

**Department of STEM Education, Faculty of Education,  
Lahore College for Women University  
B. Ed. (Science Education)**

**Scheme of Studies of  
(2020-2024), (2021-2025), (2022-2026) sessions**

**Scheme of Studies with Semester Break Up**

S. #.	Course Code	Title of the Course	Credit Hours
<b>SEMESTER-I</b>			
1	CC/BSED101	English –I (Language in Use)	3
2	Maj/BSED102	Foundations of Education	3
3	Maj/BSED103	General Methods of Teaching	3
<b>Any Three Content Courses according to Subjects Studies at F. Sc. Level</b>			
4	EC/BSED104	Botany-I (Plant Diversity)	3
4.1	EC/BSED104	Botany-I (Plant Diversity) Practical	1
5	EC/BSED105	Chemistry-I (Physical Chemistry)	3
5.1	EC/BSED105	Chemistry-I (Physical Chemistry) Practical	1
6	EC/BSED106	Zoology-I (Animal Diversity-I: Classification, Phylogeny & Organization)	3
6.	EC/BSED106	Zoology-I (Animal Diversity-I: Classification, Phylogeny & Organization) Practical	1
<b>OR</b>			
4	EC/BSED107	Physics-I (Elementary Mechanics)	3
4.1	EC/BSED107	Physics-I (Elementary Mechanics) Practical	1
5	EC/BSED108	Mathematics A-I (Calculus-I)/ Mathematics B-I (Vector & Mechanics-I)	4
6	EC/BSED109	Computer 1-Programming Fundamental 1	3
6.1	EC/BSED109	Computer 1-Programming Fundamental 1 Practical	1
		<b>Total semester Credit Hours</b>	<b>21</b>

<b>SEMESTER-II</b>			
1	CC/BSED110	English-II (Academic Reading & Writing)	3
2	Maj/BSED111	Instructional and Communication Technology in Science Education	3
3	Maj/BSED112	Human Development & Learning	3
<b>Any Three Content Courses according to subject studied at F. Sc. Level</b>			
4	EC/BSED113	Botany-II (Plant Systematic Anatomy & Development Theory)	3
4.1	EC/BSED113	Botany-II (Plant Systematic Anatomy & Development Theory) Practical	1
5	EC/BSED114	Chemistry-II (Inorganic Chemistry)	3
5.1	EC/BSED114	Chemistry-II (Inorganic Chemistry) Practical	1

6	EC/BSED115	Zoology-II (Animal Diversity-II: Classification, Phylogeny & Organization)	3
6.1	EC/BSED115	Zoology-II (Animal Diversity-II: Classification, Phylogeny & Organization) Practical	1
<b>OR</b>			
4	EC/BSED116	Physics-II (Waves & Oscillation)	3
4.1	EC/BSED116	Physics-II (Waves & Oscillation) Practical	1
5	EC/BSED117	Mathematics A-II (Plane Curves & Analytic Geometry)/ Mathematics B-II (Mechanics-II)	4
6	EC/BSED118	Computer II-Programming Fundamental II	3
6.1	EC/BSED118	Computer II-Programming Fundamental II Practical	1
<b>TOTAL SEMESTER CREDIT HOURS</b>			<b>21</b>
<b>SEMESTER-III</b>			
1	CC/BSED201	English-III (Communication Skills)	3
2	CC/BSED210	Pakistan Studies	2
3	Maj/BSED202	Critical Thinking & Reflective Practices	3
<b>Any Three Content Courses according to subject studied at F. Sc. Level</b>			
4	EC/BSED203	Botany-III (Cell Biology, Evolution & Genetics)	3
4.1	EC/BSED203	Botany-III (Cell Biology, Evolution & Genetics) Practical	1
5	EC/BSED204	Chemistry-III (Organic Chemistry)	3
5.1	EC/BSED204	Chemistry-III (Organic Chemistry) Practical	1
6	EC/BSED205	Zoology-III (Animal Form & Function I: A Comparative Perspective)	3
6.1	EC/BSED205	Zoology-III (Animal Form & Function I: A Comparative Perspective) Practical	1
<b>OR</b>			
4	EC/BSED206	Physics-III (Electricity & Magnetism )	3
4.1	EC/BSED206	Physics-III (Electricity & Magnetism ) Practical	1
5	EC/BSED207	Mathematics A-III (Linear Algebra)/ Mathematics B-III (Calculus-II)	4
6	EC/BSED208	Computer III- Object Oriented Programming	3
6.1	EC/BSED208	Computer III- Object Oriented Programming Practical	1
<b>TOTAL SEMESTER CREDIT HOURS</b>			<b>20</b>
<b>SEMESTER-IV</b>			
1	CC/BSED218	Islamic Studies / Ethics	2
2	Maj/BSED209	Educational Leadership & Management	3
3	Maj/BSED217	Educational Assessment & Evaluation	3
<b>Any Three Content Courses according to subject studied at F. Sc. Level</b>			
4	EC/BSED211	Botany-IV (Plant Physiology & Ecology)	3
4.1	EC/BSED211	Botany-IV (Plant Physiology & Ecology) Practical	1
5	EC/BSED212	Chemistry-IV (General Chemistry)	3
5.1	EC/BSED212	Chemistry-IV (General Chemistry) Practical	1

