



# Karunya INSTITUTE OF TECHNOLOGY AND SCIENCES

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

MoE, UGC & AICTE Approved

**NAAC A++ Accredited**

Program Title	Total No. of Courses offered during 2022 - 23	No. of Courses Offered related to Sustainability (Social, Environmental, Cultural and Economics) during 2022 - 23	Notes	Syllabus Link
B.A Criminology	26	4	20CR2010-Victimology has social and economic sustainability. 20CR2004-Forensic Science teaches about the cultural changes through the drug abuse and toxicology. 17CH1004 Environmental Studies Talks about preservation of the environment and the sustainability. 20MS2002 - Modeling for Business Plan talks about the planning for economic growth and sustainability. 20CR2027 NGO Management helps the society to support the needy to come up economically, develop culturally and to maintain sustainability.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.B.A	30	12		<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Com (General)	24	11	22BC2003-Business Economics Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2004- Business Law Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility . 22BC2002- Business Management and Technology Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 17CH1004 - Environmental Studies Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility . 22BC2008 -Business Law- II Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2015 - GST and Customs Law Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2029 Disaster Management Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2023 Financial Management Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2024-International Business Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2020 Enterprenership Development Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility . 17VE2002 - Value Education Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility .	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Com (Financial Technology)	24	11	22BC2003-Business Economics Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2004- Business Law Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility . 22BC2002- Business Management and Technology Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 17CH1004 - Environmental Studies Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility . 22BC2008 -Business Law- II Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2015 - GST and Customs Law Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2029 Disaster Management Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2023 Financial Management Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2024-International Business Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2020 Enterprenership Development Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility .	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>

B. Com (Banking and Capital Markets)	20	19	22BC202033- Introduction to Financial Markets Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility.22BC2034 - NSE Learn to trade Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2036- Capital Market Operations Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2037 -Derivatives Market Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2038- Mutual Fund Management Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2039- Smart Trading Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2040- Currency and Commodities market Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2044-Financial Planning and Wealth Management Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2003-Business Economics Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility.22BC2004- Business Law Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility .17CH1004 - Environmental Studies Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility . 22BC2015 - GST and Customs Law Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility. 22BC2029 - Disaster Management Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility.22BC2024-International Business Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility.22BC2020 - Entrepreneurship Development Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility . 17VE2002 - Value Education Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility .	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Sc (Hons) Agriculture	64	12	The courses are related to sustainability as they are devoted to increase the sustainable production of food resources. The course 21AG2304 Environmental Studies and Disaster Management focuses exclusively on Environmental conservation aspect. 20AG2011 & 20AG2012- Educational Tour I & II focus on Social , Cultural aspects.The curriculum of 21AG1002 Agricultural Heritage is devoted to cultural aspects of Agriculture.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Sc Computer Science	9	2	Few courses are related to social concern. The courses help to analyze the environmental data and predict the future events.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Sc Digital Science and Analytics	15	10	The courses are related to social concern.The Data Science course involves various techniques that help to analyze the environmental data and predict the future events.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Sc Forensic Science	46	4	17CH1004-Environmental Studies, Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on sustainability and social responsibility 20FS2002-Crime & Society, -Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on social responsibility. 20FS2005-Indian Constitution, Fundamental Laws and Procedure- Course has had changes in the Curriculum Refresh program which includes ten expectations focusing on social responsibility, 20FS2008- Forensic Science and Criminal Justice System- Course has had changes in the Curriculum Refresh program which includes seven expectations focusing on social responsibility.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Sc Information Security and Digital Forensics	23	20	The courses are related to social concern that deals with critical aspects of protecting information and detecting potential threats online. Digital Forensics involves in collection and examination of electronic evidence to investigate crimes or unauthorized access.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Sc Optometry	26	2	Curriculum development programme approved the courses which focus on the social sustainability	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Sc Visual Communication	42	5	Curriculum development programme approved the courses which focus on the social sustainability	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Tech Aerospace Engineering	63	5	Courses are related to sustainability (environment and economics).	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Tech Artificial Intelligence and Data Science		13	The courses are connected with social and environmental sustainability.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Tech Biomedical Engineering	53	4	18CH2001-Environmental sciences- the course deals with the environmental studies. 19BM2004 - Nuclear medicine-the course deals with nuclear medicine principles and applications which involves environmental aspects.22BM2002- Hospital Management-the course deals with managing hospital environment.22BM2006-Biomaterials and artificial organs-the course indirectly deals with sustainability index of materials.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Tech Biotech Engineering	31	7	Curriculum development programme approved the courses which focus on the social and environmental sustainability	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>

