

SUSTAINABLE DEVELOPMENT GOALS

17 PARTNERSHIPS FOR THE GOALS



17.4.1 - Does your university as a body have a commitment to meaningful education around the SDGs across the university, that is relevant and applicable to all students?

Manav Rachna University (MRU) is strongly committed to integrating the Sustainable Development Goals (SDGs) into its curriculum, ensuring relevance across all academic programs. The entire curriculum is mapped to the 17 SDGs, and innovative teaching methods are used to engage students with sustainability topics. Students also participate in SDG-based projects, solving local challenges through project-based learning, with evaluation rubrics reflecting SDG alignment. The **Manav Rachna Centre for Peace and Sustainability (MRCPS)** plays a central role, focusing on key areas such as women empowerment, quality education, environment conservation, economic development, and peace. Through initiatives like the **Peace and Sustainability Student Club (MRPSC)**, students actively contribute to real-world SDG solutions.

COURSE MAPPING WITH (SDGS)

The entire curriculum is mapped with 17 SDGs which is one of the distinctive features. It follows innovative teaching pedagogies, tweaks the curriculum as the situation demands. (The detailed mapping is given in Annexure 1)

ATTAINMENT OF VARIOUS UNSDGs THROUGH VARIOUS COURSES AND PEDAGOGIES.

UN has defined 17 SDGs. The department of ECE strives to attain and implement SDGs through the courses offered and various pedagogies like project based learning, industry internships, industry collaborations etc. The details are as follows.

Attainment of UN SDGs through PBL in various courses

The department of ECE has adopted Project Based Learning in various forms.

- (a) Minor projects in laboratory courses.
- (b) Minor projects in theory along with laboratory. In case of advanced level courses this pedagogy helps the students develop strong fundamentals up to half the semester. In rest half of the semesters the students are expected to come up with a minor project in the relevant field or a combined project which utilizes the knowledge of various technical disciplines
- (c) Major project in each course.

Such pedagogy caters to UNSDG 4, 9 and 11.

The projects can be developed catering to any other UNSDG depending upon the interest of student. Projects have been building around problems on clean water, air etc. E waste up cycling has addressed the sustainability problem with clean and healthy environment.

ENCOURAGING STUDENTS TO WORK ON UNSDGs

The department encourages students to take up projects related to sustainability and thus the Rubrics include few points on the choice of the Topic. The projects which can benefit the society and environment are encouraged.

UNSDG 3 Students have taken up projects on Pocket EGG monitoring device, Prosthetic hand, Brain controlled devices etc. which cater to UNSDG 3.

UNSDG 17 The department encourages students to work in collaboration with industries, take up industry internships, partner with students of other streams to achieve the target project objectives. This caters to UNSDG 17.

ALIGNMENT OF PROBLEM STATEMENTS WITH UN SDGS AND SDG BASED RUBRICS

Project Based Learning is a good pedagogy to provide learning skills, competencies , and attitude to the students to help them work towards achieving sustainable development goals.

By incorporating Project based learning into the classroom, young minds can actually be trained to think logically, investigate unsolved social problems and find the solutions by integrating science & Technology which can be a contributing factor towards achieving UN SDG Goals.

PBL also instills a global mindset as working towards UN SDGs is actually taking them ahead to solve global challenges.

Therefore, at the ideation stage only we have designed our rubrics so as to clear the expectation of teacher/mentor to the student which directs and motivates towards finding an unsolved societal problem as the problem statement to progress in their course.

Following grading criteria are used to guide and motivate the students to work towards SDG Challenges at the ideation stage.

PBL rubrics mapping with (SDGs) (SAMPLE) (The details are given in Annexure 2)

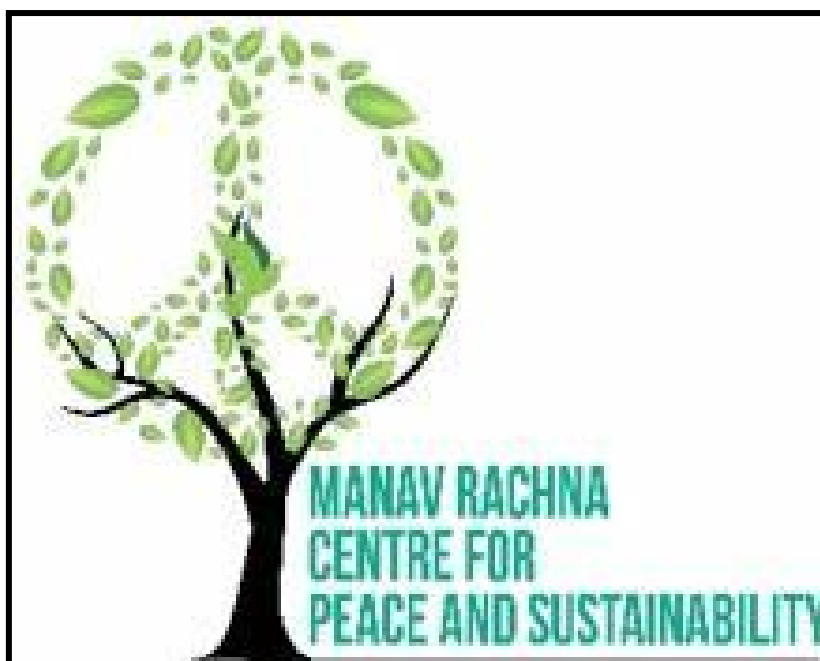
Stage I:- Ideation					
SNo	Rubrics	Max Marks (15)	Needs Improvement	Meets Expectation	Exceeds Expectations
R1. 1	Problem Statement	2	The problem chosen is very common and being solved using fundamental machine learning algorithms	The problem chosen is very common and being solved using latest learning algorithms	The problem chosen is unique and less addressed and being solved using fundamental / advanced learning algorithms
		scale	1	1.5	2
R1. 2	Holistic Scope of Sustainability	1	Project is not aligned with UN SDGs	Project is aligned with one or more UN SDGs	
		scale	0	1	

R1.3	Region of relevance	1.5	Problem is being addressed at Local Level	Problem is being addressed at national Level	Problem is being addressed at global Level
		scale	0.5	1.5	1.5

ORIENTATION ABOUT SDGS

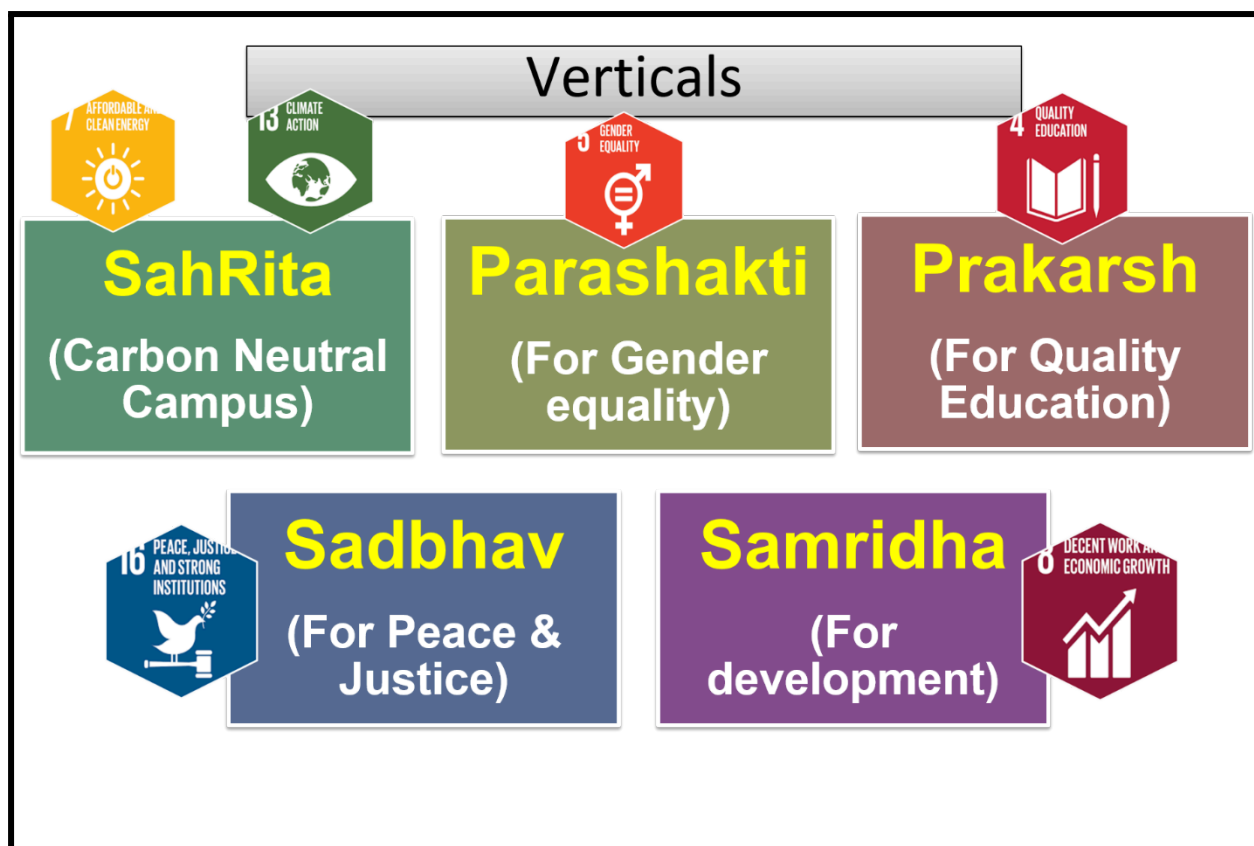
University conducts sessions and workshops to make them aware about SDGs during orientation for students and faculties.

MANAV RACHNA CENTRE FOR PEACE AND SUSTAINABILITY



Manav Rachna Centre for Peace and Sustainability (MRCPS) is deeply committed to providing meaningful education around the Sustainable Development Goals (SDGs) across the university, and its focus is relevant and applicable to all students. MRCPS, established in 2019 under the visionary guidance of Dr. O.P. Bhalla, is a hub dedicated to promoting peace, sustainability, and social change. The center's core objectives include spreading education and training on the SDGs, fostering values of peace, sustainability, and ethics, and encouraging students to contribute to the development of sustainable communities.

MRCPS operates through five key verticals—**PARASHAKTI** (Women Empowerment), **PRAKARSH** (Quality Education), **SAHRITA** (Environment Conservation), **SAMRIDDHA** (Economic Development), and **SADBHAV** (Peace)—that focus on various SDGs. These verticals specifically target education, research, training, and community outreach, with each vertical addressing specific goals such as gender equality (SDG 5), quality education (SDG 4), environmental conservation (SDG 13), economic growth (SDG 8), and promoting peace (SDG 16).



