

## Curriculum

### BS-Climate Change and Sustainable Development

Duration	:	4 years
Number of semesters	:	8
Number of weeks per semester	:	16 weeks of teaching excluding examination
HEC recommended number of Credit Hours	:	135-148
Total Credit Hours (CHr)	:	137

First Year						
S.No.	Semester 1	Credit Hour		S.No.	Semester 2	Credit Hour
1	Fundamentals of climate science and sustainable development	3 (3-0)		1	Geography and climate dynamics	3 (3-0)
2	Earth System Science	3 (3-0)		2	Quantitative Reasoning-II	3 (3-0)
3	Quantitative Reasoning-I	3 (3-0)		3	Social Sciences for Sustainability	2(2-0)
4	Islamic Studies (Religious Edu / Ethics for non-Muslim students)	2 (2-0)		4	Functional English	3 (3-0)
5	Applications of Information & Communication Technologies	3 (2-1)		5	Pakistan Studies	2(2-0)
6	Understanding of Holy Quran – I	1 (0-1)		6	Photography & Flim Making	2(2-0)
7	Basic Chemistry	3 (2-1)		7	Data Analytics & Visualization for Climate	3 (2-1)
	<b>Total</b>	<b>18</b>			<b>Total</b>	<b>18</b>
Second Year						
S.No.	Semester 3	Credit Hour		S.No.	Semester 4	Credit Hour
1	Fundamentals of Meteorology and Atmospheric Science	3(2-1)		1	Environmental Management Systems	3 (3-0)
2	Regional Climate Impacts & Adaptation	3 (3-0)		2	Climate-Smart Agriculture & Food Security	3 (2-1)
3	Environmental Pollution & Control	3(2-1)		3	Fundamentals of Ecology	3(2-1)
4	Fundamental of GIS & Spatial Analysis	3(2-1)		4	Biodiversity Conservation and Climate	3(2-1)
5	Expository Writing	3 (3-0)		5	Understanding of Holy Quran -II	1 (0-1)
6	Ideology & Constitution of Pakistan	2(2-0)		6	Entrepreneurship	2 (2-0)
	<b>Total</b>	<b>17</b>		7	Machine-Learning & Predictive Analytics for Climate	3 (3-0)
					<b>Total</b>	<b>18</b>

Third Year					
S.No.	Semester 5	Credit Hour	S.No.	Semester 6	Credit Hour
1	Low Carbon Technologies	3 (3-0)	1	Renewable Energy Transition	3 (3-0)
2	Climate Finance & Carbon Markets	3 (3-0)	2	Carbon Sequestration	3 (3-0)
3	Ocean-Atmosphere Interactions	3 (3-0)	3	Remote Sensing & Earth Observation	3 (3-0)
4	Community based climate actions	3 (3-0)	4	Project Management for Climate & Sustainability	3 (3-0)
5	Environmental Microbiology	3(2-1)	5	Climate Policy, law and Diplomacy	3 (3-0)
6	Green House Gas Emissions: Monitoring & Mitigation	3 (3-0)	6	Internship	3 (3-0)
	<b>Total</b>	<b>18</b>		<b>Total</b>	<b>18</b>

Fourth Year					
S.No.	Semester 7	Credit Hour	S.No.	Semester 8	Credit Hour
1	AI & Emerging Technologies in Climate Change	3(2-1)	1	Green Technologies	3 (3-0)
2	Sustainable Urban Development	3 (3-0)	2	Climate Modelling and Simulation	3(2-1)
3	Climate Risk Assessment	3 (3-0)	3	Sustainable Consumption and Production	3 (3-0)
4	Life Cycle Assessment	3 (3-0)	4	Nature Based Solution for Climate	3 (3-0)
5	Research Methods and Scientific Writing	3 (3-0)	5	Capstone Project	3 (3-0)
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>