areas of the elementary curriculum. Opportunities to work with children at grade levels (grade I&II), classroom, are provided .Student teacher, will work with children from a variety of backgrounds and with different capabilities. Initially STs will conduct formal observations and complete a variety of school-based assignments, but gradually they will take more active role, with increased responsibilities in each classroom.

During the Reading practicum, it is expected to critically select and use appropriate reading materials, resources and technology, and to have opportunities to employ various classroom-management techniques and a variety of Reading Assessment techniques .Collaboration with other Student Teachers and professionals in the school setting is encouraged in order to develop team-building skills and utilization of all resources to enhance children's learning. Ideally, groups of three or four Student Teachers are placed in each school. Opportunities for peer

coaching as well as coaching by the Cooperating Teacher and a College/University Practicum Supervisor will be provided.

Seminar

The seminar that accompanies fieldwork will be facilitated by your College/ University Practicum Supervisor and is designed to link pre-service program content to classroom practice. You will have an opportunity to clarify and revise your teaching goals and beliefs about a wide range of educational issues. The primary focus of this seminar is inducting student teachers into professional practice. Habits of thinking that provide the foundation for continued growth as a teacher are as important as strategies for solving immediate classroom issues and problems.

Student Teachers will be expected to complete a variety of seminar assignments during this semester. Most, but not all, of these assignments will be directly linked in some way to your classroom experiences. For example:

 Present an analysis of your own or a peer's teaching
 Conduct observations focused on specific classroom practices or an individual child
 Try out a particular method and reflect on its success in achieving its purpose.

All of the assigned tasks are flexible enough to allow for adaptation to a wide variety of classrooms.

Course outcomes:

After completion of this practicum student teacher will be able to

 Exhibit a sound theoretical and practical knowledge of five components of reading Develop effective reading lessons plan based on curriculum and textbooks of different stages
 Develop effective lessons for improving reading and writing skills of learners from different cultural and linguistic backgrounds.
 Select and administer tools of assessment for all reading skills in different languages.
 Diagnose reading difficulties and develop remedial strategies for improving reading skills
 Create conducive environment for facilitation of reading in different languages.
 Reflect on lessons taught in terms of student learning, identify strengths and challenges of lesson in response to student learning, and plan actions for future reading lessons.
 Prepare and implement reading lesson plans in different languages

Semester outline:

The way field experiences for the Reading practicum are organized may vary from institution to institution but it is suggested to divide the semester into two parts. Part 1 of the semester covers the five courses in semester 7 (Reading Assessment, Teaching Reading, Content course of discipline 2, Pedagogy course of discipline 2 & Research methods in Education). The number of hours for direct instruction for each of the five courses is increased. Part 2 of the course includes the Reading practicum. Students spend 120 hours in the classroom.

Each college or university will have its own plan for the practicum. It may be organized in a variety of ways. Student Teachers can expect the following types of activity and progression during the Reading practicum in semester 7.

Methodology and Evaluation:

The format of this course is designed to provide opportunities to synthesize and apply literacy knowledge/foundations. Students will demonstrate their own growth in these areas through a portfolio that will include:

1. Diagnostic assessment report of the assigned children

2. Change Over Time Project: An in-depth case study of two struggling readers.
3. How print rich environment bring change in the literacy skills of children?
4. Collect samples of spellings (in Urdu or native language) of grade 1and 2 children. What are the development stages of spelling? What does the analysis of spelling tell you the knowledge of child about words and letter sound relationship? How would you design instruction to help each of the children continue to grow and develop as spellers?
5. Develop a reading kit (big books, flash cards, small stories etc.)
6. A collection of 30 reading lesson plans that demonstrates your competencies across the five international reading standards .These plan should have your self-reflections with written feedback of your supervisor and the reflections with written feedback of your supervisor and of Cooperating teachers on at least 10 lessons and 3 lessons respectively.
7. Practicum Activity Log: A log documenting 120 practicum hours, delineating how your instructional time was spent during the semester.
8. Reflective report of " Reading Practicum Learning Experiences"

Week 1: Introduction to the school and classroom context, diagnostic assessment of reading skills of assigned children

Week #1 Topics/themes

1 Introduction to the school and classroom context. o Meet with school head and cooperating teacher .This provide you with an opportunity to get to know the school, its resources, the rules, and procedures expected of you. o With support from your Cooperating Teacher; complete the following assignments: a. Assessment of reading, use reading assessment tool and assess the reading skill of the children. Make analysis of your DATA and find out how many students scored less than 50%. Recommend strategies to improve the reading skills of those children. b. Make a report of assessment c. Identify the struggling readers d. Discuss the reading improvement strategies with Cooperating Teacher e. Interview the cooperating teacher about his/her literacy instruction. Document this visit for your portfolio. f. Develop a reading kit. The reading kit should have: g. Flash cards of Urdu huroof tahajee (تہجی حروفِ), letter with vowels for word making, 5 Pictorial stories with text for grade 1 and grade 2. Different types of texts with the comprehension questions h. Prepare for the first triad meeting (you, cooperating teacher and supervisor) i. Keep a log of daily activities j. Reflect on your learning for this week

Week 2: Becoming more involved in the classroom.

Week # Topics/themes 2 Week 2:

o Assist the Cooperating Teacher and discuss with Cooperating Teacher about reading corner and print rich environment 1. Create print rich environment. Arrange soft board, walls etc. 2. Arrange a reading corner 3. Work with children struggling readers use different strategies to improve their reading skills and record your finding 4. Design and deliver 3reading lessons for 30 minutes with the help of cooperating teacher: o 1 lesson for letter identification o 1 lessons for word making o 1 lessons for read aloud 5. Choose 2 videos about literacy. Watch and write a 1-page reflection on each video. State examples of how the ideas in your reading have contributed to your literacy instruction. 6. Keep a log of daily activities 7. Reflect on your learning for this week.

Week 3, Assuming responsibilities of planning, teaching and assessing

Week # Topics/themes 3

Week 3: Assuming more responsibility as a reading teacher. 1. Design and deliver 3reading lessons for 30 minutes with the help of cooperating teacher: a. 1 lesson for phonemic awareness b. 1 lesson for word making c. 1 lessons for comprehension 2. Choose popular children 'story and make a big book. Then prepare a lesson that involves reading the big book aloud. Teach this lesson in the classroom. 3. Work with children struggling readers, use different strategies to improve their reading skills and record your finding. 4. Collect samples of spellings (in Urdu or native language) of grade 1and 2 children. What are the development stages of spelling? What does the analysis of spelling tell you the knowledge of child about words and letter sound relationship? How would you design instruction to help each of the children continue to grow and develop as spellers? 5. Reflect on your learning for this week

Week 4: Assuming more responsibility as a reading teacher.
Week # Topics/themes 4
Week 4: Assuming more responsibility as a reading teacher. 1. Design and deliver 6 reading lessons for 30 minutes with the help of cooperating teacher: a. 1 lesson for phonemic awareness b. 1 lesson for word making c. 1 lessons for comprehension d. 1 lesson of story telling 2. Choose popular children 'story and make a big book. Then prepare a lesson that involves reading the big book aloud. Teach this lesson in the classroom. 3. Work with children struggling readers, use different strategies to improve their reading skills 4. Community Assignment: Meet with the parents of the grade one or two children with cooperating teacher and advocate them about the importance of strong phonic program in early grades. Share a few techniques to them, which they can practice with their children at home. Write a report of your task. 5. Ask one of your peers to observe your one lesson and ask her/him to r share the findings 6. Prepare for the 2nd triad meeting (you, cooperating teacher and supervisor) 7. Reflect on your learning this week.

Week 5: Assuming more responsibility as a reading teacher.
Week # Topics/themes 5
Week 5: Assuming more responsibility as a reading teacher. 1. Design and deliver 6 reading lessons for 30 minutes with the help of cooperating teacher: a. 1 lesson for phonemic awareness b. 1 lesson for word making c. 1 lessons for comprehension d. 1 lesson of story telling 2. Choose popular children 'story and make a big book, then prepare a lesson that involves reading the big book aloud. Teach this lesson in the classroom. 3. Work with children struggling readers, use different strategies to improve their reading skills 4. Observe a lesson of your peer and share your findings 5. Creative writing by young children: Give an opportunity to the children of grade one, two and to write their own stories with illustrations. Collect their stories and share with head teacher. Display all these material in an exhibition at school. Keep a few samples in your portfolio. Write a report of your task. 6. Community Assignment: Meet with the parents of the grade children and advocate them about the importance of strong phonic program in early grades. Share a few techniques to them which they can practice with their children at home. Write a report of your task. 7. Reflect on your learning this week.

Week 6: Assuming more responsibility as a reading teacher.
Week # Topics/themes 6
Week 6: Design and deliver 6 reading lessons for 30 minutes with the help of cooperating teacher: o 1 lesson for phonemic awareness o 1 lesson for word making o 1 lessons for comprehension o 1 lesson of story telling 1. Choose popular children 'story and make a big book,

prepare a lesson that involves reading the big book aloud. Teach this lesson in the classroom. 2. Make in-depth case study of two struggling readers). 3. Re-asses the reading skills of struggling readers and compare it with the pre-assessment results that you completed in the first week of reading practicum .Make a report to share your findings. 4. Reflect on your learning this week. 5. Do a self-assessment of reading practicum 6. Prepare for the final triad meeting .(you, cooperating teacher and supervisor) 7. Prepare a professional "Reading Practicum" portfolio, addressing the International reading standards.

The Practicum Seminar

The seminar runs parallel to your experience at school. Student Teachers may expect to discuss issues such as:

- Practical issues of teaching and learning in their field placements
- Language learning
- Reading difficulties
- Most challenging components of reading to teach in early grades, experience sharing
- Selecting and using assessments of reading
- Creating print rich environments that support children in improving reading skills
- Role of parents and community in the development of reading skills of children

Grading Policy:

Grading of this course follows the university's policies .This will be explained by the university practicums supervisor early in the course.

General Information about the Course

You will be provided with specific and detailed information about every part of your practicum experience. The following will give you a general idea of what to expect this semester.

Roles and expectations of Practicum Triad Members

Every practicum experience is guided by three critical participants:

1) the student teacher,
2) the cooperating teacher, and
3) the college /university supervisor

What happens in the classroom and how it is interpreted will depend on the views of each member of the triad. It is important for each member of the triad to negotiate common expectations for roles and responsibilities. If expectations are clear and understood by each member, the experience is likely to be more satisfactory to all.

The triad should meet together several times during the semester:

1) At the beginning, when roles and relationships are discussed
2) At midpoint, when performance is discussed
3) At the conclusion of the experience, as a final evaluation is made.

Depending on the challenges met during the practicum experience, the triad may feel that it is important to meet more frequently.

The Cooperating Teacher will guide the day-to-day work of the Student Teacher, providing feedback and initiating the Student Teacher into the life of the profession. This will include discussions of how planning, teaching, and assessment are made.

The Cooperating Teacher will communicate regularly with the College/University Supervisor. The purpose of supervision is to support good communication between the Student Teacher and Cooperating Teacher. Communication and collegial relationships are important to the Student Teacher and other triad members in their professional development.

The Supervisor will also provide feedback on all aspects of the Student Teacher's development, including planning and teaching.

Summary of the Role of Student Teacher

The Student Teacher should have maximum opportunity to perform to the degree that his or her personal interests, abilities, and individually allow.

There are three major aspects to the Student Teacher's role during the semester:

1. His or her activities in the classroom, school, and community
2. Participation in the weekly practicum seminar
3. Continued reflection and documentation of professional growth.

The Student Teacher should become involved in the instructional program of the classroom as soon as possible. The experience will begin with observation. Time spent in observation will vary in length according to the situation. The Student Teacher will gradually assume more responsibility for planning and instruction through activities such as:

 Assisting individual students
 Working with small groups
 Taking responsibility for planning and teaching sections of lessons
 Assisting the Cooperating Teacher with planning and teaching complete lessons under the Cooperating Teacher's guidance and being open to receiving feed- back. (These should be lessons that are part of the ongoing curriculum, not lessons planned off-site and that do not relate to what is appropriate in the classroom.)
 Assuming overall management for part of the day
 Assuming overall management of the classroom.

During the semester, Student Teachers will engage in a variety of experiences in their classrooms. Attending teacher's meetings, parent meetings, and the like are encouraged, when possible.

The Student Teacher is expected to play an active role in deciding how he or she will take on new activities and in assessing her or his effectiveness.

The Student Teacher is expected to participate as a regular staff member of the school in terms of professional behaviour.

Summary of the Role of the Cooperating Teacher

The Cooperating Teacher is expected to:

 Share school and classroom policies and procedures, the curriculum, the daily/semester schedule, and provide the Student Teacher with a class list, school textbooks, teacher's guides, etc.
 Work with other members of the practicum triad to set up a program for the Student Teacher's gradual assumption of all classroom responsibilities, building up to the Student Teacher taking on the planning, teaching, and assessing of at least three subjects. This plan should include provisions for Student Teacher involvement in all instructional tasks as well as non-instructional tasks such as home-school communication, parent conferences, and staff development.
 Work with the Student Teacher and College/University Practicum Supervisor to set up a lesson plan format to be used by the Student Teacher. The student is required to provide the Supervisor with comprehensive written plans prior to each formal observation. Cooperating Teachers may also want to require written plans in addition to those required by the supervisor; for example, for sections of lessons.
 Formally and informally observe and provide feedback to the Student Teacher (using the forms provided in the handbook).

 Meet daily to discuss classroom events and make plans.
 Provide assessment to the College/University Supervisor and participate in triad meetings to discuss the Student Teacher's performance.

Summary of the role of the College/University Practicum Supervisor

The College/University Practicum Supervisor is the official representative of the college or university. Therefore, the Supervisor has responsibility for the supervision of Student Teachers, serves as the liaison between the college or university and the cooperating schools' personnel, and helps establish and maintain positive relationships between the two institutions. Through classroom observations, conferences, and the weekly seminar, the Supervisor will:

 Make at least four one-hour observation visits throughout the semester, with at least two of these visits followed by a three-way conference involving the Student Teacher, Cooperating Teacher, and College/University Supervisor. The focus of these visits will depend on the needs of individual Student Teachers.

 Guide entry of the Student Teacher into the profession through discussion of issues of professional practice, providing a guided seminar experience, and conferring with the Student Teacher before and after classroom observations and giving feedback on teaching to the Student Teacher.

SUGGESTED REFEERNCE BOOKS

1. Louis Cohen, Lawrence Manion-A guide to teaching practice -RoutledgeFalmer (2004)
2. Practicum Handbook Semester (Cooperating Teacher)-English
3. Practicum Handbook Semester (Student Teacher) English
4. Practicum Handbook Semester (Supervisor) English
5. Practicum Handbook Semester (Cooperating Teacher) - Urdu
6. Perry, R. (2002). *Teaching practice: A guide for early childhood students*. Routledge.
7. Gower, R., Walters, S., & Phillips, D. (1983). *Teaching practice handbook*. London: Heinemann.
8. Cakmak, M. (2019). *Dimensions and Emerging Themes in Teaching Practicum*. Routledge.
9. Townsend, T., & Bates, R. (2007). *Handbook of teacher education: Globalisation, standards and professionalism in times of change*. Springer.
10. Baird, B. N., & Mollen, D. (2018). The internship, practicum, and field placement handbook: A guide for the helping professions. Routledge.
11. National Professional Standards for Teacher Education in Pakistan

WEB RESOURCES

Allen, J. M. (2011). Stakeholders' perspectives of the nature and role of assessment during practicum. Teaching and teacher education, 27(4), 742-750.

White, S., & Forgasz, R. (2016). The practicum: The place of experience?. In International handbook of teacher education (pp. 231-266). Springer, Singapore.

Mudra, H. (2018). Pre-service EFL teachers' experiences in teaching practicum in rural schools in Indonesia. The Qualitative Report, 23(2), 319-344.

SEMESTER VIII

Course code	COURSES	credit hrs
PC/ B.Ed.-402	School Management (Professional)	3
PC /B.Ed.-403	Test Development and Evaluation (Professional)	3
PC /B.Ed.-404	Statistics in Education and Data Analysis (Professional)	3
PC/ B.Ed.-405	Research Project (Professional)	3
TP/ B.Ed.-402	Teaching Practice (Long Term)	6
	Total Credit Hours	18

PC/ B.Ed-402	SCHOOL MANAGEMENT (PROFESSIONAL)	3

COURSE OBJECTIVES

1. Reconceptualize school as a system and recognize teachers' lead role in its structure and functions at various levels
2. Identify elements of transformational leadership and how teachers can contribute to the professional development of a school community
3. Critically analyse communication patterns between different groups within a typical school system and participate in different classroom-based and field-based activities to develop their core skills in communication within the school community
4. Apply their roles within the context of school management to improve student learning outcomes
5. Participate in the decision-making process in school to influence change at the school and community level.