The university's initiatives, including the **Peace and Sustainability Student Club (MRPSC)**, actively engage students in practical actions related to the SDGs. Through the club, students become **Green Warriors**, **Peace Champions**, and **Gender Champions**, thereby playing a direct role in environmental conservation, promoting peace, and advocating for gender equality. This ensures that the education provided is not only theoretical but also practically applicable to real-world challenges.

Moreover, MRCPS encourages students to take part in research projects related to the SDGs and hosts awareness programs like **Project Pahal** (educating underprivileged communities), **ESDP** (SDG awareness), and **Kuch Kahna Hai** (addressing child abuse). The university's recognition through various awards, such as the **WCDM DRR Awards** and the **Institutions of Happiness** award, reflects its commitment to integrating SDGs into its educational framework and fostering a culture of peace and sustainability.

SUSTAINED: EDUCATION FOR SUSTAINABLE DEVELOPMENT PROGRAMME

- "SustainEd" Program Overview:
 - Education for Sustainable Development Program at Manav Rachna University.
 - Aims to nurture tomorrow's stewards and sustainable citizens.
- Empowering Youth:
 - Focuses on the role of youth in promoting sustainability.
 - Trains university students to become sustainability ambassadors.
- Holistic Approach:

- Prepares students during their higher education journey and beyond.
- Encourages long-term commitment to sustainability.



The audience for the project "SUSTAINED: Nurturing Future Changemakers with Sustainable Dreams and Global Goals" includes school students, university students, and, more broadly, the youth demographic. The project aims to educate and engage these young individuals in sustainable development goals and initiatives, fostering a sense of responsibility and empowerment among them to become future changemakers and advocates for global sustainability.

SUSTAINABILITY WALL



MRCPS stands as a strong advocate for incorporating SDGs into university education, making it not only relevant but essential for all students. It creates a space where students are

empowered to take action towards sustainable development while aligning their academic pursuits with global goals for peace, equity, and environmental stewardship.

Annexure 1

Department of Electronics and Communication Engineering

Attainment of various UNSDGs through various Courses and Pedagogies

UN has defined 17 SDGs. The department of ECE strives to attain and implement SDGs through the courses offered and various pedagogies like project based learning, industry internships, industry collaborations etc. The details are as follows.

Course mapping with (SDGs)

Semester 3				
Program	Course	Integrated SDG		Topics
B.Tech (ECE)	Introduction to Research	SDG9	SDG11	What is Research and its impact Capturing the current research trends Insight about scientific research performed by renowned experts in the related field(casDo's and Don'ts pertaining to research
B.Tech (ECE)	Electronic Design Workshop	SDG9	SDG3, SDG 11	Projects in healthcare and clean environment.
B.Tech (ECE)	Electronic Waste Management	SDG 12, SDG 13, SDG 14, SDG 15	SDG 12, SDG 13, SDG 14, SDG 15	Impact of increasing E-waste in air, land and water pollution and life, Methods to reduce them , health hazards due to e-waste etc

Semester 4				
Program	Course	Integrated SDG		Topics
B.Tech (ECE)	Innovation and Research-I	SDG9	SDG11	Collection of research papers related to previously identified gap/problem. Comprehend and arrange the literature based on the idea, Presenting the collected data and inferring it with the further scope of expansion and Designing the experiment wherever applicable.

Semester 5				
Program	Course	Integrated SDG		Topics
B.Tech (ECE)	IOT Networks and Protocols	SDG3	SDG9	Deployment and Operational View, Other Relevant architectural views. Real-World Design Constraints-Introduction, Technical Design constraints-hardware
B.Tech (ECE)	Digital Signal Processing	SDG9	SDG11	applications of digital filter design, introduction to speech processing, image processing
B.Tech (ECE)	Innovation and Research-II	SDG9	SDG11	Conduct experiments/ build prototype Tabulating and recording Analysis and interpretation of the data Comparison of the results with other reported experiments Interpretation of observations

2. Attainment of UN SDGs through PBL in various courses

The department of ECE has adopted Project Based Learning in various forms.

- Minor projects in laboratory courses.
- Minor projects in theory along with laboratory. In case of advanced level courses this pedagogy helps the students develop strong fundamentals up to half the semester. In rest half of the semesters the students are expected to come up with a minor project in the relevant field or a combined project which utilizes the knowledge of various technical disciplines
- Major project in each course.

Such pedagogy caters to UNSDG 4, 9 and 11.

The projects can be developed catering to any other UNSDG depending upon the interest of student. Projects have been building around problems on clean water, air etc. E waste up cycling has addressed the sustainability problem with clean and healthy environment.

3. Encouraging students to work on UNSDGs

The department encourages students to take up projects related to sustainability and thus the Rubrics include few points on the choice of the Topic. The projects which can benefit the society and environment are encouraged.

4. **UNSDG 3** Students have taken up projects on Pocket EGG monitoring device, Prosthetic hand, Brain controlled devices etc. which cater to UNSDG 3.

5. **UNSDG 17** The department encourages students to work in collaboration with industries, take up industry internships, partner with students of other streams to achieve the target project objectives. This caters to UNSDG 17.

Department of Mechanical Engineering

Attainment of various UNSDGs through various Courses and Pedagogies

Semester1				
Program	Course	Integrated SDG		Topics
B.TECH (ME)	Basics of Electronics & Electrical Engineering	SDG7	SDG11	Digital electrics, Energy efficient circuits,
B.TECH (ME)	Constitution of India	SDG11	SDG16	All about Indian constitutions and human rights
Semester2				
Program	Course	Integrated SDG		Topics
B.TECH (ME)	Environmental Science	SDG13	SDG11	Renewable and Non-Renewable Resources, Ecosystems, Biodiversity and its conservation, Environmental Pollution
Semester3				
Program	Course	Integrated SDG		Topics
B.TECH (ME)	Introduction To Research	SDG9	SDG11	What is Research and its impact, Capturing the current research trends , Insight about scientific research performed by renowned experts in the related field
Semester4				
Program	Course	Integrated SDG		Topics
B.TECH (ME)	Research Innovation-I	SDG9	SDG11	Collection of research papers related to previously identified gap/problem Comprehend and arrange the literature based on the idea, Presenting the collected data and inferring it with the further scope of expansion and Designing the experiment wherever applicable.
Semester5				
Program	Course	Integrated SDG		Topics
B.TECH (ME)	3D Printing	SDG9	SDG9	Additive Manufacturing, Innovation in Manufacturing Industry

B.TECH (ME)	Environmental Ethics & Sustainable Development	SDG13	SDG15	Challenges to Sustainable Development and Sustainable Development Goals, Sustainability Strategies & Reporting, Sustainable Development and Contemporary Issues
B.TECH (ME)	Green Computing	SDG13	SDG15	E-Waste Legislation, End of Life Management of E-Waste, Environmentally Sound E-Waste Management
B.TECH (ME)	E-Waste Management	SDG13	SDG15	Minimizing Power Usage, Green Data Centers, Greening Your Information Systems
B.TECH (ME)	Essence of Indian Traditional Knowledge	SDG11	SDG16	fundamental to protecting and promoting indigenous peoples' cultures and identities
B.TECH (ME)	Research Innovation-II	SDG9	SDG11	Conduct experiments/ build prototype Tabulating and recording Analysis and interpretation of the data. Comparison of the results with other reported experiments. Interpretation of observations
Semester 7				
Program	Course	Integrated SDG		Topics
B.TECH (ME)	Renewable Energy Sources	SDG7	SDG13	Solar Energy, Wind Energy, Biomass Energy, Geothermal Energy, Wave Energy, MHD and Fuel Cell
B.TECH (ME)	Heating, Ventilation and Air Conditioning	SDG7	SDG13	Heat load calculation, ventilation, Air conditioning, human comfort, etc.
B.TECH (ME)	Entrepreneurship	SDG9	SDG17	The new business opportunities have encouraged entrepreneurship on a grand scale. Children are constantly practicing entrepreneurship
B.TECH (ME)	Energy Conservation & management	SDG7	SDG13	Energy conservation, energy audits, economics etc.

B.TECH (ME)	Applied Philosophy	SDG10	SDG16	Human Rights And Laws
B.TECH (ME)	Applied Psychology	SDG16		Introduction to Psychology, Psychological Abuse
B.TECH (ME)	Applied Sociology	SDG8	SDG10	Social change & mobility
Semester8				
Program	Course	Integrated SDG		Topics
B.TECH (ME)	Project	SDG3	SDG8	Solar Power, Composites, Electric Vehicles, etc.

B.TECH Computer Science & Engineering

Course mapping with (SDGs)

Semester 1				
Program	Course	Integrated SDG		Topics
B.Tech Computer Science & Engineering	ENVIRONMENTAL STUDIES	SDG1 3	SDG11	Renewable and Non-Renewable Resources, Ecosystems Biodiversity and its conservation, Environmental Pollution
	USER INTERFACE-I (HTML5,CSS,JAVASCRIPT,JQUER Y)	SDG9	SDG11	website designing and development using HTML, CSS and Javascript
	OVERVIEW OF DATA SCIENCE & MACHINE LEARNING	SDG9	SDG11	Machine Learning overview, Automation, Intelligent System, AI
	DIGITAL PRODUCT ENGINEERING AND DESIGN THINKING	SDG9	SDG11	Design Thinking, Product Development
	INTRODUCTION TO INFORMATION SECURITY	SDG9	SDG11	Smart City, Sustainable Development

Semester 2				
Program	Course	Integrated SDG		Topics
B.Tech. Computer Science & Engineering	CLOUD COMPUTING	SDG1 2	SDG11	Virtualization, Virtual Machines, Load Scheduling, Task scheduling, resource management]
	BASICS OF ELECTRONICS & ELECTRICAL ENGINEERING	SDG7	SDG11	Digital electrics, Energy efficient circuits
	UNIVERSAL HUMAN VALUES	SDG1 6	SDG3	Peace, Sustainability, Love
	AGILE SOFTWARE DEVELOPMENT	SDG9	SDG11	energy efficient Software engineering
	PYTHON PROGRAMMING	SDG9	SDG12	Lightweight, energy efficient programming language
	INTRODUCTION TO STANDARDS, FRAMEWORKS AND KEY TECHNOLOGY CONCEPTS	SDG9	SDG11	Smart City, Sustainable Development

Semester 3				
Program	Course	Integrated SDG		Topics
B.Tech. Computer Science & Engineering	INTRODUCTION TO RESEARCH	SDG 3	SDG 6	Carbon Footprint, Innovation in Health care, Use of IOT for social well being
	ANALYSIS & DESIGN OF ALGORITHMS	SDG 9	SDG 12	Energy efficient and cost effective software designing