6	EC/BSED213	Zoology-IV (Animal Form & Function II: A Comparative Perspective)	3
6.1	EC/BSED213	Zoology-IV (Animal Form & Function II: A Comparative Perspective) Practical	1
<b>OR</b>			
4	EC/BSED214	Physics-IV (Modern Physics)	3
4.1	EC/BSED214	Physics-IV (Modern Physics) Practical	1
5	EC/BSED215	Mathematics A-IV (Ordinary Differential Equations)/ Mathematics B-IV (Metric Spaces & Group Theory)	4
6	EC/BSED216	Computer 1V-Data Structure & algorithm	3
6.1	EC/BSED216	Computer 1V-Data Structure & algorithm Practical	1
<b>TOTAL SEMESTER CREDIT HOURS</b>			<b>20</b>
<b>SEMESTER-V</b>			
1	Maj/BSED 301	Curriculum Development	3
2	Maj/BSED 302	Creative Arts Crafts and Calligraphy	3
3	TPA/BSED320	Teaching Practice (Supervised School Visits)	3
<b>Any One Courses according to Area of Specialization</b>			
4	EC/BSED303	Teaching of Biology	3
4	EC/BSED304	Teaching of Chemistry	3
4	EC/BSED305	Teaching of Physics	3
4	EC/BSED306	Teaching of Mathematics	3
<b>Any One Courses according to Area of Specialization</b>			
5	EC/BSED307	Advance Botany-I (Environmental Biology)	3
5.1	EC/BSED307	Advance Botany-I (Environmental Biology) Practical	1
<b>OR</b>			
5	EC/BSED308	Advance Chemistry-I (Environmental Chemistry)	3
5.1	EC/BSED308	Advance Chemistry-I (Environmental Chemistry) Practical	1
<b>OR</b>			
5	EC/BSED309	Advance Mathematics-I (Real Analysis)	4
<b>OR</b>			
5	EC/BSED310	Advance Physics-I (Mathematical Methods of Physics-I)	4
<b>OR</b>			
5	EC/BSED311	Advance Computer-1 (Data Communication and Computer Network)	3
5.1	EC/BSED311	Advance Computer-1 (Data Communication and Computer Network) Practical	1
<b>OR</b>			
5	EC/BSED312	Advance Zoology-I (Developmental Biology)	3
5.1	EC/BSED312	Advance Zoology-I (Developmental Biology) Practical	1
<b>TOTAL SEMESTER CREDIT HOURS</b>			<b>16</b>
<b>SEMESTER-VI</b>			
1	Maj/BSED313	Research Methods in Education	3