SUGGESTED TEACHING APPROACHES

This course will be taught using different teaching strategies, such as lectures, demonstrations, discussions, and brainstorming, keeping in view the nature of the topic. Interactive techniques and hands-on activities, both within and outside the classroom, will also be used.

RECOMMENDED ASSESSMENT

A variety of assessments will be used in the course, including classroom presentations, assignments, and midterm and final examinations. Reflections, case studies, debates, quizzes, two major assignments on related topics, two presentations, a group project and quizzes besides the mid and final term examination.

COURSE CONTENT

Unit 1: The school as an open system

- Systems thinking
- Reconceptualize the concept of a 'good school'
- Analyse Student Teachers' roles in the existing practices at various levels of the school structure
- Conceptualize school as a system (input, output, and process)
- School as an organizational system
- School as a social system
- School as an open system
- Suggested readings

Unit 2: School leadership and management

- The teacher as leader: As an instructional leader (strategic planning, vision, and mission)
- As an agent of change or a transformational leader
- Human relationships: The base for educational leadership

Unit 3: Core management skills for teachers

- Communication skills
- Communication process
- Directions of communication
- Barriers to communication

- Overcoming barriers to communication
- Interpersonal skills
- Managing conflict with the school community
    - School record management (concepts and principles)
    - General records (about school, staff, and students)
    - Financial records
    - Educational records
    - Equipment records
    - Correspondence records
    - Accounts

Unit 4: The school as a learning organization and teamwork in the workplace

- Conceptualizing the school as a learning organization
- The establishment and smooth running of school councils
- Shared leadership
- Shared decision-making: Empowering teachers
- Managing cooperation within the school
- The relationship of the school with society
- Teamwork
- Considering schools as organizations and communities
- Leading purposeful change in schools: People, power, and culture

Unit 5: School plant management

- School plant management
- Building size, shape, design, construction, and maintenance
- Managing the school library, laboratories, and the playground
- The school environment (common principles)
- Scheduling and managing day-to-day activities, considering the available resources
- Planning and managing co-curricular activities

SUGGESTED REFERENCE BOOKS

1. Hoy, W. K., & Miskel, C. G. (2008). *Educational administration: Theory, research, and practice*. Boston: McGraw-Hill,
2. Shami, P. A., & Waqar, A. (2007). *School management and supervision*. Islamabad: Academy of Educational Planning and Management, pp. 3–5.
3. Busher, H. (2006). *Understanding educational leadership: People, power and politics*. New York: Open University Press, pp. 1–11, 148–162.
4. Sidhu, K. S. (2005). *School organization and administration*. New Delhi: Sterling Publishers, pp. 53–61.
5. Razik, T. A., & Swanson. A. D. (2010). *Fundamental concepts of educational leadership and management.* Upper Saddle River, NJ: Pearson,
6. Northhouse, G. (2007). *Leadership: Theory and practice*. New Delhi: Sage Publications, pp. 175–186.
7. Lunenburg, F. C., & Ornstein, A. C. (2007). *Educational administration: Concepts and practices.* Belmont, CA: Wadsworth Publishing Company, pp. 176–196.
8. Khan, D. S. (2009). *Educational management*. Lahore: Majeed Book Depot

9. Dunham, J. (2003). *Developing effective school management*. Routledge.
10. Alava, J., Halttunen, L., & Risku, M. (2012). Changing school management. Helsinki: Finnish National Board of Education.

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Alava, J., Halttunen, L., & Risku, M. (2012). Changing school management. Helsinki: Finnish National Board of Education.
Farah, A. I. (2013). School management: Characteristics of effective principal. *International journal of advancements in research & technology*, *2*(10), 168-174.
OLIVEIRA, A. C. P. D., & CARVALHO, C. P. D. (2018). Public school management, leadership, and educational results in Brazil. *Revista Brasileira de Educação*, *23*.

PC /B.Ed-403	TEST DEVELOPMENT AND EVALUATION (PROFESSIONAL)	3

COURSE OBJECTIVES

1. Describe and explain types of tests including their advantages and limitations
2. Differentiate and apply bloom's and structure of observed learning outcomes (solo) taxonomies for test construction
3. Describe the role of classical, item response, and generalizability theory in test development
4. Explain the characteristics of an effective test
5. Construct tests systematically
6. Use a variety of essential assessment strategies
7. Describe and use evaluation to improve learning, teacher performance, and school performance based on value added.

SUGGESTED TEACHING APPROACHES

There will be a variety of learning and teaching approaches, such as interactive lectures, classroom discussions, presentations, and role play. To equip Student Teachers with testing and evaluation skills, there will be practical exercises in test construction, administration, and analysis. Peer teaching should be used regularly. Active learning strategies, including pair and group work, should also be used regularly.

Instructors and Student Teachers should integrate this course with other courses, including thesis or project work; adapt the course to personal interests, knowledge, experiences, and responsibilities; and design and engage in assignments with sufficient depth and breadth to be useful in other courses and their teaching career.

Student Teachers are expected to explore and apply educational software and other test development and evaluation resources while engaging in a critical examination of educational issues related to testing, assessment, and evaluation.

RECOMMENDED ASSESSMENT

critical reflections on readings

• independent learning relating to role of test development and evaluation

• group and individual presentations

• role play and demonstration of technology use

• group tasks

• classroom participation and attendance.

The midterm and final examinations will both be 1.5 hours long and include multiple-choice, short answer, and essay questions. The midterm will cover the first seven weeks, and the final exam will cover the remaining weeks.

Rubrics will be developed in class to assess each assignment.

COURSE CONTENT

Unit 1: Introduction to testing

- Concepts of testing
- Testing
- Kinds of tests
- Teacher-made tests
- Standardized tests

- Benefits and limitations of tests
- Concept of taxonomy in testing
- Using Bloom's Taxonomy in test development
- Using SOLO Taxonomy in test development

Unit 2: Characteristics of a good test

- Concept of a good test
- Reliability of tests
- Practice session to calculate reliability of tests
- Validity of tests
- Evaluating test items based on their discrimination power
- Utility of a test

Unit 3: Steps of test construction

- Determining the behaviours to be assessed
- Planning the test
- Ensuring content validity (course coverage, concept coverage, learning outcomes coverage) through a table of specifications
- Constructing a table of specifications based on Bloom's Taxonomy
- Constructing a table of specifications based on SOLO Taxonomy
- Writing good MCQs, and constructing tests with MCQs based on a table of specifications
- Reviewing peer's tests and scores
- Performing item analysis (difficulty, discrimination, fairness)
    - Constructing short answer questions Marking guides for short answer questions
    -
    - Constructing essay questions and tests Developing model answers and marking schemes for essay questions

Unit 4: Essential assessment strategies

- Classroom observations What is the purpose of classroom observation?
- Planning and preparing for observation
- Typical observation formats
- Deriving results from the observation by developing rubrics
- Assignments and presentations Your intended audience
- Format, structure, and submission requirements
- Grading criteria
- Projects Definition of a project
- Tasks versus tests
- Five features of a project
- What makes a project successful?
- Phases of a project
- How to assess projects and use them for evaluation
- Double marking, interrater reliability, and the Spearman–Brown prophecy formula
- Oral questioning Purpose of questioning (e.g. feedback for improving teaching and learning)
- Guidelines for questioning

- Peer appraisal 'Guess who' techniques
- Socio-metric techniques
- Interview strengths and weaknesses Interview format
- Portfolio assessment Two types of portfolios (increasing breadth, increasing depth)
- Steps in the portfolio assessment process
- Computer-assisted testing and the generation of parallel forms for the measurement of change

Unit 5: Evaluation and accountability based on value addition

- Concept of evaluation Using evaluation for different purposes, including teacher and student evaluations

- Accountability and evaluation
- Teacher accountability
- Textbook evaluation Concept of textbook evaluation
- How to evaluate a textbook
- What are the basic things to consider in textbook evaluation?

- Concept of course evaluation How and why to evaluate a course

- Designing tools for evaluating teachers, courses, and textbooks
- Review of concepts relating to tests, testing, and evaluation
- Review of the theories of test construction
- Review of concepts relating to evaluation

SUGGESTED REFERENCE BOOKS

1. Cohen, R., & Swerdlik, M. (2009). Psychological testing and assessment: An introduction to tests and measurement (7th ed.). Columbus, OH: McGraw-Hill.
2. Gardner, J. (2006). Assessment and learning. Thousand Oaks, California: Sage Publications.
3. Miller, M., Linn, R,. & Gronlund, N. (2009). Measurement and assessment in teaching (10th ed.). Upper Saddle River, NJ: Pearson.
4. Kline, T. J. B. (2005). Classical test theory: Assumptions, equations, limitations, and item analyses. In T. J. B. Kline (Ed.), Psychological testing: A practical approach to design and evaluation (pp. 91–106). Thousand Oaks, CA: Sage Publications. Available from: http://www.sagepub.com/upm-data/4869_Kline_Chapter_5_Classical_Test_ Theory.pdf
5. Educational Testing and Measurement Classroom Application and Practice by Tom Kubiszyn, Gary D. Borich
6. Forlin, Chris, and Tim Loreman. Measuring Inclusive Education. , 2014.
7. Koretz, D. (2008). *Measuring up: What educational testing really tells us*. Harvard University Press.
8. Kellaghan, T., & Stufflebeam, D. L. (Eds.). (2012). International Handbook of Educational Evaluation: Part One: Perspectives/Part Two: Practice (Vol. 9). Springer Science & Business Media.

9. Michael Russell, Peter Airasian Classroom Assessment Concepts and Applications
10. Secolsky, C., & Denison, D. B. (Eds.). (2012). Handbook on measurement, assessment, and evaluation in higher education. New York Routledge.

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Zeng, J., & Wyse, A. (2009). Introduction to classical test theory. Lansing, MI: Michigan Department of Education. Retrieved from: http://michigan.gov/documents/mde/3_Classical_Test_Theory_293437_7.pdf

Baniasadi, A., Salehi, K., Khodaie, E., Bagheri Noaparast, K., & Izanloo, B. (2022). Fairness in classroom assessment: A systematic review. *The Asia-Pacific Education Researcher*, 1-19.

Mahardika, N. I., & Zainuddin, A. (2022). Application of Formative Assessment to Analyze Students' Problem-Solving Skills. *Prisma Sains: Jurnal Pengkajian Ilmu dan Pembelajaran Matematika dan IPA IKIP Mataram*, *10*(2), 226-236.

PC /B.Ed-404	STATISTICS IN EDUCATION AND DATA ANALYSIS (Professional)	3

COURSE OBJECTIVES

On successful completion of the course, you should be able to:

1. Explain the concepts, theories and techniques of statistical analysis

2. Use statistical skills to present data and apply all relevant statistical tools in SPSS

3. Use the standard statistical techniques to interpret and analyze real problems encountered in the discipline of Education

4. What coding qualitative data means (and why it's important)

5. Different methods of coding qualitative data

6. How to manually code qualitative data to find significant themes in your data

7. Report written work which is presented coherently as per APA guidelines for Educational Research

SUGGESTED TEACHING APPROACHES

The aim of this course is to provide students with an introduction to basic statistical tools and quantitative methods that are useful in understanding the type of data encountered in Education. Importantly, it will provide a framework for approaching statistical problems, and experience in learning from associated data. The course also aims to provide familiarity with the use of SPSS software for statistical data analysis and problem solving. It also includes a section on qualitative data analysis to equip students to interpret and report all kinds of data in research.

RECOMMENDED ASSESSMENT

Practical Exercises and Practice

COURSE CONTENT

SECTION 1 – STATISTICS	
Week 1	**Introduction to Statistics** Operational Definitions Types of Data (Quantitative & Qualitative Data) Relationship of statistics with Education
Week 2	**Quantitative Data Analysis** Overview of Quantitative data analysis Types of Data (Grouped and Ungrouped data) Types of Quantitative data analysis (Descriptive and Inferential)

Week 3	**Introduction to Descriptive Stats** Measures of central tendency (Mean, Mode, Median) Frequency distribution & Normal curve Computing cumulative frequency & Percentile
Week 4	Measures of Dispersion (Range, Variance, Standard Deviation) Symmetric and Skewed Data Graphical methods: bar graph, histograms graphs
Week 5	**Introduction to Inferential Statistics** Sample Vs. Population Types of inferential test (Parametric and non-Parametric tests)
Week 6	**Parametric tests** Overview of types of parametric tests **T Test** Types of T Test (Dependent, Independent and Paired T Test)
Week 7	**ANOVA** Hypothesis construction in ANOVA Types of ANOVA (one-way and two-way ANOVA)
Week 8	Correlation & Multiple Regression **Reliability Analysis** **Factor Analysis**
Week 9	**Non- Parametric tests** Overview of types of non- parametric tests (Chi square, Mann–Whitney U test) Difference between a parametric and nonparametric test
Week 10	**Chi Square** Hypothesis construction Data Coding and Testing
SECTION 2 - DATA ANALYSIS	
Week 11-12	**SPSS** Overview of Statistical Package for Social Sciences/ SPSS Quantitative analysis with SPSS (Descriptive analysis, correlation, t-test, ANOVA, chi-square & multiple regression)
Week 13 – 14	**Qualitative Data Analysis** Open and Axial coding Thematic Analysis
Week 15	**Reporting Result in APA style**
Week 16	**FINAL EXAM**

SUGGESTED REFERENCE BOOKS

1. Nancy Leech, Karen Barrett, George A Morgan - SPSS for intermediate statistics_ use and interpretation-Lawrence Erlbaum (2005)
2. Neil J. Salkind, Bruce B. Frey - Statistics for People Who (Think They) Hate Statistics-SAGE Publications, Inc (2019)
3. Inc_ Seventh Edition (Updated Ed
4. Pete Greasley-Quantitative Data Analysis with SPSS-Open University Press (2008)
5. SPSS Survival Manual by Julie Pallant 6th Edition
6. Arthur Griffith - SPSS For Dummies-Wiley (2007)
7. Andrew_Gelman,_Deborah_Nolan_Teaching_Statistics
8. Robert R. Pagano - Understanding Statistics in the Behavioral Sciences-Wadsworth Publishing (2008)
9. A. Bluman - Elementary Statistics - A Step-by-Step Approach-McGraw-Hill (2009)
10. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches: 2018 by John W. Creswell and J. David Creswell, Los Angeles, CA: SAGE,
11. Weyant, E. (2022). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches: by John W. Creswell and J. David Creswell, Los Angeles, CA: SAGE, 2018, $38.34, 304pp., ISBN: 978-1506386706.

WEB RESOURCES

Islam, M. A., & Aldaihani, F. M. F. (2022). Justification for Adopting Qualitative Research Method, Research Approaches, Sampling Strategy, Sample Size, Interview Method, Saturation, and Data Analysis. *Journal of International Business and Management*, *5*(1), 01-11.

Turner III, D. W., & Hagstrom-Schmidt, N. (2022). Qualitative interview design. Howdy or Hello? Technical and Professional Communication.

Bailey, J. (2008). First steps in qualitative data analysis: transcribing. *Family practice*, *25*(2), 127-131.

Stuckey, H. L. (2014). The first step in data analysis: Transcribing and managing qualitative research data. *Journal of Social Health and Diabetes*, *2*(01), 006-008.

CONTENT COURSE
I-III
(FROM SELECTED DISCIPLINE-I)
&
PEDAGOGY I
READING INSTRUCTION AND ASSESSMENT INTEGRATION)

CONTENT COURSE – I (FROM SELECTED DISCIPLINE – I)
READING SPECIALIZATION "FOUNDATIONS OF READING"

COURSE CODE: CoC/ B.Ed.-Reading 301 (SEM V)
CREDIT HOURS: 3

Course Description:

Foundations of Reading aims to provide prospective teachers with the foundational knowledge, skills and attitudes needed to support early grade learners in becoming readers. The first course of the Reading Discipline, Foundations of Reading provides prospective teachers with the opportunity to explore definitions of reading and literacy, major models used to conceptualize and study literacy development with an emphasis on major milestones in literacy acquisition. The course will explore what may affect literacy and language development, including individual differences among learners, cultural and social issues. The course also emphasizes the role of oral language in early literacy development. Prospective teachers will learn about the motivation theories related to reading as well as challenges faced by children who are learning to read especially in languages different than those spoken at home (the L1).

