SR UNIVERSITY

Study Program related to Sustainability

SR University offers a comprehensive set of academic programs focused on sustainability, integrating environmental, social, and technological considerations into engineering and management education. At the undergraduate level, programs such as **B.Tech. in Electrical & Electronics Engineering**, **B.Tech. in Civil Engineering** and **B.Sc. (Agriculture)** embed sustainability principles throughout their curricula. The electrical engineering program emphasizes renewable energy systems, electric vehicles, smart grids, and energy-efficient technologies, equipping students to design cleaner and low-carbon energy solutions. The civil engineering program focuses on sustainable infrastructure development, water and wastewater management, eco-friendly materials, and climate-resilient construction practices, aligning closely with global goals for sustainable cities and communities. While the agriculture program focuses on sustainable farming practices.

At the postgraduate level, programs like **M.Tech. in Construction Technology and Management, M.Tech. in Advanced Manufacturing Systems, M.Tech. Renewable Energy, and M.Tech in Embedded Systems** further advance sustainability education. Students learn green building design, life-cycle analysis, low-waste production techniques, energy-efficient automation, and intelligent monitoring systems for environmental and industrial applications.

These programs demonstrate SR University's **holistic approach to integrating sustainability across engineering domains**, fostering both technical expertise and environmental responsibility. Graduates are prepared to tackle global challenges related to clean energy, sustainable infrastructure, responsible manufacturing, and smart, sustainable systems. By embedding sustainability deeply into its study programs, SR University ensures that students not only gain knowledge but also develop the competencies and values necessary to contribute to a sustainable and resilient future.

S.No	Program releted to sustainability
1.	B.Tech. (Electrical & Electronics Engineering)
2.	B.Tech. (Civil Engineering)
3.	B.Sc. (Agriculture)
4.	M.Tech. (Construction Technology and Management)
5.	M.Tech. (Advanced Manufacturing Systems)
6.	M.Tech. (Embedded Systems)
7.	M.Tech. (Renewable Energy)

Courses/Subjects Related to Sustainability

SR University places sustainability at the heart of its academic vision, integrating environmental, social, cultural, and economic sustainability principles into a broad spectrum of courses across multiple disciplines. Currently, the university offers **142 courses** that are either directly or indirectly related to sustainability, reflecting a comprehensive and multidisciplinary approach to higher education. These courses are embedded within the curricula of the **School of Engineering, School of Computer Sciences, School of Business, and School of Agriculture**, ensuring that students gain exposure to sustainability concepts regardless of their field of study.

The sustainability-linked courses cover a diverse array of topics, including **sustainable manufacturing, renewable energy systems, climate change mitigation, environmental management, water and soil conservation, biodiversity preservation, and waste minimization**. For example, courses such as Sustainability and Ethical Innovation, Sustainable Manufacturing, and Environmental Conservation and Biodiversity equip students with both theoretical knowledge and practical competencies aligned with the **United Nations Sustainable Development Goals (SDGs 7, 9, 11, 12, and 13)**. These courses emphasize holistic thinking, systems analysis, and solution-oriented approaches to real-world sustainability challenges.

SR University emphasizes **experiential learning** alongside classroom instruction, especially for students of **undergraduate program in agriculture**. Students actively participate in **industry-linked projects, research initiatives, and green campus programs**, allowing them to apply sustainability principles in tangible, impactful ways. For instance, students engage in projects that optimize resource use in manufacturing processes, implement energy-efficient technologies, and design water or waste management solutions for campus facilities. These activities cultivate **innovative, low-carbon, and resource-efficient solutions** that benefit both local communities and the wider environment.

Beyond technical and scientific aspects, sustainability education at SRU also addresses **social and economic dimensions**, including corporate social responsibility, ethical decision-making, and sustainable business practices. Students in business and management programs learn to integrate sustainability into organizational strategy, students in agriculture learn sustainable farming practices, while engineering students explore eco-design, renewable energy applications, and environmentally responsible production methods. This interdisciplinary approach ensures that sustainability is not siloed within specialized programs but is a **core principle embedded across the curriculum**.

The university's commitment to sustainability is also evident in its support for **research and innovation**, with faculty and students collaborating on projects addressing pressing environmental and social challenges. Sustainable campus initiatives, such as waste reduction, energy conservation, water management, sustainable agriculture and biodiversity preservation, are often linked to academic coursework, providing a living laboratory for students to observe, analyze, and improve sustainability practices.

In total, the presence of 142 sustainability-related courses underscores SR University's proactive role in fostering environmentally and socially conscious graduates who are capable of making informed decisions and leading initiatives that support a sustainable future. By systematically integrating sustainability into education, research, and campus practices, SR University

demonstrates a holistic and forward-looking approach, positioning itself as a leader in promoting sustainability within higher education in India and internationally.