	USER INTERFACE-II (MONGODB, TYPESCRIPT, ANGULAR JS)	SDG 9	SDG 11	Web designing and web development
	SUPERVISED LEARNING	SDG 9	SDG 11	Machine learning algorithms and techniques to achieve sustainable computing
	APP. PHILOSOPHY/APP. PSYCHOLOGY/ APP. SOCIOLOGY	SDG 16	SDG 1	Study of mental functions and behaviors to help support peace and harmony in society
	DATA STRUCTURES & ALGORITHMS	SDG 9	SDG 11	Study and design of algorithms to support innovation and research
	B.Tech Computer Science & Engineering	SDG 9	SDG 12	Learn database management scheme in energy and cost effective way
	SOFTWARE CRAFTMANSHIP	SDG 11	SDG 12	Designing software to support sustainable development
	SECURE CODING IN C/C++	SDG 11	SDG 12	Making the systems secure from theft and hacking
	INTRODUCTION TO RESEARCH	SDG 9	SDG 11	Innovation and research related to achieve sustainable development

Semester 4				
Program	Course	Integrated SDG		Topics
B.Tech. Computer Science & Engineering	ESSENCE OF INDIAN TRADITIONAL KNOWLEDGE	SDG4	SDG16	Fundamental to protecting and promoting indigenous peoples'

				cultures and identities
	OPERATING SYSTEM	SDG9	SDG12	Learning and exploring a software programme required to manage and operate a computing device, and making it energy efficient
	PROGRAMMING FOR PROBLEM SOLVING USING PYTHON	SDG9	SDG11	Lightweight, energy efficient programming language
	COMPUTER ARCHITECTURE & ORGANIZATION	SDG9	SDG12	Internal computer programming and hardware networking
	UNSUPERVISED LEARNING & NEURAL NETWORK	SDG9	SDG11	Training of a machine using information that is neither classified nor labeled in order to make it work in an efficient way that will help to make work of mankind more easy and efficient
	INDIAN CONSTITUTION	SDG1 1	SDG16	All about Indian constitutions and human rights

	COMPUTER NETWORKS	SDG9	SDG12	Learning energy efficient network design
	MODERN WEB AND MOBILE FRAMEWORKS	SDG9	SDG12	Making energy efficient mobile frameworks to reduce carbon emissions
	DIGITAL FORENSICS	SDG9	SDG12	Electronic evidence is a component of almost all criminal activities and digital forensics support is crucial for law enforcement investigations.
	USER INTERFACE-II (MONGODB, TYPESCRIPT, ANGULAR JS)	SDG9	SDG11	Website designing and development using HTML, CSS and JavaScript
	INDIAN CONSTITUTION	SDG11	SDG16	All about Indian constitutions and human rights
	ESSENCE OF INDIAN TRADITIONAL KNOWLEDGE	SDG11	SDG16 Institutions	Fundamental to protecting and promoting indigenous peoples' cultures and identities

	ENTREPRENEURSHIP	SDG9	SDG11	The new business opportunities have encouraged entrepreneurship on a grand scale. Children are constantly practicing entrepreneurship
--	------------------	------	-------	---

Semester 5				
Program	Course	Integrated SDG		Topics
B.Tech. Computer Science & Engineering	ENVIRONMENTAL ETHICS & SUSTAINABLE DEVELOPMENT/ GREEN COMPUTING/ E-WASTE MANAGEMENT	SDG13	SDG15	Challenges to Sustainable Development and Sustainable Development Goals, Sustainability Strategies & Reporting, Sustainable Development and Contemporary Issues/ E-WASTE LEGISLATION, END OF LIFE MANAGEMENT OF E-WASTE, ENVIRONMENTALLY SOUND E-WASTE MANAGEMENT, / Minimizing Power Usage, Green Data Centers, Greening Your Information Systems
	CYBER LAW/ LAW RELATING TO INTELLECTUAL PROPERTY RIGHTS	SDG16	SDG10	Computer and its impact in society, Privacy Issues & Access Rights, Cybercrimes and Legal framework, Information and Technology Act & Intellectual Property Rights/ Protection of Copyright, Traditional

				Knowledge, Design and Integrated Circuits, Law relating to Patents, IT Law and Cyber Offences and other IPRs
	RESEARCH & INNOVATION-I I	SDG3	SDG4	Carbon Footprint, Innovation in Health care, Use of IOT for social well being
	DIGITAL ELECTRONICS & MICROCONTROLLER	SDG9	SDG11	Basics of Microprocessor and 8051 Microcontroller
	ANALYSIS & DESIGN OF ALGORITHMS	SDG9	SDG11	Energy efficient and cost effective software designing
	ADVANCED NEURAL NETWORK	SDG9	SDG11	Role of ML in Education, Healthcare, Enterprise, Online and Distributed Learning
	ADVANCED JAVA	SDG9	SDG12	Provides libraries to understand the concept of Client-Server architecture for web-based applications. We can also work with web and application servers such as Apache Tomcat and Glassfish Using these servers, we can understand the working of HTTP protocol.
	CYBER LAW/ LAW RELATING TO INTELLECTUAL PROPERTY RIGHTS	SDG11 Sustainable Cities and Communities	SDG16 Peace and Justice Strong Institutions	Computer and its impact in society, Privacy Issues & Access Rights, Cybercrimes and Legal framework, Information and Technology Act & Intellectual Property Rights/ Protection of Copyright, Traditional Knowledge, Design and Integrated Circuits, Law relating to Patents, IT Law and Cyber Offences and other IPRs

	ENVIRONMENTAL ETHICS & SUSTAINABLE DEVELOPMENT/ GREEN COMPUTING/E-WASTE MANAGEMENT	SDG3	SDG11	Design and opting practices that supports sustainable computing and sustainable development
	RESEARCH & INNOVATION-I	SDG9	SDG12	Carbon Footprint, Innovation in Health care, Use of IOT for social well being
	DEVOPS AND TEST AUTOMATION	SDG9	SDG12	Using test automation, DevOps can: Use test cases to detect bugs and save time. Unlike manual testing, automatic test cases make testing faster, which means you can deploy products to market more quickly. Use software programs to test applications and minimize the chance of human error.
	THEORY OF AUTOMATA & COMPILER DESIGN	SDG9	SDG11	Designing of effective machines
	ADVANCED JAVA	SDG9	SDG12	Provides libraries to understand the concept of Client-Server architecture for web-based applications. We can also work with web and application servers such as Apache Tomcat and Glassfish Using these servers, we can understand the working of HTTP protocol.

	ENVIRONMENTAL ETHICS & SUSTAINABLE DEVELOPMENT/ GREEN COMPUTING/ E-WASTE MANAGEMENT	SDG3	SDG11	Challenges to Sustainable Development and Sustainable Development Goals, Sustainability Strategies & Reporting, Sustainable Development and Contemporary Issues/ E-WASTE LEGISLATION , END OF LIFE MANAGEMENT OF E-WASTE, ENVIRONMENTALLY SOUND E-WASTE MANAGEMENT, / Minimizing Power Usage, Green Data Centers, Greening Your Information Systems
	CYBER LAW/LAW RELATING TO INTELLECTUAL PROPERTY RIGHTS	SDG16	SDG9	Computer and its impact in society, Privacy Issues & Access Rights, Cybercrimes and Legal framework, Information and Technology Act & Intellectual Property Rights/ Protection of Copyright, Traditional Knowledge, Design and Integrated Circuits, Law relating to Patents, IT Law and Cyber Offences and other IPRs
	RESEARCH & INNOVATION-I	SDG9	SDG11	Carbon Footprint, Innovation in Health care, Use of IOT for social well being
	NETWORK SECURITY	SDG9	SDG11	Network security is important for home networks as well as in the business world. Most homes with high-speed internet connections have one or more wireless routers, which could be exploited if not properly secured. A solid network security system helps reduce

				the risk of data loss, theft and sabotage.
	THEORY OF AUTOMATA & COMPILER DESIGN	SDG9	SDG11	Designing of effective machines
	DIGITAL ELECTRONICS & MICROCONTROLLER	SDG9	SDG11	Development of Electronic Products
	DATA WAREHOUSE & DATA MINING	SDG9	SDG12	Designing of Effective Database management
	MACHINE LEARNING	SDG9	SDG12	Role of ML in Education, Healthcare, Enterprise, Online and Distributed Learning
	ENVIRONMENTAL ETHICS & SUSTAINABLE DEVELOPMENT/ E-WASTE MANAGEMENT/ GREEN COMPUTING	SDG9	SDG11	Challenges to Sustainable Development and Sustainable Development Goals, Sustainability Strategies & Reporting, Sustainable Development and Contemporary Issues/ E-WASTE LEGISLATION , END OF LIFE MANAGEMENT OF E-WASTE, ENVIRONMENTALLY SOUND E-WASTE MANAGEMENT, / Minimizing Power Usage, Green Data Centers, Greening Your Information Systems
	RESEARCH & INNOVATION-I	SDG9	SDG12	Carbon Footprint, Innovation in Health care, Use of IOT for social well being
	UNIVERSAL HUMAN VALUES	SDG16	SDG3	Peace, Sustainability, Love

Semester 6				
Program	Course	Integrated SDG		Topics
B.Tech. Computer Science & Engineering	MACHINE LEARNING	SDG3	SDG9	Role of ML in Education, Healthcare, Enterprise, Online and Distributed Learning
	COMPUTER GRAPHICS & MULTIMEDIA	SDG9	SDG12	Pictures and films created using computers. Multimedia is content that uses a combination of different content forms such as text, audio, images, animations, video and interactive content
	THEORY OF AUTOMATA & COMPILER DESIGN	SDG9	SDG11	Designing of effective machines
	ADVANCED ANDROID DEVELOPMENT	SDG9	SDG12	Making energy efficient mobile frameworks to reduce carbon emissions
	N/W SECURITY & CRYPTOGRAPHY	SDG9	SDG12	Designing of effective network Security
	OBJECT ORIENTED SOFTWARE ENGINEERING	SDG9	SDG12	Designing software to support sustainable development

	ELECTRONIC DESIGN WORKSHOP/ 3-D SOFTWARE/ AGILE TECHNOLOGIES	SDG9	SDG12	Energy efficient Software engineering
	SENSORS & IOT/ 3 D PRINTING/ R PROGRAMMING	SDG9	SDG12	IOT sensors and sustainable computing
	SOFTWARE ENGINEERING.	SDG9	SDG11	Energy efficient Software engineering
	COMPUTER NETWORKS	SDG9	SDG11	Designing of energy efficient Networks
	NATURAL LANGUAGE PROCESSING	SDG9	SDG11	Helps machine understand human language
	MOBILE COMPUTING WITH ANDROID	SDG9	SDG11	Making energy efficient mobile frameworks to reduce carbon emissions
	SYSTEM NETWORK & ADMINISTRATION	SDG9	SDG11	Making the systems secure
	ELECTRONIC DESIGN WORKSHOP/ 3-D Software/ AGILE TECHNOLOGIES	SDG9	SDG12	energy efficient Software engineering
	SENSORS & IOT/ 3 D PRINTING/	SDG9	SDG12	IOT sensors and sustainable computing