2	Maj/BSED314	Islamic Culture, interfaith harmony & Ideology of Pakistan	3
3	TPB/BSED330	Students Teaching & Observation (Professional)	6
<b>Any Two Courses according to Area of Specialization</b>			
4	EC/BSED315	Advance Botany-II (Plant Anatomy)	3
4.1	EC/BSED315	Advance Botany-II (Plant Anatomy) Practical	1
5	EC/BSED316	Advance Botany-III (Palynology)	3
5.1	EC/BSED316	Advance Botany-III (Palynology) Practical	1
<b>OR</b>			
4	EC/BSED317	Advance Chemistry-II (Physical Chemistry)	3
4.1	EC/BSED317	Advance Chemistry-II (Physical Chemistry) Practical	1
5	EC/BSED318	Advance Chemistry-III (Applied/Industrial Chemistry)	3
5.1	EC/BSED318	Advance Chemistry-III (Applied/Industrial Chemistry) Practical	1
<b>OR</b>			
4	EC/BSED319	Advance Mathematics-II (Algebra-Group Theory & Linear Algebra)	4
5	EC/BSED320	Advance Mathematics-III(Complex Analysis & Differential Geometry)	4
<b>OR</b>			
4	EC/BSED321	Advance Computer-II Operating System	3
4.1	EC/BSED321	Advance Computer-II Operating System Practical	1
5	EC/BSED322	Advance Computer-III Data Base systems	3
5.1	EC/BSED322	Advance Computer-III Data Base systems Practical	1
<b>OR</b>			
4	EC/BSED323	Advance Physics-II (Quantum Mechanics-I)	3
4.1	EC/BSED323	Advance Physics-II (Quantum Mechanics-I) Practical	1
5	EC/BSED324	Advance Physics-III (Electronics)	3
5.1	EC/BSED324	Advance Physics-III (Electronics) Practical	1
<b>OR</b>			
4	EC/BSED325	Advance Zoology-II (Cell & Molecular Biology)	3
4.1	EC/BSED325	Advance Zoology-II (Cell & Molecular Biology) Practical	1
5	EC/BSED326	Advance Zoology-III (Physiology)	3
5.1	EC/BSED326	Advance Zoology-III (Physiology) Practical	1
<b>TOTAL SEMESTER CREDIT HOURS</b>			<b>20</b>
<b>SEMESTER-VII</b>			
1	Maj/BSED401	Contemporary Issues & Trends in Science Education	3
2	Maj/BSED402	Educational Statistics	3
3	Maj/BSED429	Environmental Education	3
4	Maj/BSED430	Research Project	3
<b>Any TWO Courses according to Area of Specialization</b>			
5	EC/BSED403	Advance Botany-IV (Soil & Agricultural Microbiology)	3