Course Outcomes:

After studying this course, the prospective teachers will be able to:

 Explain major concepts of reading and their significance
 Demonstrate understanding of the major milestones and processes in literacy development
 Apply knowledge about child development, with special focus on oral language development, to reading instruction processes
 Relate theories and models of reading with their instructional methods
 Plan evidence-based motivational strategies for children to become effective readers
 Summarize the range of reading and writing difficulties among young learners.
 Discuss national challenges in reading, and plan instructional strategies to address these challenges.

UNIT 1: Reading Concepts

The unit will focus on major concepts of reading and literacy, and their significance. This unit will also deal with the concept of child development with special reference to oral language development, and consider the major milestones and processes in reading development. This unit plays a significant role in giving sufficient cognitive knowledge about the process of learning to read, and the interplay between oral language development and reading/literacy.

Week # Topics/themes

1 Definitions and concept of reading
 Significance of reading
 Child Development with reference to reading abilities

2 Child development, with particular emphasis on oral language development

 Learning Process with young Learners; major milestones in the learning-to-read process
 Reading strategies and skills needed to become effective readers

UNIT 2: Perspectives of Reading

It is essential to have some historical grounding in reading development. This unit will raise awareness of the introduction of reading as a subject for academic purposes and how various movements worked in different societies. Prospective teachers will be able to compare selected approaches to literacy instruction, and challenges to literacy acquisition posed by child populations in different contexts. In light of these explorations, prospective teachers will identify reading strategies appropriate to varying Pakistani public-school contexts.

Week # Topics/themes

 Major reading movements: introduction to cognitive, socio-cultural and critical perspectives of reading development.
 Eye movement in reading (Louis Emile Javal)
 Slow reading movement (Meg Williams)
 Bottom-up and Top-down processing views of reading instruction

UNIT 3: The Development of Literacy Skills

In this unit, we will review milestones of literacy acquisition and the processes by which learners attain these milestones. Issues will be related to the nature of literacy in and out of school, the role of individual versus social dynamics in literacy learning, and the factors underlying individual differences in the rate and level of literacy growth.

Week # Topics/themes

 Pre-school years: (Early Childhood Education) Aspects of oral language and communication practices that lay a groundwork for emerging literacy
 Early Elementary years: How learners “break the code” of reading and writing, and skills that children develop to foster reading development.
 Late elementary/middle school years: children’s growing awareness of and production of, text structure, approaches to fostering comprehension and use of what one reads

UNIT 4: Reading in different Languages

Reading in different languages is important, and common among public school learners in Pakistani public schools. There are different principles, phonemes and structure of sentences and how it effects at different level in reading. This unit provides sufficient knowledge about the universal reading development process and how it can be connected with other languages

Week # Topics/themes

 Universals of reading development
 Transfer effects of L1 on L2 reading
 Difference in orthography, phonology and morphology
 Reading transfer facilitation; similarities between two languages
 Implications for reading in Urdu, Sindhi, Pashtu, Balochi, Punjabi, and English

UNIT 5: Factors Influencing Reading Development

There are many factors which influence development of reading ability. This unit will provide foundational knowledge of common reading difficulties among children learning to read. Prospective teachers will be able to discuss common reading challenges, and identify instructional practices that prevent and mediate such challenges, and enhance learning.

Week # Topics/themes

- Influence of Socio Economic Factors on Reading
- Influence of Family Background Factors on Reading
- Influence of Community Factors on Reading Cultural orientation
- School's Influence on Reading
- Influence of Developmental / Disability Factors

UNIT 6: Motivation for Reading

Motivation strategies are a tool in enhancing learner's interest in the particular task. So, this unit will provide basic knowledge about motivation theories related to reading, and how these theories can be applied in our teaching learning process. Prospective teachers will also be able to understand the connection and relationship of reading & motivation and how it different for L1, L2.

Week # Topics/themes

- Theories of motivation in relation to early grade reading
- Classroom practices that relate to reading motivation 12
- Motivation in the L1 and L2 reading classroom
- Assessing Motivation of students reading

UNIT 7: Challenges in Reading

Awareness of present reading challenges at the national and international level is essential for prospective teachers. This unit provides an introduction to international reading standards which help to assess the learners in practice. An understanding of national and international challenges in reading will learners broaden their vision and engage learners in brainstorming how these

Week # Topics/themes

- International reading standards
- International reading challenges
- National reading challenges
- Challenges of reading at school and how to address them?
- Challenges of teaching reading

UNIT 8: Developing Early Reading Programs

This unit will give appropriate information about the selection and development process of curriculum and instruction in reading. This unit will explore key principles of early reading programs, and highlight strategies that can make learning to read engaging and motivating for early grade learners. This knowledge will play a significant role in maintaining quality reading instruction.

Week # Topics/themes
- Foundations of Learning to Read
- Principles of Early Reading Programs
- Principles of Early Reading Programs (continued)
- Effective Reading Instruction: Key Components

SUGGESTED REFERENCE BOOKS

1. Cook, A. (1997). *How Well Does Your Child Read?: A Step-by-step Assessment of Your Child's Reading Skills and Techniques to Improve Them*. Career PressInc.
2. Wiener, H. S. (1996). *Any Child Can Read Better: Developing Your Child's Reading Skills Outside the Classroom*. Oxford University Press.
3. Paris, Scott G., and Steven A. Stahl, eds. Children's reading comprehension and assessment. Routledge, 2005.
4. Mindy Pasternak, Elisaveta Wrangell-Well Read 3 Student Book_ Skills and Strategies for Reading-Oxford University Press, USA (2007)
5. McGuinness, D. (2006). *Language development and learning to read: The scientific study of how language development affects reading skill*. Mit Press.
6. Breitbart, Karen M. 2005. Reading for every child comprehension, grade K
7. Elizabeth, L. (2009). Reading comprehension: Success in 20 minutes a day. *Cambridge: Cambridge University*.
8. Walpole, S., & McKenna, M. C. (2007). *Differentiated reading instruction: Strategies for the primary grades*. Guilford Press.
9. Marion_Blank (2006) The Reading Remedy Six Essential Skills That Will Turn Your Child Into a Reader-Jossey-Bass
10. Hoover, W. A., & Tunmer, W. E. (2020). *The cognitive foundations of reading and its acquisition*. Springer International Publishing.
11. Mere, C. (2005). *More than guided reading: Finding the right instructional mix, K-3*. Stenhouse Publishers.

WEB RESOURCES

Blomert, L., & Csépe, V. (2012). Psychological foundations of reading acquisition and assessment. *Framework for diagnostic assessment of reading*, 17-78.

van Wingerden, E., Segers, E., van Balkom, H., & Verhoeven, L. (2017). Foundations of reading comprehension in children with intellectual disabilities. *Research in developmental disabilities*, *60*, 211-222.

Wagner, R. K., Schatschneider, C., & Phythian-Sence, C. (Eds.). (2009). *Beyond decoding: The behavioral and biological foundations of reading comprehension*. Guilford Press.

CONTENT COURSE-II (FROM SELECTED DISCIPLINE-I: READING INSTRUCTION AND ASSESSMENT INTEGRATION)

READING SPECIALIZATION (READING DIFFICULTIES)

COURSE CODE: CoC /B.Ed.-Reading 304 (SEM VI)
CREDIT HOURS: 3

Course Description:
This course is focused on equipping prospective teachers with the knowledge, disposition and skills needed to identify learners facing reading difficulties, and to select and use research-based interventions that combine preventive and remedial approaches to addressing reading difficulties in the classroom. The course on reading difficulties orients the prospective teachers to reading difficulties students face across the curriculum. The course encompasses identification of reading difficulties in the socio-cultural context of elementary schools of Pakistan, with an emphasis on the early-grade students. In this course, prospective teachers will develop declarative knowledge (what needs to be taught and why), procedural knowledge (how to) and conditional knowledge (when, where) of reading instruction and intervention focusing on students with reading difficulties. The course is focused on high priority skills and strategies.

Course Outcomes:
By the end of the course the prospective teachers will be able to:
 Identify and explain key difficulties readers face at each major milestone
 Describe effective ways for addressing reading difficulties. Administer assessments tools to diagnose reading difficulties
 Differentiate between preventive and remedial approaches used to intervene for reading difficulties
 Analyze the role of technology assisted instruction in prevention and remedy of reading difficulties
 Plan instructional strategies that help prevent reading difficulties
 Plan whole-class, peer and remedial instruction to address reading difficulties
 Conduct a case-study to diagnose and remedy a reader's reading difficulty.
 Design Community Involvement Program to prevent and rectify reading difficulties
 Link theory with practice as reflective practitioners in elementary classrooms

UNIT 1: Introduction to Reading Difficulties
In this unit prospective teachers will explore the concept of reading difficulties, examine types of reading difficulties faced by elementary school students and identify factors that trigger or result in those difficulties. It is crucial for reading teachers to be familiar with the reading difficulties so that they may first prevent them from occurring or identify them to make a timely intervention to remove the reading difficulty.

Week # Topics/themes
 Definition of Reading Difficulties
What are Reading Difficulties and Reading Disabilities

Conceptual Definition and Differentiation between difficulties and disabilities
 Factors behind Reading Difficulties
Common factors impeding reading skill development in English, Urdu & Regional languages:
o Physical
o Cognitive
o Language (articulation, phonological factors, rote-learning, L1(regional language) and, L2 (national/official language) overlapping and confusions)
o Socio-Economic
o Socio-Cultural (family and regional school community)
o Faulty Reading habits
 Special Reading Disabilities
 Dyslexia
 Hyperlexia
 Central-auditory processing disorder (CAPD)
 Attention deficit disorder (ADD)
 Visual-processing deficit/disorder
 Types of Reading Difficulties: (English, Urdu & Regional language)
 Beginners (class 1-2), Phonemic Awareness, Phonological Awareness, Phonics, High Frequency words, Fluency, Vocabulary, Comprehension
 Intermediate (class 3-5) High frequency words, Fluency, Omission and Addition of Letters or Sounds, Vocabulary
 Advanced (class 6-8)
 Comprehension, Syntax, etc.

UNIT 2: Identification of Reading Difficulties (English, Urdu & Regional language)
This unit acquaints prospective teachers with the identification of reading difficulties in English, Urdu and regional languages. The unit highlights different difficulties in early grade readers in Pakistan. It also provides information as how to assess and identify reading difficulties by using standardized tools. It gives an opportunity for selection and administration of tools for data-led placement of the early grade readers as per their difficulty level.
Week # Topics/themes
 Rational for identifying reading difficulties and interventions
 Levels of reading difficulties
o Independent Level o Instructional Level o Frustational Level
 Assessment Tools for Reading Difficulties (ASER & EGRA)
 Salient Features of Early Grade Reading Assessment (ASER & EGRA) Relevance of (ASER & EGRA) for reading difficulties
 Guidelines for Assessment Tools for reading difficulties
 Early readers / Beginners: Assessing Letter Knowledge, Letter-sound association, alphabetic code
 Intermediate: Word-learning, meaning-construction, high frequency words 6
 Guidelines for Assessment tools for Advance Level readers
 Vocabulary and oral language development
 Meaning Construction

 Comprehension

UNIT 3: Intervention of Reading Difficulties

This unit orients the prospective teachers to intervention practices for reading difficulties, combining preventive and remedial approaches. The unit highlights the role of Technology Assisted Reading Instruction for reading attainment. It also provides an orientation to research-based community involvement approaches for designing collaborative reading program in schools for reading success.

Week # Topics/themes

Preventive Approaches for Reading Difficulties

 Early Intervention through Standards based Instruction
 Strategies for Scaffolding Student Learning
 Practical Application of Scaffolding

Approaches to Corrective Instruction

Part-to-Whole Approach

 Whole-to- part-Approach
 Interactive View

Principles of Corrective Instruction:

 Prevention vs. Correction
 Fostering Independence
 Active Involvement
 Personalized Instructions
 Continuous Assessment
 Integrated Approach

Role of School Leader for Standard Reading Intervention

 Ways to deliver intensive interventions
 Classroom instruction for meeting the needs of all learners
 Characteristics of effective interventions

Ways to provide intensive intervention for struggling readers

 Small group instruction
 Work outside the regular reading block
 Intervention classroom

Key aspects in establishing and monitoring effective School level intervention

 School Leadership
 Programs and Materials
 Monitoring and tracking of reading development progress

Models of Standard-based Reading Interventions

 Standards for reading interventions: challenges and prospects for Pakistan
 Response to Intervention (RTI)/3-Tier Reading model
 Best practices in implementation of RTI
 Assistive Technology for Reading Instruction
 Online Tools, Applications and Programs for Reading

Interventions

School-Community Collaboration for Managing Reading Difficulty

 Models of Community Involvement in Reading Success
 Research about Community Involvement
 Designing standardized Preventive and Remedial Program for Reading Difficulties

UNIT 4: Linking Theory to Practice

This Unit is about the practical implementations of all pervious units regarding Reading difficulty issues; Types of Reading difficulties, Reading difficulties in Urdu & English, Identifications of Reading Difficulties and their remedial activities along-with Action Research in their Practicum schools. In which they can minimize/reduce the Reading difficulties of the students of the practicum school.

Week # Topics/themes

- Designing of Action plan for schools Interventions,
- Selecting a case with Reading Difficulties
- Selecting & Implementing tools for reading difficulties 13 & 14
- Practice Differentiated Instructional Strategies (DIS) – for Schools / Community / Out of school Children
- Reflective Video Magazine (Assignment)
- Reflective Seminar with practitioner and beneficiaries

SUGGESTED REFERENCE BOOKS

1. Westwood, Peter. Reading and learning difficulties Approaches to teaching and assessment. Routledge, 2004.
2. Reid, Gavin, and Shannon Green. 100 ideas for supporting pupils with dyslexia. Bloomsbury Publishing, 2007.
3. Mortimore, Tilly. Dyslexia and learning style a practitioner's handbook. John Wiley & Sons, 2008.
4. Farrel, Michael. The effective teachers' guide to sensory impairment and physical disability, practical strategies, new directions
5. McGuinness, D. (2006). *Language development and learning to read: The scientific study of how language development affects reading skill*. Mit Press.
6. Elizabeth, L. (2009). Reading comprehension: Success in 20 minutes a day. *Cambridge*
7. Mere, C. (2005). *More than guided reading: Finding the right instructional mix, K-3*. Stenhouse Publishers.
8. Walpole, S., & McKenna, M. C. (2007). *Differentiated reading instruction: Strategies for the primary grades*. Guilford Press.
9. Marion_Blank (2006) The Reading Remedy Six Essential Skills That Will Turn Your Child Into a Reader-Jossey-Bass
10. Brady, S. A. (1997). Ability to encode phonological representations: an underlying dijjciculty of poor readers. *Foundations of reading acquisition and dyslexia: Implications for early intervention*, *21*.

WEB RESOURCES

Cain, K., & Oakhill, J. (2009). Reading comprehension development from 8 to 14 years. *Beyond decoding: The behavioral and biological foundations of reading comprehension*, 143-175.

Nicholson, T. (1997). Closing the gap on reading failure: Social background, phonemic awareness, and learning to read. *Foundations of reading acquisition and dyslexia: Implications for early intervention*, 381-407.

Ehri, L. C. (1997). Sight word learning in normal readers and dyslexics. *Foundations of reading acquisition and dyslexia: Implications for early intervention*, 163-189.

CONTENT COURSE-III FROM SELECTED DISCIPLINE-I: READING INSTRUCTION AND ASSESSMENT INTEGRATION)

READING SPECIALIZATION
READING ASSESSMENT

COURSE CODE: CoC/ B.Ed.-Reading 401 (SEM VII)
CREDIT HOURS: 3

COURSE DESCRIPTION:
The course on Reading Assessment is designed to help teachers develop the knowledge, skills and attitudes needed to effectively assess the reading and writing skills of elementary grade students. Building upon the basics of Classroom Assessment course, Reading Assessment will examine foundational concepts of assessment in reading, the uses of reading assessment, and the communication of results of reading assessment. Students will learn to use a variety of reading assessments in a reliable manner to make on-going instructional changes and to maintain successful classroom practice. In addition, students will develop the skills needed to administer, and interpret well-researched reading assessments for placement and progress monitoring purposes. Student teachers will also develop skills required to conduct standardized tests, how to interpret results, and how to use test results to plan classroom instruction, give constructive feedback/support to the students, and to disseminate assessment results to other stakeholder groups (school administrators, parents and students) to improve the teaching and learning of reading.