	R PROGRAMMING			
	MODERN ARCHITECTURE PATTERNS	SDG9	SDG11	Modern-Day Architecture Design Patterns for Software Professionals · Circuit Breaker · Command and Query Responsibility Segregation (CQRS)
	SOFTWARE ENGINEERING.	SDG9	SDG11	Sustainable software development
	USER EXPERIENCE	SDG9	SDG11	Creating softwares that can support all facet of life. Creating websites and software interfaces to help support the eay functionality
	ELECTRONIC DESIGN WORKSHOP/ 3-D Software/ AGILE TECHNOLOGIES	SDG9	SDG12	The IoT and its counterpart, the Industrial Internet of Things (IIoT), are bringing sensor usage to a new level.
	SENSORS & IOT/ 3 D Printing/ R PROGRAMMING	SDG9	SDG12	The IoT and its counterpart, the Industrial Internet of Things (IIoT), are bringing sensor usage to a new level.
	VULNERABILITY ASSESSMENT AND PENETRATION TESTING	SDG9	SDG12	Market analysis, evaluation factors, vendor strengths and weaknesses, and more. Get a complimentary copy of the report now.
	CLOUD COMPUTING	SDG9	SDG12	Virtualization, Virtual Machines, Load Scheduling, Task scheduling, resource management]
	ADVANCED JAVA	SDG9	SDG12	provides libraries to understand the concept of Client-Server architecture for web- based applications. We

				can also work with web and application servers such as Apache Tomcat and Glassfish Using these servers, we can understand the working of HTTP protocol.
	ADVANCED ANDROID DEVELOPMENT	SDG9	SDG12	Making energy efficient mobile frameworks to reduce carbon emissions
	N/W SECURITY & CRYPTOGRAPHY	SDG9	SDG12	Designing of effective network Security
	SOFTWARE TESTING	SDG9	SDG12	The act of examining the artifacts and the behavior of the software under test by validation and verification
	USER EXPERIENCE	SDG9	SDG12	Creating software that can support all facet of life. Creating websites and software interfaces to help support the eay functionality
	ELECTRONIC DESIGN WORKSHOP/ 3-D SOFTWARE/ AGILE TECHNOLOGIES	SDG9	SDG12	Innovation and research realated to achieve sustainable developemnt
	CYBER LAW/ LAW RELATING TO INTELLECTUAL PROPERTY RIGHTS	SDG9	SDG16	Computer and its impact in society, Privacy Issues & Access Rights, Cybercrimes and Legal framework, Information and Technology Act & Intellectual Property Rights/ Protection of Copyright, Traditional Knowledge, Design and Integrated Circuits, Law relating to Patents, IT Law

				and Cyber Offences and other IPRs
--	--	--	--	-----------------------------------

Semester7				
Program	Course	Integrated SDG		Topics
B.Tech. Computer Science & Engineering	INTRODUCTION TO FINANCE/ BASICS OF ECONOMICS/ESSENTIAL OF PEACE & SUSTAINABILITY	SDG1 6	SDG1 1	Understanding peace from different perspective: Self, Local Community, National and Global. , Concept of Sustainability and Sustainable Development Goals (2030) as drivers of sustainable, health and social initiatives
	INDIAN CONSTITUTION	SDG1 6	SDG5	The Directive Principles of State Policy – Its importance and implementation, Local Self Government – Constitutional Scheme in India, The scheme of the Fundamental Duties and its legal status
	BIG DATA	SDG9	SDG1 2	Field that treats ways to analyze, systematically extract information from, or otherwise deal with data sets that are too large or complex to be dealt with by traditional data-processing application software
	SOFTWARE TESTING	SDG9	SDG1 2	The act of examining the artifacts and the behavior of the software under test by validation and verification

COMPUTER VISION & DATA VISUALIZATION	SDG9	SDG1 2	Graphical representation of information and data. By using visual elements like charts, graphs, and maps, data visualization tools provide an accessible way to see and understand trends, outliers, and patterns in data.
THEORY OF AUTOMATA & COMPILER DESIGN	SDG9	SDG1 1	Designing of effective machines
COMPUTER GRAPHICS & MULTIMEDIA	SDG9	SDG1 1	Pictures and films created using computers. Multimedia is content that uses a combination of different content forms such as text, audio, images, animations, video and interactive content
WIRELESS SENSOR NETWORK/ OPERATION RESEARCH BY OPTIMISING TECHNIQUE/ INFORMATION RETRIEVAL	SDG9	SDG1 1	Refer to networks of spatially dispersed and dedicated sensors that monitor and record the physical conditions of the environment and forward the collected data to a central location.
VIRTUALIZATION - CONTAINERS/CLOUD	SDG9	SDG1 1	Sustainable energy efficient techniques for processing and provisioning
CONTINUOUS INTEGRATION AND CONTINUOUS DELIVERY	SDG9	SDG1 1	Sustainable solutions: Continuous integration is a software development practice where members of a team use a version control system and frequently integrate their work to the same location, such as a main branch
ARTIFICIAL INTELLIGENCE	SDG9	SDG1 1	Legal text classification, Natural Language

				Understanding and Deep Learning
ADVANCED ANDROID DEVELOPMENT	SDG9	SDG1 1		Making energy efficient mobile frameworks to reduce carbon emissions
N/W SECURITY & CRYPTOGRAPHY	SDG9	SDG1 2		Designing of effective network Security
SOFTWARE TESTING	SDG9	SDG1 2		The act of examining the artifacts and the behavior of the software under test by validation and verification
.NET	SDG9	SDG1 1		Creating software that can support all facet of life. Creating websites and software interfaces to help support the easy functionality
MALWARE ANALYSIS AND REVERSE ENGINEERING	SDG9	SDG1 2		More advanced malware analysis is a manual process in which malware samples are used in reverse engineering, often using a range of different tools. Through reverse engineering, researchers are able to detect hidden functions of a particular malware, even those that are only performed under certain conditions
INTERNET OF THINGS	SDG9	SDG1 2		The IoT and its counterpart, the Industrial Internet of Things (IIoT), are bringing sensor usage to a new level.
MOBILE APP. ANALYTICS	SDG9	SDG1 2		Development of applications
SOFTWARE PROJECT MANAGEMENT	SDG9	SDG1 2		Software project management is an art and science of planning and leading software projects. It is a sub-discipline of project management in which software projects are

				planned, implemented, monitored and controlled
	CLOUD SECURITY	SDG9	SDG1 2	the protection of data stored online via cloud computing platforms from theft, leakage, and deletion.
	WIRELESS SENSOR NETWORK	SDG9	SDG1 2	Refer to networks of spatially dispersed and dedicated sensors that monitor and record the physical conditions of the environment and forward the collected data to a central location.
	OPERATION RESEARCH BY OPTIMISING TECHNIQUE	SDG9	SDG1 2	Research in optimization involves the analysis of such mathematical problems and the design of efficient algorithms for solving them. ... Optimization technologies provide examples of how deep mathematical techniques help to provide concrete computational tools for solving a diverse suite of problems
	INFORMATION RETRIEVAL	SDG9	SDG1 2	Information retrieval in computing and information science is the process of obtaining information system resources that are relevant to an information need from a collection of those resources. Searches can be based on full-text or other content-based indexing.

Semester 8			
Program	Course	Integrated SDG	Topics

B.Tech. Computer Science & Engineering	CONVOLUTIONAL NEURAL NETWORK FOR VISUAL RECOGNITION	SDG3	SDG4	Deep Learning Software, CNN Architectures, Recurrent Neural Networks, Detection and Segmentation, Visualizing and Understanding
	APP. PHILOSOPHY/APP. PSYCHOLOGY/ APP. SOCIOLOGY	SDG11	SDG16	Different philosophical doctrines
	BUSINESS INTELLIGENCE & ANALYTICS WITH R	SDG11	SDG8	Analysis and forecasting, the strategies and technologies used by enterprises for the data analysis and management of business information.
	SOFTWARE REQUIREMENT ENGINEERING	SDG9	SDG12	Before any of the actual designing, coding, testing, or maintenance takes place. The goal is to create an important early document and process in the software design for gathering requirements
	MOBILE APP. ANALYTICS	SDG9	SDG11	IMPLEMENTING MOBILE TOOLS, In-app analytics describes everything a user does within an application
	CLOUD SECURITY	SDG9	SDG11	The protection of data stored online via cloud

				computing platforms from theft, leakage, and deletion.
	INTRODUCTION TO FINANCE/ BASICS OF ECONOMICS/ESSENTIAL OF PEACE & SUSTAINABILITY	SDG9	SDG11	Innovation and research related to achieve sustainable development, how to bring harmony in society
	PROJECT	SDG9	SDG12	An experience of working on skills and technology to increase team management skills, communication skills, and time management skills
	MOBILE APP. ANALYTICS	SDG9	SDG11	IMPLEMENTING MOBILE TOOLS, In-app analytics describes everything a user does within an application

2. Alignment of Problem statements with UN SDGs

Project Based Learning is a good pedagogy to provide learning skills, competencies, and attitude to the students to help them work towards achieving sustainable development goals.

By incorporating Project based learning into the classroom, young minds can actually be trained to think logically, investigate unsolved social problems and find the solutions by integrating science & Technology which can be a contributing factor towards achieving UN SDG Goals.

PBL also instills a global mindset as working towards UN SDGs is actually taking them ahead to solve global challenges.

Therefore, at the ideation stage only we have designed our rubrics so as to clear the expectation of teacher/mentor to the student which directs and motivates towards finding an unsolved societal problem as the problem statement to progress in their course.

Following grading criteria are used to guide and motivate the students to work towards SDG Challenges at the ideation stage.

PBL rubrics mapping with (SDGs) (SAMPLE)

Stage I:- Ideation					
SNo	Rubrics	Max Marks (15)	Needs Improvement	Meets Expectation	Exceeds Expectations
R1. 1	Problem Statement	2	The problem chosen is very common and being solved using fundamental machine learning algorithms	The problem chosen is very common and being solved using latest learning algorithms	The problem chosen is unique and less addressed and being solved using fundamental / advanced learning algorithms
		scale	1	1.5	2
R1. 2	Holistic Scope of Sustainability	1	Project is not aligned with UN SDGs	Project is aligned with one or more UN SDGs	
		scale	0	1	
R1. 3	Region of relevance	1.5	Problem is being addressed at Local Level	Problem is being addressed at national Level	Problem is being addressed at global Level
		scale	0.5	1.5	1.5

SCHOOL OF EDUCATION & HUMANITIES **DEPARTMENT OF EDUCATION**

In the context of academic teaching and learning, the SDGs can serve as a useful tool for promoting a more comprehensive and integrated approach to education. The following tables show the mapping of our course curriculum with the SDGs as a sample.