5.1	EC/BSED403	Advance Botany-IV (Soil & Agricultural Microbiology) Practical	1
6	EC/BSED404	Advance Botany-V (Plant Nutrition & Soil Fertility)	3
6.1	EC/BSED404	Advance Botany-V (Plant Nutrition & Soil Fertility) Practical	1
<b>OR</b>			
5	EC/BSED405	Advance Chemistry-IV (Inorganic Chemistry)	3
5.1	EC/BSED405	Advance Chemistry-IV (Inorganic Chemistry) Practical	1
6	EC/BSED406	Advance Chemistry-V (Organic Chemistry)	3
6.1	EC/BSED406	Advance Chemistry-V (Organic Chemistry) Practical	1
<b>OR</b>			
5	EC/BSED407	Advance Mathematics-IV (Topology & Functional Analysis)	4
6	EC/BSED408	Advance Mathematics-V (Advance Analysis)	4
<b>OR</b>			
5	EC/BSED409	Advance Computer-IV Human Computer Interaction	3
5.1	EC/BSED409	Advance Computer-IV Human Computer Interaction Practical	1
6	EC/BSED410	Advance Computer-V Web Development and Design	3
6.1	EC/BSED410	Advance Computer-V Web Development and Design Practical	1
<b>OR</b>			
5	EC/BSED411	Advance Physics-IV (Mathematical Methods of Physics-II)	3
5.1	EC/BSED411	Advance Physics-IV (Mathematical Methods of Physics-II) Practical	1
6	EC/BSED412	Advance Physics-V (Quantum Mechanics-II)	3
6.1	EC/BSED412	Advance Physics-V (Quantum Mechanics-II) Practical	1
<b>OR</b>			
5	EC/BSED413	Advance Zoology-IV (Evolution & Principles of Systematic)	3
5.1	EC/BSED413	Advance Zoology-IV (Evolution & Principles of Systematic) Practical	1
6	EC/BSED414	Advance Zoology-V (Biochemistry)	3
6.1	EC/BSED414	Advance Zoology-V (Biochemistry) Practical	1
<b>TOTAL SEMESTER CREDIT HOURS</b>			<b>20</b>
<b>SEMESTER-VIII</b>			
1	Maj/BSED 415	School, Community & Teacher	3
2	Maj/BSED 431	STEM Education	3
2	Maj/BSED 431	STEM Education Practical	1
3	TPC/BSED310	Students Teaching & Observation (Professional)	6
<b>Any TWO Courses according to Area of Specialization</b>			
4	EC/BSED416	Advance Botany-VI (Plant Breeding & Horticulture)	3

4.1	EC/BSED416	Advance Botany-VI (Plant Breeding & Horticulture) Practical	1
5	EC/BSED417	Advance Botany-VII (Salinity & Water Logging)	3
5.1	EC/BSED417	Advance Botany-VII (Salinity & Water Logging) Practical	1
<b>OR</b>			
4	EC/BSED418	Advance Chemistry-VI (Bio-Chemistry)	3
4.1	EC/BSED418	Advance Chemistry-VI (Bio-Chemistry) Practical	1
5	EC/BSED419	Advance Chemistry-VII (Agricultural Chemistry)	3
5.1	EC/BSED419	Advance Chemistry-VII (Agricultural Chemistry) Practical	1
<b>OR</b>			
4	EC/BSED421	Advance Mathematics-VI (Methods of Mathematical Physics)	4
5	EC/BSED422	Advance Mathematics-VII (Numerical Analysis)	4
<b>OR</b>			
4	EC/BSED423	Advance Computer VI Computer Architecture and Organization	3
4.1	EC/BSED423	Advance Computer VI Computer Architecture and Organization Practical	1
5	EC/BSED424	Advance Computer VII Artificial Intelligence	3
5.1	EC/BSED424	Advance Computer VII Artificial Intelligence Practical	1
<b>OR</b>			
4	EC/BSED425	Advance Physics-VI (Nuclear Physics)	3
4.1	EC/BSED425	Advance Physics-VI (Nuclear Physics) Practical	1
5	EC/BSED426	Advance Physics-VII (Solid State Physics)	3
5.1	EC/BSED426	Advance Physics-VII (Solid State Physics) Practical	1
<b>OR</b>			
4	EC/BSED427	Advance Zoology-VI (Genetic & Wildlife)	3
4.1	EC/BSED427	Advance Zoology-VI (Genetic & Wildlife) Practical	1
5	EC/BSED428	Advance Zoology-VII (Zoogeography & Paleontology)	3
5.1	EC/BSED428	Advance Zoology-VII (Zoogeography & Paleontology) Practical	1
<b>TOTAL SEMESTER CREDIT HOURS</b>			<b>21</b>
<b>Program Total Credit hours</b>			<b>159</b>

**Note:** The courses mentioned in the scheme of studies has been used for the sessions earlier than 2023. This program offers all the major courses from the department of STEM Education. However the faculty is hired from the departments of natural sciences i.e dep. of Botany, Chemistry, Computer Science, and Physics for sciences courses