Course Outcomes:
By the end of the course the prospective teachers will be able to:
 Reflect upon the importance of reading assessment;
 Examine issues teachers face in assessing their students reading and writing skills;
 Demonstrate familiarity with different types of grade-specific formative reading assessment tasks;
 Demonstrate techniques of developing (or adapting), administering and interpreting standardized tests/assessments of reading and writing;
 Develop a reading course formative assessment plan;
 Use the results of assessment to guide planning for classroom instruction;
Provide constructive feedback to students and other stakeholder groups on students' assessment of reading/writing skills; and create a plan for disseminating the results of reading assessment to peers, students, parents, administration and other stakeholders.

UNIT 1: Theoretical perspective of Reading Assessment
This unit introduces the discipline This unit examines the theoretical importance of reading assessment, and its impact on classroom practices and student learning. The course introduces the types of reading assessment appropriate for early grade learners, purposes and techniques. The unit emphasizes formative assessment, providing prospective teachers with the knowledge needed to develop an age-appropriate and comprehensive assessment plan that can guide classroom teaching and learning.

Week # Topics/themes
 Implications of Reading Assessment for teachers and students
 Purpose (audience), challenges and benefits of reading assessment
 Reading and writing: Core success criteria
 Assessing reading across disciplines
 Types of Reading assessment (standardized and informal)
 Principles of effective classroom reading assessment
 Formative reading assessment

UNIT 2: Trends and Issues in Reading assessment

This unit explores misconceptions about reading assessment. It highlights the issues which are prevailing in classroom regarding mis-assessment in reading, and help the pre-service teacher develop an awareness of reading inventories.

Week # Topics/themes
 General issues teachers face with reading assessment (includes misconceptions about reading assessment)
 Issues in L2 reading assessment (when learners learn to read in mother language)
 Use of Reading Inventories in Assessment
 Use of Reading Inventories in Assessment (cont'd.)
  Observational Records and Checklists
  Challenges in using reading inventories
  Oral Reading Analyses
  Think Aloud
 Developing a reading assessment plan
 Understanding reading course objectives
 Addressing context (class size, mixed levels, time constraints) in reading assessment
 Planning formative assessment program to monitor student progress
 Responding to formative assessment performance

UNIT 3: Developing assessment tasks and tests for assessing reading and writing skills

This unit will help students in understanding variety of reading assessment skills and provide them strategies to select, develop and use appropriate tests for assessment of listening, reading and writing skills. The students will get proficiency in analyzing results, interpreting deficiencies, progress and improvement. The unit will differentiate standardized and teacher made tests and will provide know how about psychometric characteristics of measuring instrument like validity and reliability. It will introduce some important standardized tests and their appropriate use for reading assessment.

Week # Topics/themes
 Types of tests for reading assessment.
 Oral reading assessment/Written assessment of reading.
 Assessment to use before and after reading. Fit for purpose: choosing the right EGRA application.
 Developing test for assessing the phonemic awareness and letter knowledge
 Assessing progress from letters to sounds to words.
 EGRA tools for testing phonemic awareness:

 a. Phoneme segmentation and b. identification of onset and rhyme sounds(first and last sounds)
 Developing test for assessing the reading comprehension of the students.
 Selection of narrative test for assessing causal structure of text.
 Types of cognitive processes produced during reading comprehension.
 Developing tests for analyzing the listening comprehension.
 Types of questions for assessing listening comprehension: Direct factual questions and inference questions.
 Assessing how learners approach, process and respond to text 10
 Tests for assessing oral reading fluency.
 Assessing the receptive oral vocabulary.
 Diagnosing poor performance on an oral vocabulary assessment techniques for progress monitoring and mastery checks.
 How to use ACER Progressive Achievement Test in reading.
 Evaluating the quality of test developed for assessing reading.
 Validity and reliability of reading\ writing assessment tools.)

UNIT 4: Planning, administering, scoring, grading, reporting reading assessments

This unit encompasses the importance of rubrics in reading assessment. Also covers the areas of grading readers who are facing literacy. Few topics in this unit will tell how to report students' progress in reading. Because by only assessment the reading will never improve.

Week # Topics/themes

 Rubrics for reading assessments
 Grading readers with literacy challenges
 Assessment of students with reading disabilities
 Assessing a reluctant participation in reading response group discussion
 How to report students' progress in reading?

UNIT 5: Feedback on reading and dissemination of results

This unit is about disseminating results of students to the stake holders. It gives great help to student about conducting parent teacher meeting and shares the reading results. What is feedback, and strategies for effective feedback? At the end of this discipline the pre- teacher are taught how to develop portfolio.

Week # Topics/themes

 Sharing results with students' parents, administration and other stake holders.
 Conducting parent teacher meeting.
 Providing feedback on oral assessment of reading.
 Peer feedback
 Techniques for portfolio assessment.

SUGGESTED REFERENCE BOOKS

1. Read, John. Assessing vocabulary. Cambridge University Press, 2000.
2. Rathvon, Natalie. Early reading assessment A practitioner's handbook. Guilford Press, 2004.

3. Paris, Scott G., and Steven A. Stahl, eds. Children's reading comprehension and assessment. Routledge, 2005.
4. Mariotti, Arleen Shearer, and Susan P. Homan. Linking reading assessment to instruction An application worktext for elementary classroom
5. Cook, Ann. How Well Does Your Child Read A Step-by-step Assessment of Your Child's Reading Skills and Techniques to Improve Them.
6. Brown, H. Douglas. 2004. Language assessment principles and classroom practices.
7. Hughes, Arthur. 1989. Testing for language teachers. Cambridge
8. John Read-Assessing Vocabulary (Cambridge Language Assessment) (2000)
9. Penny McKay Assessing Young Language Learners Cambridge Language Assessment 2006
10. Mishan, F. (2003). Designing authenticity into language learning materials. Bristol Intellect.

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Walpole, S., & McKenna, M. C. (2006). The role of informal reading inventories in assessing word recognition. *The Reading Teacher*, *59*(6), 592-594.

Yaeger, J. A. (2014). Wisconsin Foundations of Reading Study Guide. *Sl: Pearson*.

Pearson, P. D., & Hamm, D. N. (2005). The assessment of reading comprehension: A review of practices—Past, present, and future. *Children's reading comprehension and assessment*, 31-88.

PEDAGOGY-I (METHODS OF TEACHING FROM SELECTED DISCIPLINE-I: READING INSTRUCTION AND ASSESSMENT INTEGRATION)

READING SPECIALIZATION
TEACHING READING

COURSE CODE: PeC/ B.Ed.- Reading 401 (Sem VII)
CREDIT HOURS: 3

Course Description:
This course aims to provide prospective teachers with the knowledge and skills that are needed to create and implement effective reading and writing lessons that meet the diverse needs of young learners in Pakistan. Furthermore, the course will offer them with an opportunity to explore a wide range of evidence based appropriate methods and strategies that may increase the reading and writing performance of every student at early grades. The course will support creative and reflective thinking so that the prospective teachers may become effective leaders of reading and writing instruction.
Although the course contains a separate unit for each of the core components of reading, it also aims to help student teachers to integrate these components into one lesson/series of lessons throughout a reading course. Further, as schools in Pakistan have diverse learners in terms of cultural and linguistic backgrounds, so, the course introduces prospective teachers to various effective instructional strategies of reading that can meet the diverse learning needs of their students in their reading lessons. It will also help prospective teachers to understand the connection between reading and writing as two integrated literacy skills.
The course is structured in a way that each unit first attempts to provide input to the student teachers regarding how they need to teach a reading and writing lesson, analyze it so that they can identify the theoretical background of it, plan and execute their own lessons, and critically reflect on their teaching and learning.
Numerous topics will be discussed, demonstrated and reflected within eight-unit span:
Unit 1: Evidence based approaches, methods and strategies for teaching of reading and writing
UNIT 2: Teaching phonemic awareness
UNIT 3: Teaching phonics
UNIT 4: Teaching Fluency
UNIT 5: Teaching Vocabulary
UNIT 6: Teaching Comprehension
UNIT 7: Teaching Writing
UNIT 8: Differentiated Instructions for Reading and Writing.

Course Outcomes:
By the end of the course the prospective teachers will be able to:
 Demonstrate the use of various reading approaches and methods to create the lessons that involve every learner in reading.
 Design, use and evaluate various reading materials and resources needed to improve reading performance of the early graders.

 Plan and execute reading lessons that are based on the needs and preference of their learners.
 Exhibit knowledge and skills that are required for developing and implementing a reading lesson using small and large group tasks, collaborative reading, conferencing and individual tasks.
 Critically reflect on their teaching of reading and writing at elementary level in terms of student learning.

Semester Outline

UNIT 1: Evidence based approaches, methods and strategies for teaching of reading and writing

After studying this unit the prospective teachers will be able to:
 Describe various research-based approaches and methods of teaching reading.
 Demonstrate their understanding about various approaches and methods of teaching reading, and be able to articulate possible limitations of these approaches.
 Distinguish and select the appropriate methods for teaching reading at early grade level in Pakistan's public school contexts

Week # Topics/themes Week 1&2
 Introduction to the Course
 What is evidence based approach of reading Some of the problems with evidence based approach
 Phonics approach
 Whole language approach
 Comparing various elements involved in reading approaches
 Sharing the case studies/article to select the best possible approach for teaching reading

UNIT 2: Teaching phonemic awareness

After studying this unit the prospective teachers will be able to:
 Explain the importance of phonemic awareness for developing reading skills among early graders.
 Explore strategies for teaching phonemic awareness.
 Plan and implement a lesson based on phonemic awareness.

Week # Topics/themes Week 3 &4
 Introduction to phonemic awareness and its teaching (importance and hierarchy)
 Teaching strategies for phonemic awareness
 Teaching phonemic through games and interactive activities
 Assessing phonemic awareness
 Designing instructional plans on phonemic awareness
 Designing and Executing activities, lessons and materials for teaching Phonemic Awareness

UNIT 3: Teaching phonics

After studying this unit the prospective teachers will be able to:
 Explore the relationship between sounds and symbols
 Develop knowledge of synthetic and analytical methods of teaching phonics
 Identify a variety of strategies for teaching phonics at early grades

 Plan and execute a lesson based on phonics

Week # Topics/themes Week 5& 6
 Introduction to teaching phonics
 Approaches to Sounding out words
 A model phonic program
 Strategies of teaching phonics
 Assessing phonics
 Instructional design on Phonics

UNIT 4: Teaching Fluency
After studying this unit the prospective teachers will be able to:
 Explain how reading fluency helps in comprehending a reading text.
 Demonstrate understanding of the importance of developing fluency among young readers.
 Explore various strategies, activities and material that may help foster fluency development during oral reading.

Week # Topics/themes Week 7 &8
 Defining oral reading fluency
 Strategies for developing oral reading fluency
 Strategies for developing oral reading fluency (cont'd)
 Designing activities and lessons for fluency instruction
 Practical teaching of lessons on oral reading fluency skills
 Practical teaching of lessons on oral reading fluency skills (cont'd)

UNIT 5: Teaching Vocabulary
After studying this unit the prospective teachers will be able to:
 Explore the concept of vocabulary and demonstrate their understanding about relationship between vocabulary and comprehension.
 Explain the principles of teaching vocabulary to the early graders (including cases where readers do not use the reading language in the home).
 Design and implement strategies for teaching vocabulary in a reading lesson.

Week # Topics/themes Week 9&10
 Vocabulary Basics and its relationship with comprehension
 Seven principles of teaching/developing vocabulary
 Techniques and strategies for teaching vocabulary
 Ways of presenting new vocabulary to students
 Designing and developing activities for teaching vocabulary
 Practical Teaching of vocabulary lessons and activities

.UNIT 6: Teaching Comprehension
After studying this unit the prospective teachers will be able to:

 Design explicit instructional strategies to model and guide the comprehension development.
 Explain the role of story structure in the comprehension development.
 Design and implement strategies for developing comprehension in a reading lesson.
 Plan and execute a series of integrated reading lessons based on various components of reading.

Week # Topics/themes Week 11 & 12
 Introduction of process of comprehension process
 Strategies for teaching Comprehension
 Strategies for teaching comprehension (cont'd)
 Assessment of Reading comprehension
 A demonstration lesson on reading comprehension lesson by faculty member, and analysis of the lesson components.
 Planning and designing instructions on reading comprehension
 Planning, execution and reflection on the instructional plans.

UNIT 7: Teaching Writing

After studying this unit the prospective teachers will be able to:
 Explain process of writing in early grades.
 Define writing and what the process of writing involves.
 Explain role of writing in development of reading proficiency among young learners.
 Identify and select the suitable strategies of teaching writing for early grades.

Week # Topics/themes Week 13 &14
 Stages of Writing development
 The Writing Process
 The Elements of Writing 14
 Instructional approaches of writing
 Teaching Writing through technology
 Writing Assessment

UNIT 8: Differentiated Instructions for Reading and Writing

Explain After studying this unit the prospective teachers will be able to:
 Explain what is meant by the term 'differentiated instruction.
 Modify the instructional strategies according to the needs of their learners.
 Identify ways to create literacy friendly classrooms

Week # Topics/themes Week 15 & 16
 Defining differentiated instruction and why is it important
 Planning Differentiated Instructions
 Integration of Technology with Differentiated instruction
 Differentiating instructions for reading
 Differentiating instructions for Writing Assessment of differentiated instructions

SUGGESTED REFERENCE BOOKS

1. Wendi Silvano, School Specialty Publishing - Hands-On Chemistry Experiments, Grades K-2 -Instructional Fair (2004)

2. Karen Breitbart, School Specialty Publishing - Reading for Every Child_ Comprehension, Grade K -Instructional Fair (2004)
3. Donald R. Bear et al. - Words Their Way_ Word Study for Phonics, Vocabulary, and Spelling Instruction-Pearson (2017)
4. Ульянова Н.П., Овчинникова Н.И., Ивашенко О.В.,Чайка Е.Ю., Нестругина М.В. - Focus on Speaking (Fluency Activities Book for Second Year Students)_ Учебное пособие по английскому языку-Изд-во ВГУ (2005)
5. Anne Vander Woude, School Specialty Publishing - Reading for Every Child_ Fluency, Grade K -Instructional Fair (2004)
6. Anne L. Steele, School Specialty Publishing - Reading for Every Child_ Phonemic Awareness, Grades K-1 -Instructional Fair (2004)
7. Armbruster, B. B., Lehr, F., Osborn, J., O'Rourke, R., Beck, I., Carnine, D., & Simmons, D. (2001). *Put Reading First:*. National Institute for Literacy, National Institute of Child Health and Human Development, US Department of Education.
8. Armbruster, B. B. (2010). *Put reading first: The research building blocks for teaching children to read: Kindergarten through grade 3*. Diane Publishing.
9. Bouchard, M. T. (2006). Comprehension Strategies for English Language Learners. *Education Review*.
10. Wulandari, M., & Pasaribu, T. A. (2022). *Technology for English language learning*. Sanata Dharma University Press.

WEB RESOURCES

Van Namen, M., Powers, A., & Snow, C. (2017). Using Thinking Maps to Develop Higher Order Thinking Skills among Diverse Learners. Int. J. Educ. Hum. Dev, 3(2), 52-58.
Bazai, Z. U. R., Manan, S. A., & Pillai, S. (2022). Language policy and planning in the teaching of native languages in Pakistan. *Current Issues in Language Planning*, 1-19.
Nguyen, N. L. D., Nghia, T. T., Thy, P. H., & Nhi, H. T. Y. (2022). The Relationship between Students' Self-Efficacy Beliefs and Their English Language Achievement. *Journal of English Language Teaching and Applied Linguistics*, *4*(2), 102-112.

CONTENT COURSE
I-III
(FROM SELECTED DISCIPLINE-II)
&
PEDAGOGY II

MATHEMATICS

CONTENT COURSE-I (FROM SELECTED DISCIPLINE-II: MATHEMATICS)

MATHEMATICS CONTENT -I

Semester: V

Course Code: COC/B.Ed-Math 302

Credit Hours: 3 hrs.

Course Description:

Mathematics has always a compulsory and major subject in elementary classes, but the existing teachers' beliefs and perceptions of teaching mathematics at elementary level in our context are not promising; we are rather more focused towards transmission of knowledge by engaging students in memorizing mathematical rules and formula, rather engaging them in constructing mathematical knowledge and understanding of mathematical concepts .Therefore, it is very important for elementary teachers need to make what seem to be mathematical contradictions clear to their students from early age. This course will equip Student Teachers with the knowledge to teach mathematics in elementary grades. They will plan mathematics lessons and activities, and engage in practice teaching of mathematics.

This course intends to extend prospective teachers' content knowledge as well as building their understanding of the nature of mathematics, teacher beliefs and perceptions and mathematics teaching and learning. This will enable prospective teachers to develop students' problem solving, logical thinking and reasoning skills. The importance of designing effective assessment items to facilitate students' learning is also considered.