Course mapping with (SDGs)

Semester 1

Program	Course	Integrated SDG		Topics
B. Sc. B. Ed.	Diversity of Microbes and Thallophytes	SDG1 5	SDG1 4	General account, distribution, types, structure, reproduction, ecological and economic importance: Lichens
B.Ed Special Education	Human Growth & Development	SDG4	SDG3	Learning Theories and their classroom implications, Psychological Well-Being
B.Ed. Special Education	Creating an Inclusive Classroom	SDG4	SDG1 6	Important aspects of Inclusive Educations, Characteristics, aims and objectives of Inclusive Education, models of inclusive education, strategies for an inclusive classroom
B.Ed.	Child Development and Teaching Learning Process	SDG3	SDG5	Child Abuse. Gender discrimination
B.Ed.	Pedagogy of School Subjects	SDG4		Action research: Concept and Identification of problems faced by the teachers in the
B. A. B. Ed.	Microeconomics: Theory and Applications I	SDG8	SDG1 2	Economies and Diseconomies of Scale; Consumer and Producer Equilibrium
B. A. B. Ed.	English: Renaissance & Restoration	SDG4	SDG4	Literature & Society

Semester 2				
Program	Course	Integrated SDG		Topics
B.A B. Ed.	Microeconomics: Theory and Application II	SDG8	SDG9	Perfect and imperfect market structures
B.Ed Special Education	Creating an Inclusive Classroom	SDG4	SDG16	Important aspects of Inclusive Educations, Characteristics, aims and objectives of Inclusive Education, models of inclusive education, strategies for an inclusive classroom
B.Ed Special	Curriculum Designing,	SDG4		Curriculum Design and Development: Subject-centered, Learner-centered (CWLD), Learning-centered

Education	Adaptation and Evaluation			
B. Ed.	Learning and Teaching	SDG4	SDG4	THEORIES OF LEARNING and their educational implications
B. Ed.	Pedagogy of School Subjects	SDG4		Action research: Concept and Identification of problems faced by the teachers in the Classrooms
B.Sc. B. Ed.	Zoology: Animal Diversity – Ii	SDG15	SDG6	Insects as vectors a. mosquito b. housefly c. sand-fly d. tsetse fly

Semester 3				
Program	Course	Integrated SDG		Topics
B.Ed Special Education	Disability Specialization	SDG4		Lesson planning and execution on different levels for selected subjects.
B.Ed Special Education	Main Disability Special School	SDG4		Develop and deliver the lessons in special education setup
B. Ed.	Gender, school and Society	SDG5	SDG10	Gender equality- Role of schools in reinforcing gender equality, Role of peers in reinforcing gender equality, Role of teachers in reinforcing gender equality, Role of curriculum and textbook in reinforcing gender equality
B.Sc B. Ed.	Gymnosperms and Reproduction in Angiosperms	SDG15	SDG13	General characters, distribution, classification, affinities and economic importance

Semester 4			
Program	Course	Integrated SDG	Topics

B.Ed.	Education in Contemporary India	SDG4	SDG4	Mudaliar Commission (1952), Education Commission (1964-66), NPE 1968; NPE 1986 and its modified version 1992 Right to Education Act 2009: Right of children to free and compulsory education, NEP 2020, Midday meal scheme, Three language Formula, Equity in education, Modernization and Privatization of Education, Role of educational agencies-NCERT, SCERT, CBSE, ICSE, Open and Distance Education, Role of teacher in universal and inclusive education, National System of Education
B.Ed Special Education	Cross-Disability and Inclusion	SDG4		Planning and implementation of IEP for Children with special needs.

Semester 5				
Program	Course	Integrated SDG		Topics
BA B.Ed.	Literary Criticism	SDG4	SDG4	The various stages in the evolution of literary criticism
BA B.Ed	Indian Economy	SDG9	SDG12	Industrial Sector in India
BSc B.Ed	Ecology and Animal Behaviour	SDG3	SDG15	Hormonal control

Semester 6				
Program	Course	Integrated SDG		Topics
BSc B.Ed	Plant Physiology and Metabolism	SDG13	SDG15	Water relations in plants
BA B.Ed	Money and Banking	SDG8	SDG10	Commercial Banking and Monetary Policy
BSc B.Ed	Developmental Biology and Applied Zoology	SDG15	SDG11	Basic principles of practices in culturing of i) silkworms (Sericulture), ii) bees (Apiculture), iii) Aquaculture – fish, prawn and shellfish

Semester 7				
Program	Course	Integrated SDG		Topics
BSc B.Ed	Numerical Analysis	SDG4	SDG9	Lifelong Learning: to interpolate, find solution of nonlinear equations, simultaneous equations

BA B.Ed	Internship	SDG4	SDG4	Teaching competency, action research, reflective journal, case study, lesson plans
---------	------------	------	------	--

Semester 8				
Program	Course	Integrated SDG		Topics
BA B.Ed	School Leadership and Management	SDG4	SDG4	Concept of Group dynamics, types of groups, stages of group formation, Conflict management: Concept and Strategies, Stress management: Concept and Strategies
BSc B.Ed	Biochemistry, Plant tissue culture and Biotechnology	SDG15	SDG3	Biochemistry
BA B.Ed	Statistics	SDG8		Correlation and Regression

SCHOOL OF SCIENCES
DEPARTMENT OF SCIENCES

Courses mapped with SDGs

In the context of academic teaching and learning, the SDGs can serve as a useful tool for promoting a more comprehensive and integrated approach to education. The following tables show the mapping of our course curriculum with the SDGs as a sample.

Course mapping with (SDGs) (Chemistry)

Semester1				
Program	Course	Integrated SDG		Topics
B.Sc.(H) CHEMISTRY	GREEN CHEMISTRY	SDG6	SDG11	Twelve principles of chemistry, Water chemistry, Green solvents, Green Engineering.
Semester-2				
B.Sc.(H) CHEMISTRY	Environmental Science	SDG6	SDG15	Pollution, Ecosystem etc
Semester 3				
B.Sc. (H) CHEMISTRY	Environmental Sustainable development	SDG12	SDG14	Environmental Sustainable development E Waste Management

B.Sc. (H) CHEMISTRY	Applied Philosophy	SDG10	SDG16	Secularism—its nature and implications, Moral Philosophy of religion
B.Sc. (H) CHEMISTRY	Applied Sociology	SDG1	SD2	Issues in urban development-Population, poverty
Semester 4				
B.Sc. (H) CHEMISTRY	E Waste Management	SD G12	SDG14	E Waste Management
B.Sc. (H) CHEMISTRY	Industrial Chemistry	SD G7	SDG9	Chemistry of cosmetics and perfumes; Silicate Batteries ; Batteries; catalyst and catalysis
B.Sc. (H) CHEMISTRY	Environmental Ethics & Sustainable development	SD G11	SDG13	Sustainable development; Sustainable strategies and reporting; d Contemporary Issues
B.Sc. (H) CHEMISTRY	Major Project	SDG9	SDG8	Understand Research & Innovation Skill
Semester 5				
B.Sc. (H) CHEMISTRY	Chemistry in Agriculture	SDG2	SDG12	Fertilizers, Pesticides, fungicides
B.Sc. (H) CHEMISTRY	Nanotechnology	SDG6	SDG7	Application of nanotechnology in water filtration, Role of nanotechnology in Energy
B.Sc. (H) CHEMISTRY	Fuel Chemistry	SDG7	SDG13	Classification of energy resources; disadvantages of conventional energy resources
B.Sc. (H) CHEMISTRY	Analytical Chemistry and spectroscopy	SDG8	SDG9	Analytical chemistry; physicochemical method of analysis
Semester 6				
B.Sc. (H) CHEMISTRY	Chemicals & Environment	SDG6	SDG11	water Treatment; Chemistry of Water; Water quality parameters
B.Sc. (H) CHEMISTRY	Food Chemistry	SDG 12		Food Chemistry
B.Sc. (H) CHEMISTRY	Clinical & Pharmaceutical Chemistry	SDG 3	SDG 11	Amino acids; protein; enzyme; carbohydrate
B.Sc. (H) CHEMISTRY	Instrumental Method of Chemical Analysis	SDG 8	SDG 9	Technical aspects of various instruments such as spectroscopy, chromatography, mass spectroscopy

Course mapping with (SDGs) (Physics)

Semester-1				
Program	Course	Integrated SDG		Topics
B. Sc. (PH) (1st Sem.)	Programming For Problem Solving Using C Lab	SDG4		Information And Communications Technology Skills
B. Sc. (PH) (1st Sem.)	Communicative English	SDG4		Quality education: Use in personal as well as professional life

Semester-2				
Program	Course	Integrated SDG		Topics
B. Sc. (PH) (2 nd Sem.)	Environmental Science	SDG4, SDG6, SDG 12		Environment Education, Environmental Pollution, Integrated Water Resource Management

Semester-3				
Program	Course	Integrated SDG		Topics
B. Sc. (PH) (3rd Sem.)	Mini Project 1 (PHN204)	SDG7	SDG11	Research and development
B. Sc. (PH) (3rd Sem.)	French I	SDG4 (Lifelong learning, Quality Education, learning opportunities)		Les articles (défini et indéfini) ER verbs Posez les questions l'heure La culture & la civilization
B. Sc. (PH) (3rd Sem.)	Spanish I	SDG4 (Lifelong learning, Quality Education, learning opportunities)		Los articulos verbo Ser Verbos regulares Demonstrativos Interrogativos
B. Sc. (PH) (3rd Sem.)	German I	SDG4 (Lifelong learning, Quality Education, learning opportunities)		Artikeln -regelmäßige Verben W-Fragen Vorstellung Kultur von Deutschland
B. Sc. (PH) (3rd Sem.)	Applied philosophy	SDG10,SDG16		Human Rights And Laws

B. Sc. (PH) (3rd Sem.)	Applied Psychology	SDG16		Introduction to Psychology, Psychological Abuse
B. Sc. (PH) (3rd Sem.)	Applied sociology	SDG8,SDG10		Social change & mobility
B. Sc. (PH) (3rd Sem.)	basics of economics	SDG 1, SDG 4, SDG 8, SDG 12		Economic Resource & Access, Life Long Learning, Economic Activity, Economic Development, Economic Growth, Ecomic Impact, GDP, Production and Resource Use
B. Sc. (PH) (3rd Sem.)	Introduction To Finance	SDG8,SDG9(Decent work and economic growth, industry innovation & infrastructure)		Time value of money, capital budgeting, capital structure, financial analysis & planning

Semester-4				
Program	Course	Integrated SDG		Topics
B. Sc. (PH) (4th Sem.)	Mini Project 2 (PHN207)	SDG7	SDG12	Research and Development, Quality Education
B. Sc. (PH) (4th Sem.)	Environment & sustainable development	SDG2 (Nutrition), SDG3 (Indigenous knowledge), SDG8 (Climate Change, Sustainable Tourism), SDG5 (gender Issues)		Nutrition, Indigenous knowledge, Climate Change, Sustainable Tourism, Gender issues
Semester-5				
Program	Course	Integrated SDG		Topics
B. Sc. (PH) (5th Sem.)	Digital Electronics (PHH302 B)	SDG4	SDG15	AND, OR and NOT Gates (realization using Diodes and Transistor), NAND and NOR Gates as Universal Gates, XOR and XNOR Gates, Memory interfacing Memory Map, Main features and Components of 8085 Microprocessor, Block diagram.

