

School of Basic Sciences: Bachelor of Science (Honours with Research) in Green Hydrogen (4Yrs)

Year 1							
Semester-I							
S. No.	Category	Name of the Course					
			L	T	P	S	C
1	Core	Fundamentals of Green Hydrogen and Sustainability	3	1	0	0	4
2	Core	Renewable and Non-Renewable Energy Sources	3	1	0	0	4
3	AEC-1	English Proficiency I	0	0	2	0	2
4	AEC-2	Today's Science, Tomorrow's World I	2	-	-	-	2
5	MDC-1	Foundation of Programming	2	0	2	0	4
6	GE	Minor / Interdisciplinary Elective I	-	-	-	-	4
Total Credits							20
Semester-II							
S. No.	Category	Name of the Course					
			L	T	P	S	C
1	Core	Hydrogen: Energy Vector & Elemental Chemistry	3	0	1	0	4
2	Core	Electrochemistry for Green Hydrogen Technologies	3	0	1	0	4
3	Core	Thermodynamics and Chemical Kinetics	3	0	1	0	4
4	AEC-3	English Proficiency II	-	-	-	0	2
5	VAC-1	Data and Digital Literacy	-	-	-	-	2
6	GE	Minor / Interdisciplinary Elective II	-	-	-	0	4
Total Credits							20
Year 2							
Semester-III							
S. No.	Category	Name of the Course					
			L	T	P	S	C
1	Core	Hydrogen Production Technologies and Safety Engineering	3	1	0	0	4
2	Core	Desalination, Electrolysis & Hydrogen Generation Systems	3	0	1	0	4
3	Core	Solid State Chemistry	3	1	0	0	4

4	VAC-2	AI and Cognitive Systems	-	-	-	-	2
5	SEC-1	Statistical Computing with R	1	0	2	0	3
6	Internship	Academic Internship	-	-	-	-	2
7	GE	Minor / Interdisciplinary Elective III	-	-	-	-	4
Total Credits							23
Semester-IV							
S. No.	Category	Name of the Course					
			L	T	P	S	C
1	Core	Materials for Hydrogen Storage and Transport	3	0	1	0	4
2	Core	Fuel Cells: Chemistry, Types and Innovations	3	0	1	0	4
3	Core	Green Chemistry and Environmental Impact	3	1	0	0	4
4	VAC-3	Prompting and AI Tools	-	-	-	-	2
5	SEC-2	Choose From the Basket	-	-	-	0	3
6	MDC-2	Choose From the Basket	-	-	-	0	2
7	GE	Minor / Interdisciplinary Elective IV	-	-	-	0	4
Total Credits							23
Year 3							
Semester-V							
S. No.	Category	Name of the Course					
			L	T	P	S	C
1	Core	Instrumentation and Safety in Hydrogen Systems (Tools, SOPs, sensors)	3	0	1	0	4
2	Core	Hydrogen Plant Engineering and Process Design	3	1	0	0	4
3	Elective	Specialization Elective 1	3	1	0	0	4
4	GE	Minor / Interdisciplinary Elective V	-	-	-	0	4
5	SEC-3	AI-Driven Data Visualisation and Storytelling	1	0	1	1	3
6	AEC-4	Today's Science, Tomorrow's World II	2	0	0	0	2

7	Internship	Academic/Research/Industry	-	-	-	-	2
Total Credits							23
Semester-VI							
S. No.	Category	Name of the Course					
			L	T	P	S	C
1	Core	Hydrogen Techno Economic Analysis and Carbon Market	3	1	0	0	4
2	Elective	Specialization Elective -2	-	-	-	0	4
3	Elective	Specialised Elective-3	-	-	-	0	4
4	Elective	Specialised Elective-4	-	-	-	0	4
5	GE	Minor / Interdisciplinary Elective VI	-	-	-	0	4
6	MDC-3	Choose From the Basket	-	-	-	0	3
Total Credits							23
Year 4							
Semester-VII							
S. No.	Category	Name of the Course					
			L	T	P	S	C
1	Core	Automation and AI in Advanced Green Hydrogen Systems	3	1	0	0	4
2	Elective	Specialised Elective-5	-	-	-	0	4
3	Elective	Specialised Elective-6	-	-	-	0	4
4	GE	Minor / Interdisciplinary Elective VII	-	-	-	0	4
5	GE	Minor / Interdisciplinary Elective VIII	-	-	-	0	4
Total Credits							20
Semester-VIII							
S. No.	Category	Name of the Course					
			L	T	P	S	C
1	Project	Dissertation					12
Total Credits							12
Total Credit in 4Years= 164							

Discipline Specific Electives						
S. No.	Category	Name of the Course				
			L	T	P	C
1.	Elective 1	Modeling and Simulation Tools in Hydrogen Systems	2	0	2	4
2.	Elective 2	Hydrogen Storage, Transportation & Distribution Technologies	3	1	0	4
3.	Elective 3	Engineering Graphics and CAD for Sustainable Energy Systems	2	0	2	4
4.	Elective 4	Hydrogen Applications: Industry, Mobility and Power	3	1	0	4
5.		Project	-	-	-	4
6.	Elective 5	Advanced Systems in Green Hydrogen and Global Policy	3	1	0	4
7.	Elective 6	Safety in Green Hydrogen Production and Handling	3	1	0	4
7.	Elective 7	Hydrogen in Transportation and Mobility	3	1	0	4

Multidisciplinary Courses (MDC)

S. No.	Category	Name of the Course	L	T	P	C
1	MDC-1	Foundation of Programming	2	0	2	4
2	MDC-2	Indian legal systems for sciences	2	0	0	2
3	MDC-2	Stock exchange	2	0	0	2
4	MDC-2	Machine learning	3	0	0	3
5	MDC-3	Environmental Toxicology and Society	3	0	0	3
6	MDC-3	Research Methodology	3	0	0	3

Value added Courses (VAC)

S. No.	Category	Name of the Course	L	T	P	C
1.	VAC-1	Data and Digital Literacy	-	-	-	2
2.	VAC-2	AI and Cognitive Systems	-	-	-	2
3	VAC-3	Prompting and AI Tools	-	-	-	2
4	VAC-4	IT Tools and Data Analytics	-	-	-	3

Skill Enhancement Courses (SEC)

S. No.	Category	Name of the Course	L	T	P	C
1.	SEC-1	Statistical Computing with R	1	0	2	3
2.	SEC-1	Python for Scientific Computing	2	0	1	3

3.	SEC-2	Introduction to Artificial Intelligence	2	0	1	3
4.	SEC-2	AI-Driven Data Visualisation and Storytelling	1	0	2	3
5.	SEC-3	Testing of Cosmetics and Hygienic Products	2	0	1	3
6.	SEC-3	Innovation and Entrepreneurship	3	0	0	3
Ability Enhancement Courses (AEC)						
S. No.	Category	Name of the Course	L	T	P	C
1.	AEC-1	English Proficiency I	0	0	2	2
2.	AEC-2	English Proficiency II	0	0	2	2
3.	AEC-3	Today's Science, Tomorrow's World I	2	0	0	2
4.	AEC-4	Today's Science, Tomorrow's World II	2	0	0	2