Learning Outcomes:

After completion of this course prospective teachers will be able to:

- Attain a better understanding of mathematical ideas;
- Revisit beliefs, ideas and perceptions towards teaching and learning of mathematics;
- Acquire the skills and competencies required for the teaching of mathematics at elementary level.
- Apply effectively the various methods, techniques and strategies of teaching mathematics
- Appreciate mathematical processes and discover the power of mathematical thinking.
- Appreciate learning by doing rather than instrumental learning.
- Develop a positive attitude towards teaching of mathematics.

- Design unit plan for teaching and manage a classroom effectively.
- Design assessment for/of/as learning to facilitate students learning.
- Use ICT in teaching and learning of mathematics

Learning and Teaching Approaches

The following approaches will be used in the course.

- Mathematical Games
- Activity based teaching
- Inquiry method
- Discovery method
- Exploration method
- Demonstration method
- Lecture method
- Heuristic method
- Discussion with peers and instructor
- Use of ICTs to facilitate learning and teaching

Time	Lesson/ Credit hrs.	Theory	Related Material
Week 1	**1. Absolute Numerical Value of an integer, real & whole numbers** **2-Rational and Irrational numbers** **3- Decimals, Approximate Value**	(i).Define absolute or numerical value of a number as its distance from zero on the number line and is always positive and arrange integers in ascending and descending order. (ii) Define rational and irrational numbers. (iii) Terminating and non-terminating decimals. (iv) Define decimal and get an approximate value of a number, called rounding off, to a desired number of decimal places	Number games, cards and use of worksheets. Use of shapes, activities with charts and cards.
Week 2	**4-6** **Functions**	(i).Define functions, binary functions. (ii) The range and domain of the function. (iii)Differentiate between onto and one-to one function.	Lecture notes, worksheets.
Week 3	**7-9** **Exponents, Laws of Exponent**	(i)Identify base, exponent. (ii)Define product law of exponent for same bases and when bases are different	Lecture notes

		(iii) Quotient law when bases are same and different	
Week 4	**10-Ratios** **11- Proportion** **12-use of ratios and proportions.**	Define ratio as a relation which one quantity bears to another quantity of the same kind with regard to their magnitudes. (ii) Know that of the two quantities forming a ratio, the first one is called antecedent and the second one consequent.	Use of research papers to identify new methods of teaching ratios and proportions
Week 5	**13-15** **Pythagoras theorem, Hero's formula**	(i)State Pythagoras theorem and give its informal proof. (ii)Solve right angled triangle by using Pythagoras. theorem (iii)State and apply hero's formula to find the area of a triangular and quadrilateral regions	Power point presentation
Week 6	**16-18** **Polynomial**	(i)Define polynomial, degree of polynomial (ii) polynomial in one and more variables (iii) Reorganization of linear, quadratic and cubic polynomials.	Lecture notes, Use of worksheets.
Week 7	**19-21**	**Ist Mid Term Test**	
Week 8	**22-24** **Algebra & algebraic operations**	(i)Define Algebra, (ii) Explain the term algebra as an extension of arithmetic in which letters replace the numbers. (iii) Describe history of algebra and its usefulness in real life.	Teaching and learning activities
Week 9	**25-27** **Algebraic Expressions**	(i) Define algebraic expression to find out unknown values by using known quantities (ii) Differentiate b/w like and unlike terms.(iii).) Recall variable as a quantity which can take various numerical values.	Demonstration Method
Week10	**28-30** **Linear Equations**	(i) Define linear equation in one variable (ii) construct linear equation to solve involving fractional and decimal coefficients (iii) Differentiate between equation and an expression.	Teaching learning activities, inquiry and demonstration method

Week 11	**31-33** **Perimeter and Area**	i).Identify the units for measurement of perimeter and area. (ii) Write the formulas for perimeter and area of square, rectangle, triangle and circle, iii) Apply formulas to find perimeter and area of a square and rectangular region. Iv)Solve appropriate problems of perimeter and area	Use of shapes from real life, worksheets and use of ICT
Week 12	**34-36** **Geometry**	(i).Construct a triangle when perimeter and ratio among the lengths of sides are given. (ii).Construct a parallelogram when • two adjacent sides and their included angle are given, • Two adjacent sides and a diagonal are given.	Use of shapes from real life, worksheets and use of ICT.
Week 13	**37-39**	**2nd Mid Term Test**	
Week 14	**40-42** **Surface area and volume**	(i) Find the volume of sphere (ii) Find the volume of a cone (iii) Use different shapes from real	Use of charts and lecture notes.
Week 15	**43-45** **Information handling** Arithmetic Mean, Harmonic Mean and Geometric Mean	.1 Average i) Define an average (arithmetic mean, harmonic and Geometric mean iii) Solve real life problems involving average.	Teaching learning activities, inquiry and demonstration method
Week 16	**46-48** **Types of Data** **Pie Graph Read a pie graph.**	(i).Define data and data collection. ii)Distinguish between grouped and ungrouped data	Use of ICT
Week 17	**FINAL TERM**		

Assessment Scheme:	**Total marks 100**
Mid Term Marks:30 i- Test I = 10 ii- Test II = 10 iii- Assignment/ Quizz/ Presentations= 10	Final Term Marks: 70 i- Attendance = 5 ii- Final Term Exam = 65

REFERENCE BOOKS

1. Australian Association of Mathematics Teachers (2006). *Standards for excellence in teaching mathematics in Australian schools.*
2. Dossey, J. A. (1992). The nature of mathematics: Its role and its influence. In Grouws, D. A. (Ed.), Handbook of research on mathematics teaching and learning (pp. 39-48). New York: Macmillan.
3. Lange, J.D. (2006). *Mathematical literacy for living OECD-PISA perspective*. Utrecht: Freudenthal Institute, Utrecht University.
4. Leon, B., and Jaworski, B. (Eds.) (1995). Technology in mathematics teaching: A bridge between teaching and learning. Chartwell-Bratt.
5. Mathematical Association of America (2001). *The mathematical education of teachers*, Washington DC: Conference Board of Mathematical Sciences.
6. National Council of Teachers of Mathematics (2004). *Handbook of research on mathematics teaching and learning* (p. 111).
7. Rosalind ,C. and Karen, K.L.(2010*). Math and Science for young children.* Words Worth learning. USA
8. Sidhu, K. S. (1989). The teaching of mathematics. New Delhi: Sterling Publishers.
9. Stone W.M. (1998). *Teaching for understanding: Linking research with practice*. San Francisco: Jossey-Bass Publishers, San Francisco.
10. Overholt, J. L., & Kincheloe, L. (2010). *Math Wise! Over 100 Hands-On Activities that Promote Real Math Understanding, Grades K-8*. John Wiley & Sons.

WEB RESOURCES

1. Mathematics Books https://pctb.punjab.gov.pk/download_books
2. NCTM *Illuminations*: http://illuminations.nctm.org/
3. New Zealand's Maths Currriculum: http://nzmaths.co.nz/
4. UK's N-Rich Maths site: http://nrich.maths.org/public/

CONTENT COURSE-II (FROM SELECTED DISCIPLINE-II: MATHEMATICS)

MATHEMATICS- II

Semester: VI

Course Code: **CoC / B.Ed.-Math 305**
Credit Hours: 3 hrs.

Course description
Mathematics is the mother of all subjects. This course will help in creating awareness of the history of mathematics as well as its scope and significance. Also Student Teachers will be able to design plans for integrating Information and Communications Technology (ICT) to develop students' mathematical learning. The importance of designing effective assessment items to facilitate students' learning is also considered.

Learning outcomes
After completing this unit, Student Teachers will be able to: Explore different schools of thought, such as fallibility, constructivist, and social constructivist identify possible connections between and influences of perspectives on the nature of mathematics and its teaching and learning, relate the importance of mathematics in daily life, explain the relationship of mathematics to other subjects, critically analyses mathematics content and students' learning outcomes in light of the mathematics philosophy proposed in the National Curriculum for Mathematic.

Learning and teaching approaches

The following approaches will be used in the course.

•Discovery method •Exploration method •Demonstration method •Lecture method
•Discussion with peers and Instructor •Use of ICTs to facilitate learning and teaching
• Inquiry method • Lecture Notes

Course Outline:

Time	Lesson	Theory	Related Material
Week 1	**1-3 Operations on Sets Theory**	Define union, intersection and difference of two sets. i) Find • union of two or more sets, • intersection of two or more sets, • difference of two sets. ii) Define and identify disjoint and overlapping sets. iii) Define a universal set and complement of a set.	Learning through work sheets

Time	Lesson	Theory	Related Material
Week 2	**4-6** **Perfect Square and its properties**	(i)Define perfect squares (ii) Identify and apply the properties of perfect square (iii) Solve real life problems	Inquiry method, learning through worksheets
Week 3	**7-9** **Square roots of positive number**	(i). Define Square roots of natural number and its notion (ii) Fine Square roots by division method (iii) Define nth roots of whole numbers.	Demonstration Method
Week 4	**10-12** **Direct & Inverse Variation**	(i)Define and recall direct and inverse variations (ii) Practice theory and numerical	Lecture note
Week 5	**13-15** **Continue Ratio**	(i)Define continued ratio, (ii). Solve real life related problems	Lecture notes
Week 6	**16-18** **Time, Speed and Distance**	i) Solve real life problems related to time and work using proportion. ii) Find relation (i.e. speed) between time and distance. iii) Convert units of speed (kilometer per hour into meter per second and vice versa).	Learning through work sheets
Week 7	**19-21**	**Ist Midterm Test I**	
Week 8	**22-24** **Financial Arithmetic**	(i)Define taxes (ii) Proper tax. (iii) Solve tax related problems	Teaching and learning activities
Week 9	**25-27** **Profit and Markup**	i) Explain profit and markup. ii) Find the rate of profit/ markup per annum. iii)Solve real life problems involving profit/ markup	Demonstration method
Week 10	**28-30** **Zakat and Ushr**	(i). Define zakat and ushr. ii) Solve problems related to zakat and ushr.	Inquiry Method
Week 11	**31-33** **Operations with Polynomials**	(i). Add and subtract two or more polynomials. (ii)Find the product of •monomial with monomial, •monomial with binomial/trinomial, •binomials with binomial/trinomial. iv)Simplify algebraic expressions involving addition, subtraction and multiplication	Teaching and learning activities
Week 12	**34-36** **Factorization of Algebraic Expressions**	(i). Factorize an algebraic expression (using algebraic identities). (ii). Factorize an algebraic expression (making groups).(iii) Solve problems	Lecture notes
Week 13	**37-39**	**2nd Midterm Test I**	
Week14	**40-42** **Information handling Frequency distribution**	i) Demonstrate data presentation. ii) Define frequency distribution (i.e. frequency, lower	Power point presentation

		class limit, upper class limit, class interval, and tally bar).	
Week 15	**43-45** **Measures of Central tendencies**	(i)Mean,(ii)median, (iii)mode through group and ungroup data problems	Demonstration Method
Week16	**46-48** **Measures of dispersion**	(i)Range (ii)Variance (iii)Standard deviation.	Lecture notes, worksheets.
Week 17	**FINAL TERM**		

Assessment Scheme:	**Total marks 100**
Mid Term Marks:30 iv- Test I = 10 v- Test II = 10 vi- Assignment/ Quizz/ Presentations= 10	Final Term Marks: 70 iii- Attendance = 5 iv- Final Term Exam = 65

REFERENCE BOOKS:

1. Kaufmann. J. E. *College Algebra and Trigonometry*, PWS-Kent Company, Boston, Latest Ed.
2. Swokowski. E. W., „*Fundamentals of Algebra and Trigonometry*", Latest Edition.
3. Andrews, P., & Hatch, G. (1999). A new look at secondary teachers' conceptions of mathematics and its teaching. British Educational Research Journal, 25(2), 203–223.
4. National Curriculum of Pakistan (2006).
5. Math Textbooks https://pctb.punjab.gov.pk/download_books
6. Muschla, G. R., & Muschla, J. A. (2010). *Hands-On Math Projects with Real-Life Applications, Grades 3-5* (Vol. 30). John Wiley & Sons.
7. Stone, J. (2006). *Hands-on Math: Manipulative Math for Young Children*. Good Year Books.
8. James, C. (2015). *The Garden Classroom: Hands-on Activities in Math, Science, Literacy, and Art*. Shambhala Publications.
9. Alvarado, A. E., & Herr, P. R. (2003). *Inquiry-Based Learning Using Everyday Objects: Hands-On Instructional Strategies That Promote Active Learning in Grades 3-8*. Corwin Press, Inc., A Sage Publications Company, 2455 Teller Road, Thousand Oaks, CA
10. *Mathematics Explained for Primary Teachers*, by Derek Haylock, published by SAGE Publications.

WEB RESOURCES

1. How Students Learn: History, Mathematics, and Science in the Classroom www.nap.edu/catalog.php?record_id=10126#toc Published by National Academies Press.
2. What does Good Mathematics Instruction Look Like?: http://www.naesp.org/resources/2/Principal/2007/S-Op51.pdf
3. Thuneberg, H., Salmi, H., & Fenyvesi, K. (2017). Hands-on math and art exhibition promoting science attitudes and educational plans. Education Research International, 2017.
4.

CONTENT COURSE-III (FROM SELECTED DISCIPLINE-II: MATHEMATICS)

MATHEMATICS- III

Semester 7

Course Code: CoC / B.Ed.-Math 402

Credit Hours 3

Course description

Mathematics is the mother of all subjects Mathematics learning can inculcate problem-solving, logical-thinking, and reasoning skills in students only when they are taught in such a way that they learn conceptually instead of by drill and practice. In previous semesters, we have focused on mathematics content, but this course intends to extend Student Teachers' understanding of pedagogy as well as build their understanding of the nature of mathematics, teacher beliefs and perceptions, and mathematics teaching and learning. This will enable Student Teachers to develop students' problem solving, logical-thinking, and reasoning skills. This course will help in creating awareness of the history of mathematics as well as its scope and significance. Also Student Teachers will be able to design plans for integrating Information and Communications Technology (ICT) to develop students' mathematical learning. The importance of designing effective assessment items to facilitate students' learning is also considered.

The following main ideas are discussed in this course:

- The nature and scope of mathematics
- The attitude of teachers towards mathematics learning and their perception of it
- Research in mathematical processes
- Planning for assessment and teaching.

Learning outcomes

After completing this unit, Student Teachers will be able to: l discuss how teachers' beliefs perceptions, and attitudes influence their teaching practice. List the common misconceptions abou teaching and learning mathematics. Critically review their own beliefs and attitudes towards teachin and learning mathematics and discuss how to develop students' conceptual understanding, develo teaching activities from their own context for teaching mathematical concepts use the develope teaching activities for the progression of mathematical concepts. Explore different schools of thought such as absolutist, fallibility, constructivist, and social constructivist identify possible connection between and influences of perspectives on the nature of mathematics and its teaching and learning relate the importance of mathematics in daily life, explain the relationship of mathematics to othe subjects, critically analyses mathematics content and students' learning outcomes in light of th mathematics philosophy proposed in the National Curriculum for Mathematic.

Learning and teaching approaches

The following approaches will be used in the course.