B. Sc. (PH) (5th Sem.)	Mini Project 2 (PHN207)	SDG7	SDG12	Research and Development, Quality Education
Semester-6				
Program	Course	Integrated SDG		Topics
B. Sc. (PH) (6th Sem.)	Electronic Devices (PHH306B)	SDG3	SDG12	Memory interfacing Memory Map, Main features and Components of 8085 Microprocessor, Block diagram.
B. Sc. (PH) (6th Sem.)	MAJOR PROJECT (PHN307)	SDG7	SDG12	Research and Development, Quality Education

Semester-1				
Program	Course	Integrated SDG		Topics
M. Sc. (PH) (1st Sem.)	Physics of Electronic Devices	SDG4	SDG9	Physics of Electronic Devices, High frequency devices (including generators and detectors)

Semester-2				
Program	Course	Integrated SDG		Topics
M. Sc. (PH) (2nd Sem.)	Scientific Research I	SDG4	SDG9	Analysis of different approach/methodology for experiments and Simulation, Research and development

Semester-3				
Program	Course	Integrated SDG		Topics
M. Sc. (PH) (3rd Sem.)	Synthesis and Characterization Techniques (PHH605B)	SDG7	SDG3	Electron beam evaporation technique, Quantum dot materials, Quantum dot materials, Raman and FTIR spectroscopy, Scanning electron microscopy, Field-emission Scanning electron microscopy
M. Sc. (PH) (3rd Sem.)	Scientific Research II	SDG4	SDG9	Planning of experiments and simulation, Analysis of different approach/methodology for experiments and Simulation , Research and development

Semester-4				
Program	Course	Integrated SDG		Topics

M. Sc. (PH) (4th Sem.)	Nanotechnology (PHH608B)	SDG7	SDG12	Morphology of Nanoparticles, Nanoparticle Morphology, Nano-structures in waste-water treatment, "Nano-structures in bacteria entrapment, Application of nano-structures in Electronics.
M. Sc. (PH) (4th Sem.)	Major Project	SDG4	SDG9	Research and development, innovation based research methodology, preparing prototype

Course mapping with (SDGs) (Mathematics)

Semester1				
Program	Course	Integrated SDG		Topics
B.Sc(Maths) Semi	Programming For Problem Solving Using C Lab	SDG4		Problems Solving, Using C Programming
	Maths Lab - I	SDG4		Mathematical Problem Using Softwares Like Octave, R Etc
	Communicative English	SDG4		Group Discussions
M.Sc(Maths) Sem I	Excel Workshop	SDG4		Solve Mathematical Problem Using Softwares Like Octave, R ,Python Etc
	Mathematics Lab-I			
	Python Programming			
Semester2				
Program	Course	Integrated SDG		Topics
B.Sc(Maths) Semii	Math Lab – Ii	SDG4		Simplify Arithmetic Calculations Using Octave & Microsoft Excel
	Environmental Science	SDG4	SDG6, SDG 12	Environment Education, Environmental Pollution, Integrated Water Resource Management
M.Sc(Maths) Sem Ii	Mathematics Lab –Ii Scientific Research - I	SDG4		Solve Mathematical Problem Using Softwares Like Octave, R Etc And Educational Research
Semester3				
Program	Course	Integrated SDG		Topics

B.Sc(Maths) Semiii	Math Lab – Iii	SDG4		Elaborate Scientific Writing Using Latex
	Applied Philosophy	SDG1 0	SDG16	Human Rights And Laws
	Applied Psychology	SDG1 6		Introduction To Psychology, Psychological Abuse
	Applied Sociology	SDG 8	SDG10	Social Change & Mobility
	Introduction To Finance	SDG 1, SDG 4,	SDG 8, SDG 12	Economic Resource & Access, Life Long Learning, Economic Activity, Economic Development, Economic Growth, Ecomic Impact, Gdp, Production And Resource Use
M.Sc(Maths) Sem Iii	Pedagogical Skills Scientific Research -II	SDG4		Pedagogical Content Knowledge, Lifelong Learning, Education Research
Semester4				
Program	Course	Integrated SDG		Topics
B.Sc(Maths) Semiv	Spanish Ii	SDG4		-Ser Vs. Estar - Verbos Irregulares - Tiempo - Verbos Reflexivos
	German Ii	SDG4		Possessivepronomen - Unregelmäßige Verben - Adjektiven - Das Wetter - Modal Verben
	Data Structures	SDG4		Algorithm Analysis, Complexity Of Algorithm
	Environment & Sustainable Development	SDG2	SDG3, SDG8	Nutrition, Indigenous Knowledge, Climate Change, Sustainable Tourism, Gender Issues
	E-Waste	SDG1 2	SDG14 , SDG15	Separation And Recycling Of E-Waste, Understanding Rohs And Reach
	Mini Project-Ii	SDG4		Literature Review And Report Writing

	French Ii	SDG4		- Les Aticles Patitifs - Ir Verbs - Les Exceptions <Er Verbs> - Les Adjectifs - Les Verbs Pronominaux
M.Sc(Maths) Sem Iv	Project	SDG4	SDG8	Learning Opportunities, Offset Project
Semester5				
Program	Course	Integrated Sdg		Topics
B.Sc(Maths) Sem V	Math Lab - Iv	SDG4		Interpolation
	Introduction To Database Management Systems	SDG4		Sql Implementation Query Writing Normalization Functional Dependency
	Minor Project	SDG4		Literature Review And Report Writing
	Environment & Sustainable Development	SDG2	SDG3, SDG8, SDG5	Nutrition, Indigenous Knowledge, Climate Change, Sustainable Tourism, Gender Issues
Semester 6				
Program	Course	Integrated SDG		Topics
B.Sc(Maths) Sem Vi	Fundamentals Of Machine Learning Lab	SDG4		Machine Learning,Supervise Learning,Unsupervised Learning
	Entrepreneurship Theory & Practice	SDG4	SDG8	Entrepreneurship Skills, Climate Change, Sustainable Tourism

SCHOOL OF MANAGEMENT & COMMERCE

DEPARTMENT OF MANAGEMENT & COMMERCE

Course mapping with (SDGs)

Semester-1			
Program	Course	Integrated SDG	Topics

BBA (COMMON CORE SUBJECTS – FAA, EFB, HCM, OM, BA)	Computer Information System	SDG9		Function of different units of computer, Types of software (System and Application)
	Business Communication-I	SDG 4(Quality education)	SDG9 (Industry, Innovation and Infrastructure)	Basic forms of communication, Process of communication, Impact of Encoding and Decoding in Communication
	Marketing Management	SDG9 (Industry, Innovation and Infrastructure)		Marketing environment, New Product Development, Integrated marketing communication
	Management Principles & Organizational Behavior	SDG9 (Industry, Innovation and Infrastructure)		Leadership for learning organizations. Trait, behavioral, contingency theories, and managerial grid.
BBA FAA (ELECTIVE)	Micro Economics	SDG8 (Decent work & Economic growth)	SDG9 (Industry, Innovation and Infrastructure)	Demand and Supply, Central Problems, Production Curve
	Financial Accounting	SDG4 (Quality Education)	SDG8 (Decent work & Economic growth)	Computerized Accounting: Computers and Financial application, Accounting Software packages
BBA EFB (ELECTIVE)	Entrepreneurship Theory & Practices	SDG8, SDG 12 (Responsible production & Consumption)	SDG9 (Industry, Innovation and Infrastructure)	Fundamentals of Disciplinary Knowledge, entrepreneurial skills & mindset, risk & return, opportunity recognition
BBA HCM (ELECTIVE)	Introduction to Health Care Management	SDG3(GOOD Health)	SDG4 (Quality Education)	Systematic Planning and Control of inventory
BBA OM (ELECTIVE)	Principles of Manufacturing	SDG9 (Industry,	SDG13, SDG 12	Sustainable manufacturing

		Innovation and Infrastructure)		
BBA- BA (ELECTIVE)	Introduction to Business Analytics	SDG9 (Industry, Innovation and Infrastructure)		Data Management, data mining, data warehousing. Data science & ML, big data, application of analytics
	Basics of Data Management with R & Python	SDG9 (Industry, Innovation and Infrastructure)		Learning R, Python, Advanced Python objects

Semester-2				
Program	Course	Integrated SDG		Topics
BBA (COMMON CORE SUBJECTS – FAA,EFB,HCM,OM , BA)	Human Resource Management		SDG9 (Industry, Innovation and Infrastructure)	HR Planning, recruitment, compensation, performance appraisal, industrial relations, training & development, feedback
	Financial Management		SDG9 (Industry, Innovation and Infrastructure)	Capital Budgeting, wealth maximization, capital structure decisions
	Advanced Excel		SDG9 (Industry, Innovation and Infrastructure)	Visualizing Data Using Conditional Formatting, Using Data Validation, Creating Charts and Graphic
	Business Communication- II	SDG4(Quality education)	SDG9 (Industry, Innovation and Infrastructure)	Global Communication, Understanding Self and others, Creativity and Communication