B.Tech Civil Engineering	45	7	<p>20CE1003 Green Design and Life Cycle Assessment - the course deals with the methodologies followed to identify the carbon emission from the buildings and to analyze the sustainability index of buildings</p> <p>20CE1001 Building Science and Engineering - the subject deals with aspects like climate responsive design of buildings illustrating thermal comfort and energy efficiency requirements</p> <p>20CE1004 Sustainable Building Materials - the subject deals with identification of sustainable building materials and sustainable construction techniques</p> <p>20CE2025 Environmental Engg. Lab - the subject gives hands on training on testing water samples of drinking water and to characterize the wastewater</p> <p>20CE2006 Solid Waste Management - the course deals with techniques and methods used in transformation, conservation and recovery of materials from solid waste and design of waste containment systems</p> <p>20CE2010 Engineering Sustainability: Analysis and Design - the course deals with the application of sustainability concepts in civil engineering</p> <p>20CE2005 Water Supply and Sanitary Engg.- the subject gives insight about treatment and recycle system of wastewater, sewerage, and solid waste.</p> <p>20CE2036 Municipal Waste Management - the subject deals various recycling options available for the solid waste and methods and equipments available to manage the solid waste</p>	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Tech Computer Engineering	74	12	The courses are framed with consideration of social , environmental and economics sustainability.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Tech Computer Science and Engineering	74	26	The courses are framed with consideration of social , environmental and economics sustainability.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Tech Electrical and Electronics Engineering	22	15	<p>17EE3026-Discusses waste energy recovery; 18EE2019-Discusses Slip Power Recovery Schemes &amp; Solid State Switches to reduce power loss ;18EE3016 - Discusses effective forecasting methods of solar and wind energy; 18EE3018, 18EE3019, 18EE3021, 18EE3022 - Discuss environmental friendly energy systems, Electric Vehicle and Power Quality Improvement; 19EE2002- Discusses energy efficient power generation, transmission and distribution &amp; Dynamic Pricing; 19EE2003, 19EE2032- Discuss Renewable Energy and EV; 19EE2023,19EE2025- Discusses economic design of electrical systems; 19EE2027 - Elloborates electrical safty issue in tern safety social environment; 20EE1003- Insists the importance of agricultural and biological sensing and monitoring systems - relevent to the society ; 20EE3001- Talks about IoT for Food Security</p> <p><b>22EC1001-Physical Electronics</b>-used to design products that minimizes the environmental harmful byproducts during the manufacturing and prevents pollution.<b>22EC1002-Physical Electronics Laboratory</b>-used to protect the environment and produces products that are environmentally friendly.<b>22EC1003-PCB Design using CAD Tools</b>-PCB design and manufacturing coincides with the social responsibility to protect the environment by PCB recycling processes.<b>19EC2001-Electronics for Intelligent Machines</b>-Intelligence assist in developing and optimizing renewable energy sources such as solar panel,electric vehicles and wind turbines.<b>20EC1005-Electronics For Intelligent Machines laboratory</b>-support in designing and implementing sustainable solutions for recycling. waste management process and to conserve natural resources.<b>22EC2012-Electromagnetic Fields and Waves</b>-study the influence of electromagnetic radiation on living organisms. It creates the awareness of the magnetic field levels in TV,Microwave oven,portable telephones and other household appliances. <b>22EC2013-Digital System Design</b>-used to design smart systems to solve problems related to long-term sustainability.<b>22EC2014-Digital System Design Laboratory</b>-used to produce products to boost environment sustainability.<b>20EC2003-Signals and Systems</b>- To understand how environmental factors constrain communication strategies.<b>18EC2008 Analog Circuits</b>-create the awaremess towards socio environmental technologies through analog circuits. <b>22EC2032 Analog Circuits Laboratory</b>-design analog based products that makes optimal use of resources and energy and develops sustainable infrastructure.<b>18EC2010 Microcontrollers</b>-used to design environmental control system.<b>18EC2011-Microcontrollers Laboratory</b>-design environmental sensors,green wall drip irrigation system, temperature sensors , humidity sensors and eco-friendly automation systems.<b>18EC2012- Linear Integrated Circuits</b>-The study of ICs are related to the environmental crisis in tremns of energy and and special materials.<b>22EC2017-Transmission lines and RF systems</b>-solve the environmetal issues raised by construction of transmission lines.<b>20EC2012-Electromagnetics and Radiation Laboratory</b>-To design products to reduce electromagnetic pollution from generated electromagnetic radiation.<b>18EC2015 Digital Signal Processing</b>-used to extract design variables from datasets related to sustainability using signal processing algorithms.<b>18EC2016-Digital Signal Processing Laboratory</b>-used to implement signal processing to solve environmental and sustainabilty issues.<b>18EC2019 Digital IC Design</b>- design products related to environmental and economical factors.<b>18EC2020 Antennas and Propagation</b>- used to develop Millimeter wave antenna array diagnosis,5G channel model, radio channel emulator, and testbeds for performance testing based on the environmental technologies.<b>18EC2021-Microwave and Optical Communication</b>-It creates the awareness of the magnetic field levels in TV,Microwave oven,portable telephones and other household appliances.<b>22EC2011 -Microwave and Optical Communication Laboratory</b>- to challenge the environmental constraints using minimum and best hardware products. <b>20EC2005 IoT for Communication Engineering</b> used to</p>	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Tech Electronics and Communication Engineering	98	40		<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>

