

**AMITY SCHOOL OF EARTH & ENVIRONMENT  
SCIENCES**

**FLEXILEARN**

-Freedom to design your degree



**PROGRAMME STRUCTURES**

**2020**

**AMITY UNIVERSITY HARYANA**

**GURUGRAM**

# 13751 B.Sc. (Honors) Earth Sciences (Total Credits-150)

## Programme Structure-2020

### FIRST SEMESTER

Course Code	Course Title	Lectures (L) Hours Per Week	Tutorial (T) Hours Per Week	Practical (P) Hours Per Week	Total Credit
ESC2101	Basics of Earth System Sciences	3	-	-	3
ESC2102	Earth Surface Features & Processes	3	-	-	3
ESC2105	Mathematics-I	2	-	-	2
ESC2109	Physics-I	2	-	-	2
ESC2110	Chemistry-I	2	-	-	2
ESC2111	Biology	2	-	-	2
ESC2107	Chemistry Laboratory	-	-	2	1
ESC2108	Field Survey-I	-	-	-	2
<b>Open Electives</b>					<b>*7+3</b>
LAN2151	Foreign Language-I* French-I	3	-	-	3
LAN2152	German-I				
LAN2153	Spanish-I				
LAN2154	Russian-I				
LAN2155	Chinese-I				
LAN2156	Portuguese-I				
LAN2157	Korean-I				
LAN2158	Japanese-I				
LAN2159	Hindi-I **				
CSS2151	Effective Listening *				
BEH2151	Understanding Self for Effectiveness*	1	-	-	1
ENV2151	Environmental Studies-I*	2	-	-	2
	Minor Track Course (Flexi)	-	-	-	<b>3</b>
<b>TOTAL</b>					<b>27</b>

\*\* Hindi as Foreign Language for Foreign National Students

### SECOND SEMESTER

Course Code	Course Title	Lectures (L) Hours Per Week	Tutorial (T) Hours Per Week	Practical (P) Hours Per Week	Total Credit
ESC2201	Crystallography & Mineralogy	3	-	-	3
ESC2206	Mathematics-II	2	-	-	2
ESC2210	Structural Geology	3	-	-	3

ESC2211	Physics-II	2	-	-	2
ESC2212	Chemistry-II	2	-	-	2
ESC2208	Earth Science Laboratory-I	-	-	4	2
ESC2209	Field Survey-II	-	-	-	2
<b>Open Electives</b>					<b>*7+3</b>
LAN2251	Foreign Language-II*	3	-	-	3
LAN2251	French-II				
LAN2252	German-II				
LAN2253	Spanish-II				
LAN2254	Russian-II				
LAN2255	Chinese-II				
LAN2256	Portuguese-II				
LAN2257	Korean-II				
LAN2258	Japanese-II				
LAN2259	Hindi-II				
CSS2251	Presentation Skills *	1	-	-	1
BEH2251	Problem solving and creative Thinking*	1	-	-	1
ENV2251	Environmental Studies-II*	2	-	-	2
	Minor Track Course (Flexi)	-	-	-	<b>3</b>
<b>TOTAL</b>					<b>26</b>

### SUMMER PROJECT- I

**SUMMER PROJECT/INTERNSHIP (DURING SUMMER BREAK:** Summer Internship will be held at the end of 2<sup>nd</sup> Semester (4-6 weeks), evaluation will be done at end of 3<sup>rd</sup> Semester.)

### THIRD SEMESTER

Course Code	Course Title	Lectures (L) Hours Per Week	Tutorial (T) Hours Per Week	Practical (P) Hours Per Week	Total Credit
ESC2301	Igneous Petrology	3	-	-	3
ESC2302	Sedimentology	2	-	-	2
ESC2303	Metamorphic Petrology	2	-	-	2
ESC2304	Atmospheric Science	2	-	-	2
ESC2309	Marine Science	2	-	-	2
ESC2307	Earth Science Laboratory-II	-	-	4	2
ESC2308	Field Survey-III	-	-	-	3
ESC2335	Summer Project Evaluation-I	-	-	-	3
<b>Open Electives</b>					<b>*4+3</b>

LAN2351	Foreign Language-III*	2	-	-	2
LAN2352	French-III				
LAN2353	German-III				
LAN2354	Spanish-III				
LAN2355	Russian-III				
LAN2356	Chinese-III				
LAN2357	Portuguese-III				
LAN2358	Korean-III				
LAN2359	Japanese-III				
LAN2359	Hindi-III				
CSS2351	Reading & Comprehension *	1	-	-	1
BEH2351	Group Dynamics and Team Building*	1	-	-	1
	Minor Track Course (Flexi)	-	-	-	3
<b>TOTAL</b>					<b>26</b>