BBA EFB (ELECTIVE)	Human Resource Management	SDG10 (Reducing Inequality)	SDG8 (Decent work & Economic growth)	Practices & principles of Human resource management. Job Design & appraisal techniques
	New Venture creation	SDG12,17	SDG9 (Industry, Innovation and Infrastructure)	Venture & value creation. Parameters of Business plan and models
BBA EFB (ELECTIVE)	Fundamentals of Design Thinking & Venture Creation	SDG9 (Industry, Innovation and Infrastructure)	SDG12 (Responsible production & consumption)	principles of design thinking, prototype creation and testing, problem solving, business plan
	Introduction to Family Business Management	SDG9 (Industry, Innovation and Infrastructure)	SDG16 (Peace Justice & Strong Institutions)	management of family businesses, governance, conflict resolution, understanding the life cycle changes, succession planning, preparing next generation leaders and successors
BBA HCM (ELECTIVE)	Healthcare Communication	SDG4 (Quality education)	SDG17 (Partnership for goals)	Educating Health Communication programmes with Partnerships
	Healthcare Economics	SDG4 (Quality education)	SDG3 (Good Health & Well being)	Understand the behavior of individual, health care providers and govt making decisions.
BBA OM (ELECTIVE)	Fundamentals Of Logistics	SDG13 (Climate Action)	SDG9 (Industry, Innovation and Infrastructure)	Concepts of Logistical packaging; Design considerations in packaging; Types of packaging materials

Program	Course	Integrated SDG		Topics
BBA FAA (ELECTIVE)	Management Accounting	SDG9 (Industry, Innovation and Infrastructure)		Corporate Accounting Practices
	Investment Analysis and Portfolio Management		SDG12(responsible production & consumption)	Understanding of Financial Markets/Portfolio Management
	Financial Services	SDG8 (Decent work & economic growth)	SDG9 (Industry, Innovation and Infrastructure)	Understanding of Financial Services/Financial Sectors
BBA EFB (ELECTIVE)	Creativity, Innovation & Entrepreneurship	SDG9 (Industry, Innovation and Infrastructure)	SDG12 (Responsible production & consumption)	Creating a culture of Innovation, emerging economies, reducing uncertainty and enhancing creativity
	Family Business Governance	SDG9 (Industry, Innovation and Infrastructure)	SDG16(Peace Justice & Strong Institutions)	Structure & institutions to bring family governance, governance in each circle of 3 Circle model
	Business Modeling	SDG9 (Industry, Innovation and Infrastructure)	SDG12	Types of business models to develop innovative business ideas, components of business model, Value proposition canvas, customer profiling
BBA HCM (ELECTIVE)	Clinical Services	SDG3(Good Health & Well being)	SDG10	Clinical Operations in Hospital
	Planning & Designing of Hospitals	SDG3(Good Health & Well being)	SDG 13 (Climate Action)	Sustainable Hospitals, Health Promoting Hospital
	Epidemiology	SDG3(Good Health & Well being)	SDG6	Understanding of Epidemic Investigation

	Management of Medication	SDG4 (Quality education)	SDG3(Good Health & Well being)	Medicine procurement and stores Management
BBA OM (ELECTIVE)	Operation Management	SDG9 (Industry, Innovation and Infrastructure)	SDG12 (Responsible production & consumption)	Facility layout
	Warehouse Management	SDG12 (Responsible production & consumption)	SDG13	Introduction to Waste Management at warehouse
BBA BA (ELECTIVE)	SQL	SDG9 (Industry, Innovation and Infrastructure)		Data Mining, Data Normalization ,Locking Protocols

Semester-4				
Program	Course	Integrated SDG		Topics
BBA (COMMON CORE SUBJECTS – FAA,EFB,HCM,OM, BA)	Services Marketing	SDG8 (Decent work & economic growth)		Introduction & Growth of the service sector
	Supply Chain Management	SDG9 (Industry, Innovation and Infrastructure)	SDG12 (Responsible production & consumption)	Supply Chain Integration Functional Products Innovative products efficient supply chains Responsive supply chains agile supply chains
	CSR And Sustainable Development	SDG12 (Responsible production & consumption)	SDG16	Sustainable Development: Basic Concepts- Perspectives & challenges of sustainability.
BBA FAA (ELECTIVE)	MBFI	SDG9 (Industry, Innovation and Infrastructure)	SDG12	Banking in financial Inclusion and financial awareness

	Digital Finance	SDG1 (No Poverty)	SDG9 (Industry, Innovation and Infrastructure)	Adhar Enabled Payment System, UPI interface, Digital Payments
	Performance & Compensation Management Systems	SDG8 (Decent work & economic growth)	SDG10,9	Appraisal, Motivation, Talent Development, Retention, Compensation
BBA EFB (ELECTIVE)	Managing Entrepreneurial Growth & strategy	SDG9 (Industry, Innovation and Infrastructure)	SDG12 (Responsible production & consumption)	Entrepreneurial strategies, resource based view and industry view, new entry wedges, industry life cycle changes
	Applied Entrepreneurship Programme	SDG9	SDG12,17	From idea to stage of prototype development, pivoting, pitching the idea to VCs, lean canvas, value proposition canvas, funding opportunities
BBA HCM (ELECTIVE)	Material & Inventory Management	SDG3 (Good Health & well Being)	SDG9 (Industry, Innovation and Infrastructure)	Systematic, planning of inventory / Material
	Healthcare & Human Resource Management	SDG3 (Good Health & well Being)	SDG8	HRH Inputs in National Health Policies in India Human Resource for Health Cadres
	Hospital Information Systems	SDG3 (Good Health & well Being)	SDG7 (affordable & clean energy)	Introduction to Hospital Information Systems
	Legal & Ethical Issues In Health	SDG4	SDG12 (Responsible production & consumption)	Implementation of health care Laws

	Supply chain management	SDG11	SDG12 (Responsible production & consumption)	Key Issues in SCM, Sustainable Supply chain Management
	Freight Transport Management	SDG12 (Responsible production & consumption)	SDG13 (Climate Action)	Transportation: Road and Rail network: : A Brief Study of different modes of transport used for movement of materials, their relative advantages, disadvantages and suitability
BBA OM (ELECTIVE)	SAS & Tableau	SDG9 (Industry, Innovation and Infrastructure)		Analysis in SAS, Visualization techniques, deploy SAS
	Performance & Compensation Management Systems	SDG8 (Decent work & economic growth)	SDG10,9	Appraisal, Motivation, Talent Development, Retention, Compensation

Semester-5				
Program	Course	Integrated SDG		Topics
BBA (COMMON CORE SUBJECTS – FAA,EFB,HCM,OM , BA)	International Business	SDG9 (Industry, Innovation and Infrastructure)		BRICS & ASIAN countries, export and import and modes of payment
	Strategic Management	SDG9 (Industry, Innovation and Infrastructure)		Diversification, Turnaround strategies, Divestiture, Outsourcing
BBA FAA (ELECTIVE)	Financial Derivatives	SDG8 (Decent work & economic growth)	SDG9 (Industry, Innovation and	Risk Management, Investment Awareness, Innovative financial instruments for risk management'

		economic growth)	Infrastructure)	
	Investment Analysis and Portfolio Management	SDG10	SDG8 (Decent work & economic growth)	Investment in stock market for economic growth
BBA EFB (ELECTIVE)	Social Entrepreneurship	SDG9, SDG 1, SDG 10	SDG12 (Responsible production & consumption)	Social Development & Poverty elimination via Entrepreneurship, funding of social ventures, marketing of social enterprises, learning from societal issues, social Impact
	Technological entrepreneurship	SDG9 (Industry, Innovation and Infrastructure)	SDG12 (Responsible production & consumption)	Technology acquisition, types of innovation, implication of technology, diffusion of technology, technology regimes
BBA HCM (ELECTIVE)	Quality Assurance in Healthcare	SDG3 (Good Health & well Being)	SDG4(Quality Education)	Application of Quality Tools
	Healthcare Insurance & Managed Care	SDG3 (Good Health & well Being)	SDG17(Partnership for Goals)	Provide Health Benefits and security ageist illness
BBA OM (ELECTIVE)	Logistic & International Supply Chain Management	SDG8 (Decent work & economic growth)	SDG13	"Global Supply Chains and their societal, business, and cultural contexts and impacts. Drivers for economic globalization (labor costs, resources, regulation etc.), Influence on world and national economies"

BBA BA (ELECTIVE)	HR Analytics	SDG9 (Industry, Innovation and Infrastructure)	SDG8 (Decent work & economic growth)	Diversity Analysis, Recruitment & Selection Analytics
	Social Media Analytics	SDG9 (Industry, Innovation and Infrastructure)	SDG8 (Decent work & economic growth)	NLP & Mobile Analytics, Understanding of AIML in Industry 4.0

Semester-6				
Program	Course	Integrated SDG		Topics
BBA (COMMON CORE SUBJECTS – FAA,EFB,HCM,OM, BA)	E-Commerce	SDG9 (Industry, Innovation and Infrastructure)		M commerce Business Models, Taxation in relation to E-Commerce
	Digital Marketing	SDG9 (Industry, Innovation and Infrastructure)		YouTube Advertising, Concept of SNS Industry
	Business Analytics	SDG9 (Industry, Innovation and Infrastructure)	SDG8 (Decent work & economic growth)	Machine learning and artificial intelligence.
BBA FAA (ELECTIVE)	Behavioral Finance	SDG12	SDG10 (Reduced Inequalities)	Psychological theories, Biases, Heuristics in Investments, responsible and rational investment decision making
	Risk Management	SDG9 (Industry, Innovation and	SDG10 (Reduced	Management of risk and NPA

	In Banking Sector	Infrastructure)	Inequalities)	
	Financial Modeling	SDG10	SDG12	Understanding of financial analytics
BBA EFB (ELECTIVE)	Copyright, Patents & Laws of IPR	SDG9 (Industry, Innovation and Infrastructure)	SDG12	Legality & fairness
	Strategies & Practices of Family Owned Enterprises	SDG9 (Industry, Innovation and Infrastructure)	SDG12	Parallel planning in family businesses, strategic alternatives to growth of family businesses, strategic potential matrix
BBA HCM (ELECTIVE)	Public Health	SDG3		
	Global Health	SDG3,16	SDG6,17	Educate the Cause Of Global Illness
BBA OM (ELECTIVE)	Multimodal Transportation Systems	SDG3 (Good Health & well Being)	SDG7 (affordable & clean energy)	Planning considerations for Pedestrians, Planning Considerations for Bicyclists. Planning Considerations for Bicyclists, NMT Strategies
	Introduction to shipping	SDG3 (Good Health & well Being)	SDG15	Environmental issues connected with Ports & Terminals – Health & safety issues
BBA BA (ELECTIVE)	Supply Chain analytics	SDG9 (Industry, Innovation and Infrastructure)	SDG11	scenario analysis into your supply chain processes