B.Tech Electronics and Computer Engineering	64	23	Machine Learning Laboratory (21EC2026) - can be applied in various sustainability-related projects, such as optimizing energy consumption, predicting environmental trends, or managing resources efficiently.; LINUX Programming (21EC2027) - can be beneficial in the context of promoting open-source and sustainable technology; Software Engineering (21EC1007) -the principles of software engineering can be applied to develop sustainable software systems.; Data Structures and Algorithms (21EC2007) - indirectly contribute to sustainability by improving efficiency in data handling and processing, which can be applied in various sustainable applications.; Fundamentals of JAVA Programming (21EC2009) - used to develop sustainable software solutions.; Machine Learning (21EC2018) - can be applied in various sustainability-related projects, such as optimizing energy consumption, predicting environmental trends, or managing resources efficiently.; Internet of Things (21EC2016) and Internet of Things Laboratory (21EC2017) - used in environmental monitoring and resource management, making it relevant to sustainability; Cyber Security (21EC2023) - important in protecting sensitive environmental and sustainability data, so this course may indirectly contribute to sustainability awareness; Cloud and Distributed Computing (21EC2024)-used for sustainable data storage and processing; Neural Networks and Deep Learning (21EC2025) - application related to environmental monitoring, which makes this course relevant to sustainability.; Data Analytics & Visualization (21EC2028) - analyze and visualize sustainability-related data; High-Performance Computing (21EC2029) - applications related to sustainability, including climate modeling, energy efficiency optimization, and more. Computer Vision (21EC2032) - has applications in environmental monitoring, such as wildlife tracking or vegetation analysis, which align with sustainability goals.;Data Mining (21EC2035) - used to extract valuable insights from large datasets related to sustainability, such as climate data or environmental trends.; Signal Processing Algorithms and its Architectures (21EC2038) - applied in various sustainability-related applications, like environmental monitoring and data analysis. MEMS and Semiconductor Sensors (21EC2040) - used for environmental monitoring and sustainability; Social Media Analytics (22EC2002) - analyzed to gain insights into public perception and discussions related to sustainability issues.; Introduction to Big Data (22EC2001) - to analyze large datasets related to environmental factors and resource management.; Pattern Recognition Techniques (22EC2005): applied to various sustainability-related problems, such as image recognition for environmental monitoring; Deep Learning (22EC2006): used for tasks like image and speech recognition, which can be relevant in environmental and sustainability applications; Natural Language Processing (22EC2007): to analyze textual data related to sustainability and environmental issues, such as news articles or social media posts.; Bio-inspired Optimization Techniques (22EC2009):-applied to solve complex optimization problems related to sustainability, like resource allocation.; Brain-Computer Interface (22EC2027): While primarily focusing on human-computer interaction, BCI technology has potential applications in improving 18FP2017 - Environmental friendly sustainable cold chain management. 18FP2027 - Optimised design of heat exchangers and evaporators to reduce environmental impact and use of solar energy sources. 18FP2031 - Best practices in plantation management to increase social standard of plantation workers. 18FP2033 - Rearing of meat, poultry and fish as sustainable modes of protein and omega-3 fatty acids. 18FP2035 - Use of innovations in food packaging to reduce, reuse and recycle plastics. 18FP2037 - Project evaluation and costing to provide sustainable technologies.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Tech Food Processing and Engineering	28	23	18FP2017 - Environmental friendly sustainable cold chain management. 18FP2027 - Optimised design of heat exchangers and evaporators to reduce environmental impact and use of solar energy sources. 18FP2031 - Best practices in plantation management to increase social standard of plantation workers. 18FP2033 - Rearing of meat, poultry and fish as sustainable modes of protein and omega-3 fatty acids. 18FP2035 - Use of innovations in food packaging to reduce, reuse and recycle plastics. 18FP2037 - Project evaluation and costing to provide sustainable technologies.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Tech Mechanical Engineering	49	49	Few Courses are related to both Social and Environmental	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
B.Tech Robotics and Automation	50	45	The curriculum consists of courses related to social, environmental, cultural and economic dimensions of sustainability.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Sc Agronomy	19	13	For MSc (Ag) Agronomy, apart from the research programme, 19 courses are being conducted with total credit hours of 46. Out of which there are 13 core agronomy courses and all these courses have a focus on environment and sustainability. The details of the courses, are elaborated in the syllabus cum programme structure (Refer next column)	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Sc Applied Criminology	18	11	17VE3002 - Value education inculcates high value of social, cultural and humanitarian values that has substantiability. 21CR3021 - Crime prevention & community policing has social and environmental sustainability. 21CR3020 - Disaster and Risk Management is related to social and environmental sustainability. 21CR3015 - Penal and Correctional Sciences speaks about restorative justice which upholds the social wellbeing and the community development and reintegration into the society. 21CR3014 - Psychological Profiling and Criminal Investigation helps to profile the required and keep the society at bay from unwanted. 21CR3012 - Police Sciences provides safety and security for the society and social and cultural values upheld. 21CR3010 - Local and Special Law controls the social and environmental peace and tranquility. 21CR3009 - Victimology and Victim Assistance sustains the interests of the affected people in the form of economic advances, assistance and compassion. 21CR3007 - Employment Oriented Training helps generate economic and cultural sustainability. 21CR3001 - Theoretical Criminology teaches the causes of social flaws and the ways to correct it. 21CR3002 - Contemporary Crimes warns the society to safeguard from the social evils and to adept to the environment.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Sc Biotechnology	21	3	Curriculum development programme approved the courses which focus on the social and environmental sustainability	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>