•Activity-based teaching •Inquiry method •Discovery method
•Exploration method •Demonstration method •Lecture method •Discussion with peers and Instructor • Inquiry Method
•Problem solving Method •Use of ICTs to facilitate learning and teaching

Week	Lesson	Theory	Related Material
Week 1	**1-3** **Real and complex number theory,** **Matrix,** **Types of Matrix**	i. Define •a matrix with real entries and identify row matrix, column matrix, rectangular matrix, square matrix, zero/null matrix, identity matrix, scalar matrix, diagonal matrix, transpose of a matrix, symmetric and skew-symmetric matrices	Use of ICT, Inquiry Method
Week 2	**4-6** **Multiplicative Inverse of a Matrix**	Define the determinant of a square matrix. ii).Evaluate determinant of a matrix. iii).Define singular and non-singular matrices. iv).Define ad joint of a matrix. v).Find multiplicative inverse of a non-singular matrix A and verify that AAIAA11−−where I is the identity matrix. vi)Use ad joint method to calculate inverse of a non-singular matrix	Lecture Notes
Week 3	**7-9** **Solution of Simultaneous Linear Equations**	Solve a system of two linear equations and related real life problems in two unknowns using •Matrix inversion method, •Cramer's rule	Demonstration Method
Week 4	**10-12** **Permutations**	(i)Rules of permutation (ii) Use of permutations to solve real life problems.	Demonstration Method
Week 5	**13-15** **Combinations**	i. Rules of combination (ii) Use of combination to solve real life problems.	Lecture Notes
Week 6	**16-18** **Circle**	i) Demonstrate a point lying in the interior and exterior of a circle. ii) Describe the terms; sector, secant and chord of a circle, noncyclic points, tangent to a circle and concentric circles.	Demonstration Method

Week 7	**19-21**	**Ist Mid –term Test**	
Week 8	**22-24** **Sequence and series**	(i)Define sequence and series (ii)finite and infinite series	Lecture notes
Week 9	**25-27** **Increasing and decreasing Sequence**	i) Monotone increasing or decreasing sequences ii. Solve numerical problems	Demonstration Method
Week 10	**28-30** **Binomial theorem**	(i)Define binomial theorem (ii) Define binomial distribution. (iii)Mathematical induction	Power Point, Problem solving Method
Week 11	**31-33** **Linear Equations**	(i). Define linear equations (ii).Solution of linear equations (iii). linear equation in two variables	Lecture notes, Use of worksheets.
Week 12	**34-36** **Quadratic Equations**	(i). Define linear and quadratic equations (ii). Solution of quadratic equations	Demonstration Method
Week 13	**37-39**	**2nd Mid –term Test**	
Week 14	**40-42** **Trigonometry**	i) Define trigonometry. ii) Define trigonometric ratios of complementary angles. iii) Solve right angled triangles using trigonometric ratios. iv) Solve real life problems to find heights (avoid naming angle of elevation).	Microsoft Power Point to link presentations
Week 15	**43-45** **Trigonometric Ratios of Acute Angles**	i).Define trigonometric ratios of an acute angle. ii) Find trigonometric ratios of acute angles (30 , 60 and 45 degrees).	Lectures Notes
Week 16	**46-48** **Trigonometric Identities**	Prove the trigonometric identities and apply them to show different trigonometric relations	Lectures Notes
Week 17		Final Term	

Assessment Scheme:	**Total marks 100**
Mid Term Marks:30 vii- Test I = 10	Final Term Marks: 70 v- Attendance = 5

viii- Test II = 10 ix- Assignment/ Quizz/ Presentations= 10	vi- Final Term Exam = 65

REFERENCE BOOKS:

1. Kaufmann. J. E. *College Algebra and Trigonometry,* PWS-Kent Company, Boston, Latest Ed.
2. Swokowski. E. W., „*Fundamentals of Algebra and Trigonometry*", Latest Edition.
3. Andrews, P., & Hatch, G. (1999). A new look at secondary teachers' conceptions of mathematics and its teaching. British Educational Research Journal, 25(2), 203–223.
4. Baig, S., &Halai, A. (2006). Learning mathematics rules with reasons. Eurasia Journal of Mathematics, Science and Technology Education, 2(2). Retrieved from: Ø http://www.ejmste.com/022006/d2.pdf
5. Ball, D. L., & Hill, H. (2008). Learning mathematics for teaching: Mathematical knowledge for teaching (MKT) measures. Ann Arbor: University of Michigan, Learning Mathematics for Teaching Project.
6. Dossey, J. A. (1992). The nature of mathematics: Its role and its influence. In D. A. Grouws, (Ed.), Handbook of research on mathematics teaching and learning (pp. 39-48). New York: Macmillan.
7. O Level Mathematics Coursebook D1
8. O Level Mathematics Coursebook D2
9. O Level Mathematics Coursebook D3
10. O Level Mathematics Coursebook D4

WEB RESOURCES

1. New Zealand's Maths Currriculum: http://nzmaths.co.nz/
2. UK's N-Rich Maths site: http://nrich.maths.org/public/
3. *How Students Learn: History, Mathematics, and Science in the Classroom* www.nap.edu/catalog.php?record_id=10126#toc Published by National Academies Press.
4. *What does Good Mathematics Instruction Look Like?:* http://www.naesp.org/resources/2/Principal/2007/S-Op51.pdf

PEDAGOGY-II (METHODS OF TEACHING FROM SELECTED DISCIPLINE-II: MATHEMATICS)

Teaching Mathematics II (Pedagogy)

Semester :	VII
Credit Hours:	3
Course Code:	PeC / B.Ed.-Math 402

Course Description:

The course will focus initially on the processes of learning and teaching mathematics, and then consider the role of the teacher in enhancing learning. Student Teachers will review pedagogical approaches to mathematics and consider priorities for the future in learning and teaching mathematics. It will help them learn from their cultural context and link school mathematics with out-of-school mathematics. Theoretical approaches to learning mathematics will be examined and applied to better understand the key problems and challenges in mathematics education today, which include language issues, technology, contexts, feelings, beliefs, and attitudes. This course will provide Student Teachers with ICT knowledge, and they will look at ways in which ICT can successfully be applied to and integrated into the curriculum. It will help Student Teachers develop cognitive ability (reasoning, decision-making, and reflection) that may be useful to enhance the critical mathematical thinking of students in the context of practice.

Learning Outcomes:

After completion of this course prospective teachers will be able to:

- Acquire a deeper understanding of the ways in which learners learn and teachers teach mathematics, and of connections between learning and teaching mathematics
- Develop skills of reading literature on mathematics education critically and of expressing arguments in mathematics education cogently
- Challenge the beliefs, ideas, and perceptions about teaching and learning mathematics
- Appraise theoretical approaches to learning and teaching mathematics and test these ideas in planning for teaching
- Recognize and use connections between mathematical ideas and between mathematics and other disciplines l develop positive attitudes towards mathematics l produce imaginative and creative work arising from mathematical ideas

Learning and Teaching Approaches

The following approaches will be used in the course.

- Activity based teaching
- Inquiry method
- Discovery method
- Exploration method
- Demonstration method
- Lecture method
- Discussion with peers and instructor
- Use of ICTs to facilitate learning and teaching

Time	Lesson/Credit hours	Theory	Related Material
Week 1	**1-3** **Different views and perspective about History of Mathematics, Misconceptions in Mathematics**	a. Absolutistic and Fallibilist. b. Humanistic, Constructivist and Social constructivist c. Instrumentalist and Platonic view of mathematics d. Historical development in mathematics: Patterns and Relationships.	Use of research papers, Lecture notes
Week 2	**4-6** **The nature, nurture and scope of Mathematics**	i. Exploring mathematics concepts, rules and formulate to develop conceptual understanding ii. Constructive and social view iii. Instrumental and rational understanding	Peer-teaching, Demonstration Method
Week 3	**7-9** **Teacher beliefs, perceptions, and attitudes towards mathematics and its teaching and learning**	i. Discuss how teachers' beliefs, perceptions, and attitudes influence their teaching practice ii. Critically views of beliefs and attitudes	Discussion with peers and instructor

		iii. Challenges of teachers and use of teaching development activities	
Week 4	**10-12** **Students beliefs, perceptions, and attitudes towards mathematics**	Discuss students' beliefs, perceptions, and attitudes towards learning mathematics ii. Critically views of beliefs and attitudes iii. Challenges of students in learning mathematics	Peer Discussions, Lecture Method
Week 5	**13-15** **The mathematical Process, Teaching and Learning approaches and Principles**	i. Understanding mathematical processes (critical thinking and abstract-concrete thinking) • Methods of teaching mathematics• Communication in the mathematics classroom• Connections (establishing relationships among.	Discussion with peers and Instructor, Lecture Method
Week 6	**16-18** **Unit planning , Planning teaching and sequencing mathematical content and concepts**	i. Different models of lesson planning (a) LES (Launch, Explore, and Summarize), ii. Bulging gaps b/w theory and practice, iii. Effective planning implement task,	Use of research papers to identify new methods of teaching.
Week 7	**19-21**	**Ist Mid-term Test**	
Week 8	**22-24** **Conceptual learning**	(i)What is conceptual learning? (ii) How does conceptual learning make mathematics meaningful?	Use of ICT.
Week 9	**25-27** **Contextual learning**	(i)Contextual learning (ii) How does contextual learning enhance understanding? (iii) Introducing different activities based on contextual learning	Lecture notes, Use of worksheets. Cards, use of charts.
Week 10	**28-30** **Collaborative Learning**	i) Collaborative learning (ii) Distinguish b/w conceptual, contextual and collaborative learning	Power point

Week 11	**31-33** **Developing and deepening mathematical knowledge being and knowing in teaching**	i. Method of practice and teaching in developing mathematics ii. Contextual application of teacher knowing	Use of research papers to identify new methods of teaching.
Week 12	**34-36** **School mathematics as a special kind of mathematics**	(i)Discussing the benefits of practices of school mathematics (ii) Discussing the usability of the identified practices in a Pakistani context iii. Presenting some concrete examples on best practices for teaching mathematical concepts in schools	Lecture Method
Week 13	**37-39**	**2nd Mid Term Test**	
Week 14	**40-42** **Effective pedagogies for mathematics teaching**	Micro-teaching: Delivering lessons to peers (ii) Reviewing the unit planning based on the feedback received Course assignments and assessment Student	Use of ICT
Week 15	**43-45** **The integration of ICTs. Exploring mathematics concepts using ICT**	(i)Exploring mathematics concepts using ICT (ii) Identifying appropriate and relevant technologies that could facilitate mathematics learning Week resources, including ICT	Lecture notes, worksheets.
Week 16	**46-48** **Reflection on research papers**	(i)Searching relevant research papers that discuss mathematics processes to teach for conceptual understanding (ii) Reviewing the identified research studies (iii) Discussing different teaching practices highlighted in the papers (iv)Writing key lessons learnt or a critical reflection on the reviewed	Research paper and power point presentation

		research papers Week 12: Identification of best practice	
Week 17	**FINAL TERM**		

Assessment Scheme:	**Total marks 100**
Mid Term Marks:30 x- Test I = 10 xi- Test II = 10 xii- Assignment/ Quizz/ Presentations= 10	Final Term Marks: 70 vii- Attendance = 5 viii- Final Term Exam = 65

Recommended Books and References:

1- Ball, D. L., & Bass, H. (2000). *Interweaving content and pedagogy in teaching and learning to teach: Knowing and using mathematics*. In J. Boaler (Ed.), Multiple perspectives on mathematics teaching and learning (pp. 83–104).
2- Dossey, J. A. (1992). *The nature of mathematics: Its role and its influence.* In Grouws, D. A. (Ed.), Handbook of research on mathematics teaching and learning (pp. 39-48). New York: Macmillan.
3- de Lange, J. (2006). *Mathematical literacy for living OECD-PISA perspective*. Utrecht: Freudenthal Institute, Utrecht University.
4- Darling-Hammond, L., & Cobb, V. L. (1996). *The changing context of teacher education*. In F. B. Murrey (Ed.), The instructor 's handbook. San Francisco:
5- Jossey-Bass. Dossey, J. A. (1992). *The nature of mathematics: Its role and its influence.* In D. A. Grouws (Ed.), D. A. (Ed.), *Handbook of research on mathematics teaching and learning* (pp. 39–48). New York:
6- Leon, B., & Jaworski, B. (Eds.) (1995*). Technology in mathematics teaching: A bridge between teaching and learning*. Chartwell-Bratt.
7- Mathematical Association of America (2001). *The mathematical education of teachers,* Washington DC: Conference Board of Mathematical Sciences.
8- National Council of Teachers of Mathematics (2004). *Handbook of research on mathematics teaching and learning* (p. 111).
9- Stone Wiske, M. (1998). *Teaching for understanding: Linking research with practice*. San Francisco: Jossey-Bass Publishers, San Francisco.
10- Westport, CT: Ablex. Ball, D. L., & Cohen, D. K. (Eds.). (1999). *Developing practice, developing practitioners: Towards a practice-based theory of professional education. San Francisco*: Jossey-Bass Publishers.
11- Macmillan. Fauvel, J., & Jeremy, G. (Eds.). (1990). *The history of mathematics:* A reader. London: Macmillan. Lacombe, A. (1995). Mathematical *learning*

difficulties in the secondary school: Pupils' needs and teacher's role. Milton Keynes: Open University Press.

WEB RESOURCES

Mirzaxolmatovna, X. Z., & Ibrokhimovich, F. J. (2022). Methods And Techniques of Teaching in Mathematics Lessons in Primary School and Their Positive and Negative Aspects. The Peerian Journal, 5, 70-73.
Ibrokhimovich, F. J. (2022). Application Of Some Teaching Methods in Mathematics Lessons in Elementary Grades. *Journal of Pedagogical Inventions and Practices*, *5*, 15-17.
Ibrokhimovich, F. J. (2022). Teaching Mathematics in Elementary School: Issues and Solutions. *Eurasian Journal of Learning and Academic Teaching*, *4*, 84-87.

CONTENT COURSE
I-III
(FROM SELECTED DISCIPLINE-II)

INTEGRATED SCIENCE

CONTENT COURSE-I (FROM SELECTED DISCIPLINE-II: INTEGRATED SCIENCE)

INTEGRATED SCIENCE I

COURSE CODE: CoC / B.Ed.-Sci 303 (SEM V)
CREDIT HOURS: 3

Week	Content
Week 1-2	**Plants and Plant Growth** Basic parts of plants: seed, root, stem, branch, leaf • Autotrophs- living organism which can produce its own food using light, water, carbon dioxide, or other chemicals. Plants make their own food. • Flowers and seeds: seeds as food for plants and animals (for example, rice, nuts, wheat, corn) • Classification of plants: flowering plants and non-flowering plants • Two kinds of plants: deciduous and evergreen • Farming How some food comes from farms as crops How crops are harvested, types of crops How farmers must take special care to protect their crops from weeds and pests
Week 3	**Animal and Their Need** Plants make their own food, but animals get food from eating plants or other living things. • Heterotroph- Living organism that cannot produce its own food, instead consumes other organisms for energy. • Offspring are very much (but not exactly) like their parents. • Basic needs of animals • Most animal babies need to be fed and cared for by their parents; human babies are especially in need of care when young.
Week 4	**The Human Body** •The five senses and associated body parts: Sight: eyes Hearing: ears Smell: nose Taste: tongue Touch: skin • Taking care of your body: exercise, cleanliness, healthy foods, rest, Vision, Hearing
Week 5	**Matter, Molecule and Compounds**

	Basic concept of atoms • Names and common examples of three states of matter: solid (for example, wood, rocks) liquid (for example, water) gas (for example, air, steam) • Water as an example of changing states of matter of a single substance **Properties of matter (basics)** • Mass: the amount of matter in an object, similar to weight • Volume: the amount of space a thing fills • Density: how much matter is packed into the space an object fills • Vacuum: the absence of matter • Molecules**:** smallest particle in a chemical element or compound that has the chemical properties of that element or compound • Compounds: formed by combining two or more elements and have properties different from the constituent elements. • When single atoms combine with themselves or with other atoms, the result is a molecule. O_2 is a molecule of oxygen. NaCl is a molecule of salt, and because it has more than one element is called a compound.
Week 6-7	**Atomic Structure & Atomic Theory** • Structure of atom • Early theories of matter The early Greek theory of four elements: earth, air, fire, and water Later theories of Democritus: everything is made of atoms and nothing else. (“atom” in Greek means that which can’t be cut or divided); atoms of the same kind form a pure “element”) Alchemy in middle ages • Start of modern chemistry John Dalton revives the theory of the atom., matter is made of atoms, which are small indivisible particles. J.J. Thomson's plum pudding theory of divisible atom. The atoms consist of a big positively-charged sphere studded with negatively charged electrons. Rutherford found that the atom consisted of a small, dense, positively charged nucleus in the center of the atom and the negatively charged electrons surrounding it. Niels Bohr develops a model of the atom in shells that hold a certain number of electrons. Bohr’s model, plus the discovery of neutrons, helped explain the Periodic Table: atomic number, atomic weight, and isotopes Mendeleev develops the Periodic Table, showing that the properties of atoms of elements come in repeating (periodic) groups.
Week 8	**Mid Term Exam**