#### FOURTH SEMESTER

Course Code	Course Title	Lectures (L) Hours Per Week	Tutorial (T) Hours Per Week	Practical (P) Hours Per Week	Total Credit
ESC2405	Economic Geology	2	-	-	2
ESC2406	Geochemistry	3	-	-	3
ESC2410	Remote Sensing & GIS	3	-	-	3
ESC2412	Geophysics	2	-	-	2
ESC2413	Paleontology	2	-	-	2
ESC2408	Earth Science Laboratory-III	-	-	4	2
ESC2409	Field Survey-IV	-	-	-	3
<b>Open Electives</b>					<b>*4+3</b>
LAN2451	Foreign Language-IV*	2	-	-	2
LAN2452	French-IV				
LAN2453	German-IV				
LAN2454	Spanish-IV				
LAN2455	Russian-IV				
LAN2456	Chinese-IV				
LAN2457	Portuguese-IV				
LAN2458	Korean-IV				
LAN2459	Japanese-IV				
LAN2459	Hindi-IV				
CSS2451	Corporate Communication*	1	-	-	1
BEH2451	Stress and Coping Strategies	1	-	-	1
	Minor Track Course (Flexi)	-	-	-	3
<b>TOTAL</b>					<b>24</b>

**SUMMER PROJECT-II (4-6 WEEKS)**

**SUMMER PROJECT/INTERNSHIP (DURING SUMMER BREAK:** Summer Internship will be held at the end of 4<sup>th</sup>Semester (4-6 weeks), evaluation will be done at end of 5<sup>th</sup>Semester.)

**FIFTH SEMESTER**

Course Code	Course Title	Lectures (L) Hours Per Week	Tutorial (T) Hours Per Week	Practical (P) Hours Per Week	Total Credit
ESC2503	Exploration Geology	2	-	-	2
ESC2509	Stratigraphy of India	3	-	-	3
ESC2510	Engineering Geology	2	-	-	2
ESC2511	Hydrogeology	2	-	-	2
ESC2507	Earth Science Laboratory-IV	-	-	4	2
ESC2508	Field Survey-V	-	-	-	3
ESC2535	Summer Project Evaluation-II	-	-	-	6
<b>Open Electives</b>					<b>*4+3</b>
LAN2551	Foreign Language-V*	2	-	-	2
LAN2552	French-V				
LAN2553	German-V				
LAN2554	Spanish-V				
LAN2555	Russian-V				
LAN2556	Chinese-V				
LAN2557	Portuguese-V				
LAN2558	Korean-V				
LAN2559	Japanese-V				
LAN2559	Hindi-V				
CSS2551	Employability Skills *	1	-	-	1
BEH2551	Individual ,Society and Nations	1	-	-	1
	Minor Track Course (Flexi)	-	-	-	<b>3</b>
<b>TOTAL</b>					<b>27</b>

**SIXTH SEMESTER**

Course Code	Course Title	Lectures (L) Hours Per Week	Tutorial (T) Hours Per Week	Practical (P) Hours Per Week	Total Credit
ESC2603	Coal and Petroleum Geology	3	-	-	3
ESC2604	Hazard Assessment & Risk Management	2	-	-	2
ESC2633	Workshop / Seminar / Conference/ Symposium	-	-	-	1
ESC2637	Dissertation	-	-	-	9
<b>Open Electives</b>					<b>*2+3</b>

CSS2651	Workplace Communication	1	-	-	1
BEH2651	Interpersonal Communication and Relationship Management	1	-	-	1
	Minor Track Course (Flexi)	-	-	-	<b>3</b>
	<b>TOTAL</b>				<b>20</b>

13619 M.Sc. Environmental Sciences & Management (Total Credit-100)

Programme Structure-2020

**FIRST SEMESTER**

Course Code	Course Title	Lectures (L) Hours Per Week	Tutorial (T) Hours Per Week	Practical/Field work (P) Hours Per Week	Total Credit
ENV4101	Ecology and Ecosystem Dynamics	3	-	-	3
ENV4102	Earth System Sciences	3	-	-	3
ENV4103	Environmental Biology	2	-	-	2
ENV4109	Chemistry of Environment	3	-	-	3
ENV4110	Environmental Physics & Energy	3	-	-	3
ENV4111	Basic Mathematics	2	-	-	2
ENV4107	Analytical Laboratory-I	-	-	6	3
ENV4131	Term Paper/Seminar	-	-	-	1
<b>Open Electives</b>					<b>5</b>
CSS4151	Basics of Communication	1	-	-	1
BEH4151	Self-Development and Interpersonal Skills	1	-	-	1
LAN4151	Foreign Business Language French-I	3	-	-	3
LAN4152	German-I				
LAN4153	Spanish-I				
LAN4154	Russian-I				
LAN4155	Chinese-I				
LAN4156	Portuguese-I				
LAN4157	Korean-I				
LAN4158	Japanese-I				
LAN4159	Hindi-I **				
<b>TOTAL</b>					<b>25</b>