SCHOOL OF LAW

Department of Law

Courses Mapped With SDGs

UG Courses

Programme	Course	Integrated SDGs		Topics
Semester 1				
B.A. LL.B. (H)	Sociology - I	SDG 10 (Reduce inequality within and among countries)	SDG 16 (Promote peaceful and inclusive societies, provide access to justice, accountable and inclusive institutions)	Backward classes in India, Constitutional Provisions, Affirmative Actions - Reservation for SCs STs, OBCs and Women in Politics, Services and Educational Institutions
Semester 2				
B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)	Legal Methods	SDG 16 (Promote peaceful and inclusive societies, provide access to justice, accountable and inclusive institutions)		Indian Legal System, Rule of Law, Basic concepts of legal system
Semester 3				
B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)/ LL.B.	Constitutional Law-I	SDG4 (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all) SDG 10 (Reduce inequality within and among countries)	SDG 16 (Promote peaceful and inclusive societies, provide access to justice, accountable and inclusive institutions)	Equality before laws and Equal protection of laws, Prohibition of discrimination & Justice to weaker sections of society-SC/ST/WOMEN, Equality of opportunity in matters of public employment, Abolition of Untouchability & Titles Human trafficking, prohibition of child labour, right to education Protection of interests of minorities
Semester 4				

B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)/ LL.B.	Family Law – II	SDG 5 (Achieve gender equality and empower all women and girls)		Dower, Maintenance, Divorce
B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)	Environmental Science	SDG 11 Make cities and human settlements inclusive, safe, resilient and sustainable SDG 12 - Ensure sustainable consumption and production patterns	SDG 13 - Take urgent action to combat climate change and its impacts SDG 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development SDG 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people, Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems, Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, equitable use of resources for sustainable lifestyles, Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts, Endangered and endemic species of India, Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity
Semester 5				
B.A. LL.B. (H) / B.B.A.	Criminal Procedure	SDG 16 (Promote and		Right of Accused and arrested persons, Right to

LL.B. (H)/ B.Com LL.B. (H)/ LL.B	Code	enforce non-discriminator y laws and policies for sustainable development)		register FIR and Bail, criminal justice administration, custodial violence, under trial prisoners, rarest of rare test for capital punishments, role of police.
Semester 6				
B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)/LL.B.	Labour Laws	SDG 1 - End poverty in all its forms everywhere SDG 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	SDG 10 - Reduce inequality within and among countries SDG 11 - Make cities and human settlements inclusive, safe, resilient and sustainable SDG 16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Labour Courts, Tribunals, Strike, Lock Out, Lay Off, Retrenchment and Closure, Unfair Labour Practices, Penalties, Offences by Companies etc., social security- concept and evolution, Workmen's Compensation Act, 1923, health and safety of workers, working hours of adult, employment of children, provisions regulating employment of women
Semester 7				

B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)	Competition Law	SDG17 (Strengthen the means of implementation and revitalize the global partnership) SDG8 (Decent work and economic growth)	SDG17 (Strengthen the means of implementation and revitalize the global partnership) SDG8 (Decent work and economic growth)	Prohibition of abuse of dominance; Prohibition of anti-competitive agreements
B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)	Juvenile Justice	SDG 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	SDG 5 - Achieve gender equality and empower all women and girls	Rights of child, status of child in matters of maintenance, adoption, surrogacy etc., child and criminal justice administration, offences against children
Semester 8				
B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)	Intellectual property Rights Law - II	SDG 8 (Increase aid for trade support for developing countries)	SDG 9 (build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation)	TRIPS, BERNE CONVENTION, Traditional Knowledge and folklore.
B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)	Law on Infrastructure Development	SDG 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	SDG 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Infrastructure development and economic development, Challenges for local players and foreign companies looking to enter the market, Emerging Options for Project Financing
Semester 9				
B.A. LL.B. (H) / B.B.A.	Public International	SDG16 (Peace, Justice and Strong	SDG16 (Peace, Justice and Strong	International Court of Justice, Human Rights

LL.B. (H)/ B.Com LL.B. (H)	al Law and Human Rights	institutions)	institutions)	
B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)/ LL.B.	Environme ntal Law	SDG 3 - Ensure healthy lives and promote well-being for all at all ages SDG 13 - Take urgent action to combat climate change and its impacts	SDG 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development SDG 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Environment and Environment Pollution: Problem and prospects, International Norms: Sustainable Development Sustainable Development and International Legal Order in 21st Century: Precautionary Principle, Polluter Pays Principle, Environmental Protection through Public Interest Litigation, Environemntal Protection Act The Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981, Noise Pollution Control Order, 2000, Land Pollution
B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)	Informatio n Technology and Telecommu nication Laws	SDG 9 (INDUSTRY, INNOVATION AND INFRASTRUCT URE)	SDG 8 (DECENT WORK AND ECONOMIC GROWTH)	Concept of technology and Law, E-governance.
B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)	Gender Justice	SDG 5 (Achieve gender equality and empower all women and girls)	SDG 10 (Reduce inequality within and among countries)	Gender equality, gender justice and feminist jurisprudence; Deconstructing Man, Woman & Other; Freedom of expression and right to sexual

				identity; Legal protection for the LGBTQIA+ people
Semester 10				
B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)/LL.B	Clinic IV (Professional Ethics and Professional Accounting System)	SDG 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all		Code of ethics, Professional Misconduct, Duty towards society
B.A. LL.B. (H) / B.B.A. LL.B. (H)/ B.Com LL.B. (H)	Cyber Crimes and Law	SDG 16 (Peace and Justice strong institutions)	SDG 9 (Industry, Innovation and Infrastructure)	Legal Framework related to Cyber Crimes (Relevant authorities and their powers to conduct trials and impose punishments), Intellectual Property in Cyber World.

ANNEXURE 2

Rubrics for the Evaluation of Project Based Learning

- 1. Rubric (R1.2) Holistic Scope of Sustainability as one of the parameter for students to work on problems around Sustainable Development Goals in CST**
- 2. Teaching of GSS Using Problem Based Learning; Awareness on Gender Equality and Sensitization (SDG 5)**

SCHOOL OF ENGINEERING

Computer Science & Technology

Following rubrics have been designed for evaluation of five stages of project development in courses being conducted using project Based Learning. The rubrics have been submitted for copyright (Application no: 7348/2022-CO/L 48949).

The stage 1 evaluation incorporates Rubric (R1.2) Holistic Scope of Sustainability as one of the parameter for students to work on problems around Sustainable Development Goals.

Teaching GSS using problem-based learning: A research-oriented approach to develop awareness on Gender equality and sensitization (SDG 5)

- *Shivani Bakshi¹*

Problem-based Learning (PBL) involves student-centred pedagogy wherein students learn about a subject through the experience of solving a prevalent issue, or a problem with a definite solution. Even if the student is unable to arrive at a tangible solution, PBL ushers hope to develop scientific temperament towards education. Thus, encouraging knowledge inquisition, enhanced group collaboration and communication.

The course on Gender, School and Society offers a Gestalt view of the embedded process of gender discrimination, stereotyping and conditioning in our education system overall. The subject besides juxtaposing the idea with practice offers a pedestal to raise concerns regarding paradigmatic shifts in our perception on gender construction in the society. Teaching the subject offers an insightful understanding of current challenges across the socio-cultural norms and binaries. Pedagogy required for this subject is hence, subjected to teaching-learning through brainstorming, supporting, guiding, and close monitoring on the areas identified by the students as areas of their interest. Stretched on the continuum of Constructivism, students in GSS are constantly exposed to the paradigmatic shift in defining gender roles traditionally in our society. Through classroom teaching, students are scaffolded towards group research on the topics prescribed in the syllabus, thus ensuring group learning and collaboration.

The objectives of the assessment are as follows:

Objectives:

The students towards the end of the assessment will be able to:

1. Define important concepts in Gender studies.
2. Explain the paradigmatic shift in education under the lens of gender.
3. Illustrate with examples gender-based discrimination in the society.
4. Compare different intersectionality points between gender, school/ higher education and SDGs envisioned under Agenda 2030.

The assignment is a reflective indicator of how gender is perceived, constructed and floated across the social structures through education in Indian society. The assignment initiates research enquiry into the domains of gender in Indian context through following stages:

1. Selection of any subtopic from the units prescribed in the syllabus.
2. Framing a research argument by situating the area in the student group's immediate private/public domain to ensure a strong contextual understanding.
3. Identify and explore the field to juxtapose lived experiences vs their preconceived notions.
4. Write the paper using the data collected and administer basic statistical methods to gain an insight on the immediate issues, explore possibilities to link the paper to other SDGs and carve out potential solutions/ models to existing problems.
5. The format of the assignment is as follows:
 - a. Introduction
 - b. Literature review (to be categorically identified as sub-themes)
 - c. Rationale
 - d. Research questions and objectives
 - e. Method
 - f. Tools and techniques
 - g. Findings and Analysis
 - h. Discussion/ Conclusion

The rubric for the assessment is as follows:

Competency (Marks allotted)	Novice (0.5)	Average (1)	Mastery (2)	Excellence (2.5)	Exceptional (3)	Total Marks
Collaboration	Min. collaboration	Initiative but task left in between	Only a few members worked	Everyone worked together using their abilities to the max	Everyone volunteered & took responsibility of collating their work with others.	3
Creativity & Innovation	Minimal contribution to research. Inclined towards plagiarism of explored	Creative ideas/ area, limited scope of implementation	Creative ideas and innovation and decent implementation	Creativity and innovation are accompanied with robust field experience	Research focuses on an under researched rare area/ topic and implements successfully	3

	research areas.					
Critical Thinking	Minimal input in critical engagement with the field	Questioning and analysing evidence	Applying reasoned approach to conceptualize	Reflecting upon/reasoning the findings	Synthesizing findings and literature to contribute to further research	3
Task Distribution	Minimum or maximum delegation of tasks	Is planned and assigned to members single-handedly	Is effectively planned as per the everyone's potential	Is distributed as per everyone's potential and shortcomings	Briefing done before distribution of the tasks as per everyone's potential and shortcomings	3
Leadership	Autocratic/Laissez-Fair	Autocratic-Laissez-fair	Democratic	Situational leadership	Transformational Leadership	3
Communication	Minimum communication	Unilateral communication	Dialogue is present	Effective Communication, considering all the necessary feedback	Communication with feedback along with reflective practices to innovate	3
Presentation	Presented throughout by a single member only	Presented by two members	Presented by people respect to everyone's contribution	Presentation is fluid with everyone's participation	Presentation is dialogic with members exemplifying each other's points	3
Cultural & Global Citizenship	Reference to national-level studies	Reference to international and national studies	Reference to national, international and local context-specific studies	Synthesizing the three locales of study to draw empirical findings	Relate international citizenship to the Indian motto of 'Vasudev Kutumbakam'	3

Problem Solving	Identifying what is already known from existent literature	Strategizes the problem with relevant methods	Assessing action in generating course of action	Evaluating the impact of possible interventions to carry out in most viable manner	Approaching the solution with a flexible and determined plan of action	3
SDG Mapping	Paper caters SDG 5 only	Paper caters SDG 4 & 5 only	Paper caters to 4 or more SDGs	Paper caters to 5 or more SDGs	Paper caters to at least 6 or more	3