Week 9-10	**Chemical Bonds and Reactions** To get a stable outer shell of electrons, atoms either give away, take on, or share electrons. • Chemical reactions rearrange the atoms and the electrons in elements and compounds to form chemical bonds. **• Ionic bond** Atoms like sodium that have just one or two extra electrons are very energetic in giving them away. Elements with the same number of extra or few electrons can join with each other to make an ionic bond. Example: NaCl, table salt. **• Metallic bond** In the metallic bond, electrons are not given away between elements, but are arranged so that they are shared between atoms. Pure metals show this sharing, and the atoms can rearrange themselves in different ways, which explains why you can pound metals into different shapes. **• Covalent bond** Some atoms share electrons in a definite way, making them very stable and unreactive. Examples are H_2 and O_2. Carbon, which can take up or give away 4 electrons in covalent bonds, can help make molecules that can adopt almost any shape. It is the basis of life. **•Coordinate Covalent bond** A bond formed between two atoms in which shared pair of electron come from the same atom. In BF_3 molecule, Boron (B) has an empty p orbital. Since the electron configuration of B does not obey the octet rule, it forms a coordinate bond with an electron-rich species such as NH_3.The nitrogen atom in NH_3 has a lone electron pair that can be donated to the B atom of BF_3. Thus a coordinate covalent bond is formed. **• Kinds of reactions** Oxidation: a chemical reaction that commonly involves oxygen. More generally, oxidation is a reaction in which an atom accepts electrons while combining with other elements. The atom that gives away electrons is said to be oxidized. Examples: rusting of iron, burning of paper. Heat is given off. Reduction: the opposite of oxidation. Reduction involves the gaining of electrons. An oxidized material gives them away and heat is taken up. Acids: for example, vinegar, HCl, H_2SO_4; sour; turn litmus red Bases: for example, baking soda; bitter; turn litmus blue pH: ranges from 0-14; neutral = 7, acid = below 7, base = above 7 **Reactions with acids and bases** In water solution, an acid compound has an H ion (a proton lacking an electron) and the base compound has an OH ion (with an extra electron). When the two come together, they form HOH (water) plus a stable compound called a "salt." • How chemists describe reactions by equations, for example: HCl + NaOH = NaCl + H2O

	• A catalyst helps a reaction, but is not used up.
Week 11	**Introduction to Magnetism** Identify familiar everyday uses of magnets (for example, in toys, in cabinet locks, in "refrigerator magnets," etc.). • Classify materials according to whether they are or are not attracted by a magnet.
Week 12	**Properties of Matter: Measurement** Units of measurement: Length: centimeter, inch, foot Volume: gallon, quart Temperature: degrees Fahrenheit
	Introduction to Electricity Electric Current Electric circuit and Basic parts of simple electric circuits (for example, batteries, wire, bulb or buzzer, switch) • Conductive and nonconductive materials • Using electricity safely Safety rules for electricity (for example, never put your finger, or anything metallic, in an electrical outlet; never touch a switch or electrical appliance when your hands are wet or when you're in the bathtub; never put your finger in a lamp socket; etc.)
Week 13	Electricity as the charge of electrons • Static electricity and current electricity • Experiments with simple circuits (battery, wire, light bulb, filament, switch, fuse) • Closed circuit, open circuit, short circuit • Conductors and insulators • Electromagnets: how they work and common uses
Week 14	Basic terms and concepts (review from grade 4): Electricity is the charge of electrons in a conductor. Opposite charges attract, like charges repel. Conductors and insulators Open and closed circuits Short circuit: sudden surge of amperage due to the reduction of resistance in a circuit; protection from short circuits is achieved by fuses and circuit breakers Electrical safety • Electricity as the charge of electrons Electrons carry negative charge; protons carry positive charge Conductors: materials like metals that easily give up electrons Insulators: materials like glass that do not easily give up electrons • Static electricity A static charge (excess or deficiency) creates an electric field.

	Electric energy can be stored in capacitors (typically two metal plates, one charged positive and one charged negative, separated by an insulating barrier).
Week 15	Capacitor discharges can release fatal levels of energy. Grounding drains an excess or makes up a deficiency of electrons, because the earth is a huge reservoir of electrons. Your body is a ground when you get a shock of static electricity. Lightning is a grounding of static electricity from clouds. • Flowing electricity Electric potential is measured in volts. Electric flow or current is measured in amperes: 1 ampere = flow of 1 coulomb of charge per second (1 coulomb = the charge of 6.25 billion billion electrons). The total power of an electric flow over time is measured in watts. Watts = amps x volts; amps = watts/volts; volts = watts/amps. The unit of electrical resistance is the ohm.
Week 16	Final term Examination

RESOURCES

1. Anderson Community Schools. 1994. *Science curriculum: elementary - grades K-6*. [Place of publication not identified]: Anderson Community Schools.
2. Beals, Kevin. 2003. *Life through time: evolutionary activities for grades 5-8*. Berkeley: Great Explorations in Math and Science, Lawrence Hall of Science, University of California at Berkeley.
3. Gertz, Susan E., Dwight J. Portman, and Mickey Sarquis. 2000. *Teaching physical science through children's literature: 20 complete lessons for elementary grades*. [New York]: Learning Triangle Press.
4. Lorbeer, George C., and George C. Lorbeer. 2000. *Science activities for elementary students*. Boston: McGraw-Hill.
5. Arey, Charles K. 1961. *Science experiences for elementary schools*. New York: Bureau of Publications, Teachers College, Columbia University.
6. Hone, Elizabeth B., Alexander Joseph, and Edward Victor. 1971. *A sourcebook for elementary science*. New York: Harcourt, Brace, Jovanovich.
7. Clegg, Brian, Philip Ball, and Steve Rawlings. 2016. *30-second physics: the 50 most fundamental concepts in physics, each explained in half a minute*.
8. Raham, Gary. 1996. *Explorations in backyard biology: drawing on nature in the classroom, grades 4-6*. Englewood, Colo: Teacher Ideas Press.
9. Davies, D., Howe, A., Collier, C., Digby, R., Earle, S., & McMahon, K. (2003). Teaching science, design and technology in the early years. David Fulton Publishers.
10. Hassard, J., & Dias, M. (2013). The art of teaching science: Inquiry and innovation in middle school and high school. Routledge.

WEB RESOURCES

Life science, for elementary. 2014. http://www.kanopystreaming.com/node/107966.

Physical science, for elementary. 2014. http://www.kanopystreaming.com/node/107962.

Earth science, for elementary. 2014. http://www.kanopystreaming.com/node/107964.

CONTENT COURSE-II (FROM SELECTED DISCIPLINE-II: INTEGRATED SCIENCE)

INTEGRATED SCIENCE - II

COURSE CODE: CoC / B.Ed.-Sci 306 (SEM VI)
CREDIT HOURS: 3

Week	Content
Week 1-2	**Living Things and Their Environments** • Biotic and abiotic parts of an environment • Habitats Living things live in environments to which they are particularly suited. Specific habitats and what lives there, for example: Forest [oak trees, squirrels, raccoons, snails, mice] Meadow and prairie [wildflowers, grasses, prairie dogs] Underground [fungi, moles, worms] Desert [cactus, lizard, scorpion] Water [fish, oysters, starfish] All living things depend on their environment to supply them with what they need, including food, water, and shelter. • The food chain or food web: a way of picturing the relationships between living things Animals: big animals eat little ones, big animals die and are eaten by little ones. Plants: nutrients, water, soil, air, sunlight Habitats, interdependence of organisms and their environment • Special classifications of animals Herbivores: plant-eaters (for example, elephants, cows, deer) Carnivores: flesh-eaters (for example, lions, tigers) Omnivores: plant and animal-eaters (for example, bears) Extinct animals (for example, dinosaurs) • The concept of a "balance of nature" (constantly changing, not a static condition)
Week 3	**Environmental change and habitat destruction** • Environments are constantly changing, and this can sometimes pose dangers to specific habitats, for example: Effects of population and development Rainforest clearing, pollution, litter • Man-made threats to the environment Air pollution: emissions, smog Water pollution: industrial waste, run-off from farming

	• Measures we can take to protect the environment (for example, conservation, recycling)
Week 4-5	**The Human Body** **Cells Body Systems** • **Skeletal system:** skeleton, bones, skull • **Muscular system:** muscles • **Digestive system:** mouth, stomach • **Circulatory system:** heart and blood The circulatory and lymphatic systems Lymph, lymph nodes, white cells, tonsils Blood pressure, hardening and clogging of arteries • **Nervous system**: brain, nerves • **Endocrine system**
Week 6	**Germs, diseases, and preventing illness** • Taking care of your body: exercise, cleanliness, healthy foods, rest • Vaccinations • **The immune system** fights infections from bacteria, viruses, fungi. White cells, antibodies, antigens Vaccines, communicable and non-communicable diseases, epidemics Bacterial diseases: tetanus, typhoid, tuberculosis; antibiotics like penicillin, discovered by Alexander Fleming Viral diseases: common cold, chicken pox, mononucleosis, rabies, polio, AIDS
Week 7	**Reproduction** • Asexual reproduction Example of algae Vegetative reproduction: runners (for example, strawberries) and bulbs (for example, onions), growing plants from eyes, buds, leaves, roots, and stems • Asexual reproduction by spore-bearing plants (for example, mosses and ferns) • Sexual reproduction of non-flowering seed plants: conifers (for example, pines), male and female cones, wind pollination • Sexual reproduction of flowering plants (for example, peas) Functions of sepals and petals, stamen (male), anther, pistil (female), ovary (or ovule) Process of seed and fruit production: pollen, wind, insect and bird pollination, fertilization, growth of ovary, mature fruit Seed germination and plant growth: seed coat, embryo and endosperm, germination (sprouting of new plant), monocots (for example, corn) and dicots (for example, beans)

Week 8	**Mid Term Exam**
Week 9	**Elements** • Elements are the basic kinds of matter, of which there are a little more than one hundred. There are many different kinds of atoms, but an element has only one kind of atom. • Some well-known elements and their symbols Familiar elements, such as gold, copper, aluminum, oxygen, iron Most things are made up of a combination of elements. •Two important categories of elements: metals and non-metals Metals comprise about ⅔ of the known elements. Properties of metals: most are shiny, ductile, malleable, conductive
Week 10	Elements have atoms of only one kind, having the same number of protons. Non-metals tends to have a relatively low melting point, boiling point, and density. Properties of non-metal: brittle, poor thermal conductivity, poor electrical conductivity. • The Periodic Table: organizes elements with common properties Atomic symbol and atomic number Trends in properties of elements in periodic table
Week 11	**Solutions & Suspension** • A solution is formed when a substance (the solute) is dissolved in another substance (the solvent), such as when sugar or salt is dissolved in water; the dissolved substance is present in the solution even though you cannot see it. • Concentration and saturation (as demonstrated through simple experiments with crystallization) • Suspension is a type of heterogeneous mixture where solid particles do not dissolve in a liquid solution but remains suspended throughout the bulk of the medium. Example, mixture of chalk and water, mixture of dust particle and air, fog etc.

Week 12	**Magnetism and Electricity** • Earth's magnetism Earth's magnetism is believed to be caused by movements of charged atoms in the molten interior of the planet. Navigation by magnetic compass is made possible because the earth is a magnet with north and south magnetic poles. • Connection between electricity and magnetism Example: move a magnet back and forth in front of wire connected to a meter, and electricity flows in the wire. The reverse: electric current flowing through a wire exerts magnetic attraction. Spinning electrons in an atom create a magnetic field around the atom. Unlike magnetic poles attract, like magnetic poles repel. Practical applications of the connection between electricity and magnetism, for example: An electric generator creates alternating current by turning a magnet and a coil of wire in relation to each other; an electric motor works on the reverse principle. A step-up transformer sends alternating current through a smaller coil of wire with just a few turns next to a larger coil with many turns. This induces a higher voltage in the larger coil. A step-down transformer does the reverse, sending current through the larger coil and creating a lower voltage in the smaller one.
Week 13	**Simple Machines** Simple machines • lever • pulley • wheel-and-axle • gears: wheels with teeth and notches how gears work, and familiar uses (for example, in bicycles) • inclined plane • wedge • screw Friction and ways to reduce friction (lubricants, rollers, etc.)
Week 14	**Light and Optics** The speed of light: light travels at an amazingly high speed. • Light travels in straight lines (as can be demonstrated by forming shadows). • Transparent and opaque objects • Reflection and Refraction Mirrors: plane, concave, convex Uses of mirrors in telescopes and some microscopes • The spectrum: use a prism to demonstrate that white light is made up of a spectrum of colors. • Lenses can be used for magnifying and bending light (as in magnifying glass, microscope, camera, telescope, binoculars).

Week 15	Revision
Week 16	**Final Term Examination**

REFERENCE BOOKS

1. Anderson Community Schools. 1994. *Science curriculum: elementary - grades K-6*. [Place of publication not identified]: Anderson Community Schools.
2. Beals, Kevin. 2003. *Life through time: evolutionary activities for grades 5-8*. Berkeley: Great Explorations in Math and Science, Lawrence Hall of Science, University of California at Berkeley.
3. Gertz, Susan E., Dwight J. Portman, and Mickey Sarquis. 2000. *Teaching physical science through children's literature: 20 complete lessons for elementary grades*. [New York]: Learning Triangle Press.
4. Lorbeer, George C., and George C. Lorbeer. 2000. *Science activities for elementary students*. Boston: McGraw-Hill.
5. Arey, Charles K. 1961. *Science experiences for elementary schools*. New York: Bureau of Publications, Teachers College, Columbia University.
6. Hone, Elizabeth B., Alexander Joseph, and Edward Victor. 1971. *A sourcebook for elementary science*. New York: Harcourt, Brace, Jovanovich.
7. Clegg, Brian, Philip Ball, and Steve Rawlings. 2016. *30-second physics: the 50 most fundamental concepts in physics, each explained in half a minute*.
8. Raham, Gary. 1996. *Explorations in backyard biology: drawing on nature in the classroom, grades 4-6*. Englewood, Colo: Teacher Ideas Press.
9. Harlen, W., & Qualter, A. (2018). The teaching of science in primary schools. David Fulton Publishers.
10. National Research Council. (2009). Learning science in informal environments: People, places, and pursuits. National Academies Press.

WEB RESOURCES

Life science, for elementary. 2014. http://www.kanopystreaming.com/node/107966.
Physical science, for elementary. 2014. http://www.kanopystreaming.com/node/107962.
Earth science, for elementary. 2014. http://www.kanopystreaming.com/node/107964

CONTENT COURSE-III (FROM SELECTED DISCIPLINE-II: INTEGRATED SCIENCE)

INTEGRATED SCIENCE - III

COURSE CODE: CoC / B.Ed.-Sci 403 (SEM VII)
CREDIT HOURS: 3

Week	Content
Week 1	**CYCLES IN NATURE** **A. Seasonal Cycles** • The four seasons and earth's orbit around the sun (one year) Seasons and life processes Spring: sprouting, sap flow in plants, mating and hatching Summer: growth Autumn: ripening, migration Winter: plant dormancy, animal hibernation
Week 2–3	**B. Life Cycles** • The life cycle: the stages of change a living thing goes through during its life Stages: birth, growth, reproduction, death • All living things reproduce themselves. Reproduction may be asexual or sexual. Asexual reproduction is a type of reproduction which does not involve the fusion of gametes and produces individuals that are genetically identical to the parent. Examples of asexual reproduction: fission (splitting) of bacteria, spores from mildews, molds, and mushrooms, budding of yeast cells, regeneration and cloning Sexual reproduction requires the joining of special male and female cells, called gametes, to form a fertilized egg. • Reproduction in plants and animals From seed to seed with a plant From egg to egg with a chicken From frog to frog From butterfly to butterfly: metamorphosis
Week 4	**Sexual Reproduction in Animals** • Reproductive organs: testes (sperm) and ovaries (eggs) • External fertilization: spawning • Internal fertilization: birds, mammals • Development of the embryo: egg, zygote, embryo, growth in uterus, fetus, newborn
Week 5	**C. The Water Cycle** • Most of the earth's surface is covered by water.