\*\* Hindi as Foreign Language for Foreign National Students

## SECOND SEMESTER

Course Code	Course Title	Lectures (L) Hours Per Week	Tutorial (T) Hours Per Week	Practical/Field work (P) Hours Per Week	Total Credit
ENV4201	Pollution Control and Management	3	-	-	3
ENV4204	Environmental Analysis: Tools and Techniques	3	-	-	3
ENV4209	Atmospheric Science & Climate Change	3	-	-	3
ENV4210	Geoinformatics for Environmental Management	3	-	-	3
ENV4211	Statistical Tools and Research Methodology	2	-	-	2
ENV4212	Analytical Laboratory-II	-	-	6	3
ENV4231	Term Paper/Seminar	-	-	-	1
ENV4232	Project (Field Survey)	-	-	-	2
<b>Open Electives</b>					<b>5</b>
CSS4251	Corporate Communication	1	-	-	1
BEH4251	Behavioral Communication and Relationship Management	1	-	-	1
LAN4251	Foreign Business Language French-II	3	-	-	3
LAN4252	German-II				
LAN4253	Spanish-II				
LAN4254	Russian-II				
LAN4255	Chinese-II				
LAN4256	Portuguese-II				
LAN4257	Korean-II				
LAN4258	Japanese-II				
LAN4259	Hindi-II				
<b>TOTAL</b>					<b>25</b>

**SUMMER INTERNSHIP (DURING SUMMER BREAK):** Summer Internship will be held at the end of 2<sup>nd</sup> Semester (4-6 weeks), evaluation will be done in the 3<sup>rd</sup> Semester and credits will be added in the 3<sup>rd</sup> Semester.)

### THIRD SEMESTER

Course Code	Course Title	Lectures (L) Hours Per Week	Tutorial (T) Hours Per Week	Practical/ Field work (P) Hours Per Week	Total Credit
ENV4301	Environmental Conservation and Sustainable Development	3	-	-	3
ENV4313	Water Resources Management	3	-	-	3
ENV4314	Eco-toxicology, Health and Safety	3	-	-	3
ENV4315	Waste Management & Valorization	2	-	-	2
ENV4316	Analytical Laboratory -III	-	-	6	3
ENV4317	Environmental Economics	2	-	-	2
ENV4331	Term Paper/Seminar/ Workshop/ Conference/ Training	-	-	-	1
ENV4335	Summer Internship Evaluation + Project Formulation	-	-	-	6
<b>Concentration Electives (Any One)</b>					<b>3</b>
ENV4309	Environmental Biotechnology	3	-	-	3
ENV4310	Environmental Geology	3	-	-	3
ENV4311	Green Energy	3	-	-	3
ENV4312	Waste Water Treatment	3	-	-	3
<b>Open Electives</b>					<b>4</b>
CSS4351	Interpersonal Communication	1	-	-	1
BEH4351	Leading Through Teams	1	-	-	1
LAN4351	Foreign Business Language	2	-	-	2
LAN4352	French-III				
LAN4353	German-III				
LAN4354	Spanish-III				
LAN4355	Russian-III				
LAN4356	Chinese-III				
LAN4357	Portuguese-III				
LAN4358	Korean-III				
LAN4359	Japanese-III				
LAN4359	Hindi-III				
<b>TOTAL</b>					<b>30</b>

## FOURTH SEMESTER

Course Code	Course Title	Lectures (L) Hours Per Week	Tutorial (T) Hours Per Week	Practical/Field work (P) Hours Per Week	Total Credit
ENV4401	Environmental Law and Environmental Impact Assessment	3	-	-	3
ENV4402	Urban Ecosystem and Industrial Ecology	2	-	-	2
ENV4403	Natural Hazards and Disaster Management	2	-	-	2
ENV4431	Term Paper/Seminar (Research Article)	-	-	-	1
ENV4437	Research based Project work**	-	-	-	12
	<b>TOTAL</b>				<b>20</b>

\*\*Student will be sent to laboratories at universities, national institute and industries for their project based research work during 4<sup>th</sup> semester. At the end of 4<sup>th</sup> semester student will be evaluated on the basis of dissertation followed by presentation of their research work.