S.No	Course Title
1	Design Thinking
2	Life Skills
3	Entrepreneurship
4	Research Methodology and IPR
5	Research Methodology and Professional Ethics
6	Sustainability, Critical Thinking
7	Sustainability, Ethical Innovation
8	Fundamentals of Communication Skills
9	Environmental Studies
10	Environmental Studies and Disaster Management
11	Sustainable Solid Waste Management
12	Renewable Energy and Green Technology
13	Hydrology and Water Resources Engineering
14	Environmental Engineering and Design
15	Wastewater Engineering
16	Air and Noise Pollution Control
17	Solid Waste Management
18	Ground Improvement Techniques
19	Sustainable Concrete Materials and Technologies
20	Construction Project Management
21	Construction Technology and Management
22	Lean Construction and Productivity Improvement
23	Building Information Modeling (BIM)
24	Smart Cities
25	Building Technology and Architectural Planning
26	Transportation and Development
27	Airports, Railways and Ports Engineering
28	Sustainable Manufacturing
29	Additive Manufacturing
30	3D Printing Processes
31	Smart Manufacturing
32	Material Characterization
33	Recycling of Waste-Derived Materials
34	Ground Stabilization using Recycled Materials
35	Power Systems Operation and Control
36	Power Electronic Applications to Renewable Energy
37	Advanced Power Electronics for Renewable Sources

38	Smart Grid and Active Distribution Network
39	Energy Storage and Battery Management Systems
40	Power Converters for Microgrids
41	Solar Thermal PV Systems
42	Renewable Energy Systems
43	Microprocessors and Microcontrollers
44	Embedded Systems
45	IoT Architecture and Protocols
46	Machine Learning for Engineering
47	AI for Social Good
48	Artificial Intelligence and Data Science
49	Digital Image Processing
50	Deep Learning and Applications
51	Blockchain for Engineers
52	Data Analytics for Engineers
53	Smart Materials and Sustainable Systems
54	Smart Irrigation Systems
55	Climate Change and Soil Resource Management
56	Farming Systems and Organic Agriculture
57	Principles of Natural Farming
58	Sustainable Agriculture Practices
59	Agro-ecology and Crop Diversification
60	Agronomy of Major Cereals and Pulses
61	Soil Fertility Management
62	Water Management
63	Pest Management
64	Crop Improvement
65	Management of Problematic Soils and Water
66	Soil Conservation and Watershed Management
67	Agro-Meteorology
68	Integrated Farming Systems
69	Renewable Energy in Agriculture
70	Precision Agriculture and Sensors
71	Sustainable Food Systems
72	Sustainability and Rural Development
73	Bioenergy and Biomass Utilization
74	GIS and Remote Sensing for Resource Management
75	Urban Planning and Infrastructure
76	Sustainable Transport Planning
77	Green Building Design

78	Environmental Impact Assessment
79	Waste Management and Circular Economy
80	Disaster Risk Reduction and Management
81	Sustainable Tourism and Cultural Heritage
82	Corporate Social Responsibility and Sustainability
83	Ethics and Values in Engineering
84	Energy and Environmental Economics
85	Smart Water Management Systems
86	Water and Wastewater Treatment Technologies
87	Rainwater Harvesting and Management
88	Renewable Energy Policy and Governance
89	Public Policy and Sustainable Development
90	Sustainability Metrics and Assessment
91	Industrial Safety and Environmental Management
92	Occupational Health and Safety
93	Climate Resilient Infrastructure
94	Geotechnical Earthquake Engineering
95	Soil-Structure Interaction
96	Environmental Geotechnics
97	Remote Sensing and GIS Applications
98	Smart Infrastructure Systems
99	Building Energy Efficiency
100	Green Supply Chain Management
101	Sustainable Business Models
102	Entrepreneurship Development and Business Communication
103	Sustainable Development and Innovation
104	Smart Villages and Rural Entrepreneurship
105	Technology for Sustainable Future
106	Sustainability Leadership and Governance
107	Sustainable Product Design
108	Circular Economy and Sustainable Consumption
109	Sustainable Materials and Nanotechnology
110	Water Resource Management
111	Flood and Drought Management
112	Energy Efficiency in Buildings
113	Waste to Energy Systems
114	Smart Power Distribution Systems
115	Energy Auditing and Management
116	Environmental Biotechnology
117	Bio-remediation Technologies

118	Sustainable Urban Drainage Systems
119	Green Chemistry
120	Eco-friendly Materials
121	Environmental Laws and Policies
122	Climate Action and Sustainability
123	Sustainable Habitat Design
124	Carbon Footprint Analysis
125	Life Cycle Assessment
126	Renewable Power Systems
127	Hydropower Engineering
128	Wind and Solar Energy Systems
129	Sustainable Infrastructure Development
130	Sustainability in Transportation Engineering
131	Smart Grid Technologies
132	Integrated Energy Systems
133	Energy Economics and Policy
134	Renewable Power Distribution and Storage
135	Sustainable Energy Conversion
136	Rural Electrification Systems
137	Urban Climate Adaptation Strategies
138	Sustainable Water Management Technologies
139	Bioengineering for Environmental Sustainability
140	Advanced Waste Treatment Processes
141	Renewable Energy Integration and Smart Grids
142	Energy Harvesting Systems