	• The water cycle Evaporation and condensation Water vapour in the air, humidity Clouds: cirrus, cumulus, stratus Precipitation, groundwater
Week 6	**Introduction to Classification of Animals** •Scientists have divided living things into five large groups called kingdoms, as follows: Plant Animal Fungus (mushrooms, yeast, mold, mildew) Protist (algae, protozoans, amoeba, euglena) Moneran,also called Prokaryote (bacteria, blue-green algae/cyano bacteria) • Each kingdom is divided into smaller groupings as follows: Kingdom Phylum Class Order Family Genus Species •Scientists classify animals according to the characteristics they share, for example: Cold-blooded or warm-blooded Vertebrates (have backbones and internal skeletons) or invertebrates (do not have backbones or internal skeletons) •Different classes of vertebrates and major characteristics: fish, amphibians, reptiles, birds, mammals • Binomial nomenclature When classifying living things, scientists use special names made up of Latin words (or words made to sound like Latin words), which help scientists around the world understand each other and ensure that they are using the same names for the same living things. *Homo sapiens*: the scientific name for the species to which human beings belong (genus *Homo*, species *sapiens*) Taxonomists: biologists who specialize in classification

Week 7	**Plant Structures and Processes** **Structure: Non-vascular and Vascular Plants** • Non-vascular plants (for example, algae) • Vascular plants Vascular plants have tube-like structures that allow water and dissolved nutrients to move through the plant. Parts and functions of vascular plants: roots, stems and buds, leaves **Photosynthesis** • Photosynthesis is an important life process that occurs in plant cells, but not animal cells (photo = light; synthesis = putting together). Unlike animals, plants make their own food, through the process of photosynthesis • steps in photosynthesis process: energy from sunlight, chlorophyll, carbon dioxide and water, xylem and phloem, stomata, oxygen, sugar (glucose)
Week 8	**Mid Term Exam**
Week 9	**Cell Division and Genetics** Cell division, the basic process for growth and reproduction •Two types of cell division: mitosis (growth and asexual reproduction), meiosis (sexual reproduction) Asexual reproduction: mitosis; diploid cells (as in amoeba) Sexual reproduction: meiosis: haploid cells; combinations of traits How change occurs from one generation to another: either mutation or mixing of traits through sexual reproduction Why acquired characteristics are not transmitted • Gregor Mendel's experiments with purebred and hybrid peas Dominant and recessive genes Mendel's statistical analysis led to understanding that inherited traits are controlled by genes (now known to be DNA). • Modern understanding of chromosomes and genes Double helix (twisted ladder) of DNA coding; how DNA makes new DNA How DNA sequence makes proteins Genetic engineering Modern researchers in genetics: Francis Crick, James Watson, Severo Ochoa, Barbara McClintock
Week10	**Chemistry of Food and Respiration** Energy for most life on earth comes from the sun, typically from sun, to plants, to animals, back to plants. • Living cells get most of their energy through chemical reactions. All living cells make and use carbohydrates (carbon and water), the simplest of these being sugars. All living cells make and use proteins, often very complex compounds containing carbon, hydrogen, oxygen, and many other elements. Making these compounds involves chemical reactions which need water, and take place in and between cells, across cell walls. The reactions also need catalysts called "enzymes." Many cells also make fats, which store energy and food.

	• Energy in plants: photosynthesis Plants do not need to eat other living things for energy. Main nutrients of plants: the chemical elements nitrogen, phosphorus, potassium
Week 11	**Sound** Sound is caused by an object vibrating rapidly. Sounds travel through solids, liquids, and gases. Sound waves are much slower than light waves. • Qualities of sound Pitch: high or low, faster vibrations = higher pitch, slower vibrations = lower pitch Intensity: loudness and quietness • Human voice Larynx (voice box) Vibrating vocal cords: longer, thicker vocal cords create lower, deeper voices • Sound and how the human ear works • Protecting your hearing
Week 12	**Sound Waves** • General properties of waves Waves transfer energy by oscillation without transferring matter; matter disturbed by a wave returns to its original place. Wave properties: wavelength, frequency, speed, crest, trough, amplitude • Two kinds of waves: transverse (e.g. light) and longitudinal (e.g. sound) Common features of both kinds of waves Speed and frequency of wave determine wavelength. Wave interference occurs in both light and sound. Doppler effect occurs in both light and sound. • Sound waves: longitudinal, compression waves, made by vibrating matter, for example, strings, wood, air. While light and radio waves can travel through a vacuum, sound waves cannot. Sound waves need a medium through which to travel. Sound goes faster through denser mediums, that is, faster through solids and liquids than through air (gases). At room temperature, sound travels through air at about 340 meters per second (1,130 feet per second). Speed of sound = Mach number Supersonic booms; breaking the sound barrier • Frequency of sound waves measured in “cycles per second” or Hertz (Hz) Audible frequencies roughly between 20 and 20,000 Hz The higher the frequency, the higher the subjective “pitch” • Amplitude or loudness is measured in decibels (dB). Very loud sounds can impair hearing or cause deafness. Resonance, for example, the sound board of a piano, or plates of a violin

Week 13	**Energy** • Six forms of energy: mechanical, heat, electrical, wave, chemical, nuclear • The many forms of energy are interchangeable, for example, gasoline in a car, windmills, hydroelectric plants. • Sources of energy: heat (coal, natural gas, solar, atomic, geothermal, and thermonuclear), mechanical motion (such as falling water, wind) • Fossil fuels: a finite resource Carbon, coal, oil, natural gas Environmental impact of fossil fuels: carbon dioxide and global warming theory, greenhouse effect, oil spills, acid rain • Nuclear energy Uranium, fission, nuclear reactor, radioactive waste Nuclear power plants: safety and accidents (for example, Three Mile Island, Chernobyl)
	In physics, energy is defined as the ability to do work. • Energy as distinguished from work To have energy, a thing does not have to move. Work is the transfer of energy. • Two main types of energy: kinetic and potential Some types of potential energy: gravitational, chemical, elastic, electromagnetic Some types of kinetic energy: moving objects, heat, sound and other waves • Energy is conserved in a system.
Week14	**Work** In physics, work is a relation between force and distance: work is done when force is exerted over a distance. Equation: Work equals Force x Distance (W = F x D) Common units for measuring work: foot-pounds (in English system), joules (in metric system; 1 joule = 1 newton of force x 1 meter of distance)
	Power In physics, power is a relation between work and time: a measure of work done (or energy expended) and the time it takes to do it. Equation: Power equals Work divided by Time (P = W/T), or Power = Energy/Time Common units of measuring power: foot-pounds per second, horsepower (in English system); watts, kilowatts (in metric system)
	Heat Heat and temperature: how vigorously atoms are moving and colliding • Three ways that heat energy can be transferred: conduction, convection, radiation • Direction of heat transfer

Week 15	**Motion** States of matter (solid, liquid, gas) in terms of molecular motion •Velocity and speed The velocity of an object is the rate of change of its position in a particular direction. Speed is the magnitude of velocity expressed in distance covered per unit of time. Changes in velocity can involve changes in speed or direction or both. • Average speed = total distance traveled divided by the total time elapsed Formula: Speed = Distance/Time (S = D/T) Familiar units for measuring speed: miles or kilometers per hour
	Forces • The concept of force: force as a push or pull on an object Examples of familiar forces (such as gravity, magnetic force) A force has both direction and magnitude. Measuring force: expressed in units of mass, pounds in English system, newtons in metric system • Unbalanced forces cause changes in velocity. If an object is subject to two or more forces at once, the effect is the net effect of all forces. The motion of an object does not change if all the forces on it are in balance, having net effect of zero. The motion of an object changes in speed or direction if the forces on it are unbalanced, having net effect other than zero. To achieve a given change in the motion of an object, the greater the mass of the object, the greater the force required
	Density and Buoyancy • When immersed in a fluid (i.e. liquid or gas), all objects experience a buoyant force. The buoyant force on an object is an upward (counter-gravity) force equal to the weight of the fluid displaced by the object. Density = mass per unit volume Relation between mass and weight (equal masses at same location have equal weights) • How to calculate density of regular and irregular solids from measurements of mass and volume The experiment of Archimedes • How to predict whether an object will float or sink
Week 16	**Final Term Exam**

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1. Clegg, Brian, and Paul Birch. 2007. *Instant creativity: simple techniques to ignite innovation & problem solving*. London: Kogan Page. http://www.dawsonera.com/depp/reader/protected/external/AbstractView/S9780749451264

2. BBC - KS2 Bitesize - Science

    i. www.bbc.co.uk/bitesize/ks2/science

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PEDAGOGY-II (METHODS OF TEACHING FROM SELECTED DISCIPLINE-II: INTEGRATED SCIENCE)

TEACHING SCIENCE -II

COURSE CODE: PeC / B.Ed.-Sci 403
CREDIT HOURS: 3

Science education needs reform in the philosophical, instructional, and pedagogical dimensions of current practice. Particularly, instructional settings and strategies used by teachers can create an environment that fosters a constructive and active view of the learning process. Learning does not occur by passive absorption of scientific facts; rather, it involves learners in constructing their own meaning and assimilating new information to develop new understandings. In Science III, the overall thrust of the course is on the development of scientific knowledge, skills, and attitudes in Student Teachers in the areas of life science, physical science, and Earth and space science. Therefore, this course emphasizes developing inquiry, problem-solving, and decision-making abilities in Student Teachers so they may maintain a sense of wonder and curiosity about the world around them.

We believe that to make learners scientifically literate citizens requires diverse learning experiences that provide opportunities to explore, analyse, evaluate, synthesize, appreciate, and understand the interrelationships among science, technology, society, and the environment. This experiential learning will affect learners' personal lives, careers, and their roles as global citizens. Hence, the aim of developing this course is to address all of these facets of curriculum and instruction.

Course outcomes:

Knowledge

By the completion of the course, Student Teachers will be able to:

- discuss the concepts related to Life science, Physical science, and Earth & space science
- apply these understandings to interpret, integrate, and extend their knowledge
- discuss important features differentiating the traditional science classroom and the interactive science classroom.

Science, technology, society, and education (STSE)

By the completion of the course, Student Teachers will be able to:

- describe and discuss the nature of science and technology
- explain the relationships between science and technology and between the social and environmental contexts of science and technology
- develop and use the related skills and conceptual knowledge necessary for making connections between scientific, technological, social, and environmental issues
- apply the aspects of environmental education in their personal and social lives.

Skills

By the completion of the course, Student Teachers will be able to:

- exhibit the skills required for scientific and technological inquiry
- use these skills for solving problems as well as communicating scientific ideas and results
- work collaboratively
- make informed decisions in their personal and social lives
- use a variety of teaching skills while planning and conducting science lessons.

Attitudes

By the completion of the course, Student Teachers will be able to:

- use their understanding to support the responsible acquisition and application of scientific and technological knowledge to the mutual benefit of self, society, and the environment
- develop an interest in and motivation toward science education and related careers.

Teaching and learning approaches

Student Teachers would be introduced to science concepts through the inquiry approach, constructivism, and learning by doing. They would be encouraged to engage in independent learning, group projects, assignments, and presentations guided by the Instructor. Literature suggests that students learn more through experience, which makes learning more interactive and interesting. Therefore, the Instructor's role would be that of a facilitator who will bridge theoretical concepts with daily life experiences. This will provide Student Teachers an opportunity to learn science through the application approach.

Overview of the course

THEME 1: LIFE SCIENCE

UNIT 1:	**Overview of Science III: Creating linkages**
Learning outcomes	It is expected that Student Teachers will: describe the course outline, pedagogy, and assessment criteria build connections between their learning in different science courses explain the role of science in daily life.
Week #	Topics
1	Introduction to course project, intended topics to be covered, and assessment criteria Connections of Science III with earlier courses Science in daily life

UNIT 2:	**The constructivist approach to teaching the concept of heredity**
Learning outcomes	It is expected that Student Teachers will: experience the concept of heredity through the constructivist approach to teaching science explain different cell components through analogies discuss the implication of a constructivist approach for learning science in the classroom explain that cell components play an important role in heredity explain the structure of chromosomes with reference to their function elaborate the importance of DNA in terms of its function and importance for life differentiate between acquired and inherited traits.
Week #	Topics
2	Social constructivism and its implication for teaching science Cell components and cell division Basis of heredity (chromosomes, DNA, and genes in plant and animals) Human traits (acquired and inherited)
UNIT 3:	**Teaching biotechnology and genetic engineering through daily life applications**
Learning outcomes	It is expected that Student Teachers will: discuss the role of genes in determining characteristics and traits recognize the potential role (both positive and negative) of genetic engineering describe the common application of biotechnology in various fields discuss the ethical implication of biotechnology
Week #	Topics
3	Introduction to biotechnology General applications of biotechnology (agriculture, environment, health, food production and preservation) Ethical issues involved in biotechnology Introduction to Genetic Engineering, its pros and cons

THEME 2: PHYSICAL SCIENCE

UNIT 4:	**Laboratory work in the science classroom**
Learning outcomes	It is expected that Student Teachers will: use different laboratory instruments to measure physical quantities discuss safety and planning considerations for laboratory work in science teaching

Learning outcomes	explain the need for units when considering physical quantities explain derived quantities and obtain their units in terms of base units discuss the meaning and significance of accuracy and precision in science identify the nature and properties of elements discuss the arrangements of elements in the periodic table perform laboratory work to investigate chemical reactions in different compounds differentiate different groups of elements based on their chemical and physical properties investigate properties and uses of acid, alkalis, and salts prepare and use natural indicators to determine pH of different solutions.

Week #	Topics
4	Physical quantities (length, volume, mass, time) Système Internationale (SI) units (metre, litre, kilogram, second) Instruments for measurement (metre rule, measuring cylinder, flasks, pipettes) Accuracy and precision in measurements Laboratory work: Planning, precautions, and safety measures
5	Different types of elements in the periodic table Distribution of electrons: Valence shell configuration Arrangements of elements in the periodic table
6	Physical properties of different elements in the periodic table Chemical properties and the reactivity of elements in the periodic table
7	Properties and uses of acid, alkali and salt. pH and its range (1–14) in aqueous medium Natural indicators (from fruits and vegetables) Significance of laboratory work in science teaching

UNIT 5:	**Low-cost, high-thought materials when teaching force and pressure**
Learning outcomes	It is expected that Student Teachers will: investigate the relation between pressure, force, and area by using low-cost, high-thought resources discuss the hydraulic system explore water pressure and its application discuss the significance and implications of low-cost materials

	prepare low-cost, high-thought resources for their own teaching practice
Week #	Topics
8	Use of low-cost, high-thought resources in the science classroom Relation between pressure, force, and area Hydraulics and hydraulic systems Water pressure and its application
UNIT 6:	**Teaching heat and light through the inquiry approach**
Learning outcomes	It is expected that Student Teachers will: discuss the inquiry approach of teaching science and its implications for science teachers observe the effects of heat (thermal expansion and contraction) in different states of matter discuss the phenomena of thermal expansion and contraction at the molecular level discuss the application of thermal contraction and expansion in daily life explore the nature of light (phenomena such as transmission, absorption, and reflection) differentiate between reflection and refraction phenomena (process, effect, and causes) differentiate between different types of lenses compare the working of the human eye with a camera lens.
Week #	Topics
9	Activitymania vs. inquiry Thermal expansion and contraction (solids, liquids, and gases) Effects of heat (explanation at macro and micro levels)
10	Factors affecting the contraction and expansion process Application of expansion and contraction of solids in everyday life (concrete road surfaces, railway tracks, bridges, overhead power lines, telephone lines, pipelines)
11	Nature of light Reflection and refraction Types and uses of lenses Image formation in a simple camera and the human eye

UNIT 7:	**Common misconceptions about electricity**
Learning outcomes	It is expected that Student Teachers will: identify students' misconceptions about electricity design activities to teach the concept(s) based on students' misconceptions define current and investigate different types of circuits explain the process and factors of generating electricity design an experiment to generate electricity
Week #	Topics
12	Common misconceptions about electricity and its implications in the science classroom Static vs. moving charges: The concept of electric current Production of electricity Circuits Conductors Power source

THEME 3: EARTH AND SPACE SCIENCES

UNIT 8:	**Space exploration through ICT integration**
Learning outcomes	It is expected that Student Teachers will: compare the physical characteristics of different environments (planets and space) with that of the planet Earth explore the force of gravity and its implications in space investigate how aircraft, satellites, and spaceships have improved our knowledge about space and how they are used for space research discuss the importance and levels of ICT integration in the science classroom.
Week #	Topics
13	Levels and pros and cons of ICT integration Comparison of different environments (Space, Earth) Force of gravity and factors responsible for it Aircraft, satellites, and spaceships

UNIT 9:	**Science, Technology, Society, and Environment (STSE): A new approach to teaching science**
Learning outcomes	It is expected that Student Teachers will: reflect on teaching strategies to make learners aware of STSE issues, how to investigate, and how to make intelligent decisions describe the effects of human activity on the environment participate in environmental safety through social action understand the process of human growth and development discuss factors that affect the development process develop awareness about health care and its importance in daily life.
Week #	Topics
14	Science, Technology, Society, and Environment (STSE) Benefits and challenges related to teaching science through STSE
15	Effects of human activity on the environment Saving the Earth project
16	Healthy life: Growth and development Factors affecting growth and development process Health care and Balanced diet

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12. Halai, N. (2010). Teaching teachers and students about the nature of science. *Journal of Educational Research, 13*(1), 171–179.
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Course assignments

Suggested assignments are included in the unit guides of the course. Some are short-term assignments and others take several weeks to complete. Individual and group assignments are also provided.

These assignments are designed to deepen Student Teachers' learning and allow them to research and apply their knowledge to topics of personal interest. All the assignments count toward the final grade.