M.Sc Chemistry	23	3	Curriculum development programme approved the courses which focus on the social and environmental sustainability. 20CH3022-Applied Electrochemistry: Sustainable development on wastewater treatment. 17VE3002-Value inculcation, Mental health which helps the student community to inculcate value.20CH3019-Nuclear chemistry and solid state Chemistry- awareness on the environmental effects on nuclear power plant .	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Sc Clinical Psychology	21	10	21CP3002: Theories of Personality gives an insight into people's behavior and helps to understand the framework of their personality. 21CP3003: Developmental Psychology elaborately explains how developmental issues lead to adult psychological problems and mental disorders. 21CP3004: Cognitive Psychology helps us understand different individuals' mental processes and promotes inclusiveness in society. 21CP3006: Advanced Social Psychology emphasizes how social and cultural aspects influence an individual's behaviour. 21CP3010 & 21CP3014: Psychopathology focuses on creating awareness about mental health disorders and related issues, which can help society understand the individual's vulnerability. 21CP3011 & 21CP3015: Psychotherapeutic Techniques focuses on the management of the disorders and support required from society for the individual's recovery. 21CP3012: Skills in Clinical Practice illustrates the skills that can help deal with an individual's psychological issues. 21CP3023: Neuropsychology helps us to understand how certain neurological condition leads to mental problems in people and promotes inclusiveness in society. 21CP3024: Forensic Psychology highlights the importance of psychological state during the crime and court trials.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Sc Food Science and Technology	24	3	22FT3009 Nutrition and Metabolism: The course provides insights into nutritional requirement for societal benefit as a whole; 22FT3010 Food Quality Systems and Management: The purpose of this course is to familiarise students with food safety, food contamination, and food adulteration. They also learn about HACCP and its application, as well as the structure and operations of quality management systems for societal need. 22FT3018 Food Packaging Technology.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Sc Forensic Science	24	2	The courses are related to social concern that deals with crime and crime control. 20FS3001- Forensic Science and Criminal Justice System: awareness on the responsibility of Forensic expert in the control of crimes, 20FS3010- Forensic Psychology- Assessing the psycological aspects of the suspect and the victim.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Sc Informationa Security and Digital Forensics	21	21	The courses are related to social concern that deals with critical aspects of protecting information and detecting potential threats online. Digital Forensics involves in collection and examination of electronic evidence to investigate crimes or unauthorized access.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Sc Physics	25	2	Courses are related to sustainability (environment).	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Tech Aerospace Engineering	23	1	Courses are related to sustainability (environment and economics).	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Tech Biomedical Instrumentation	20	1	Medical Ethics and Safety	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Tech Biotechnology	11	2	Curriculum development programme approved the courses which focus on the social and environmental sustainability	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Tech Computer Science and Engineering		5	The courses are connected with social, environmental and economics sustaniability.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Tech Cyber Security	13	7	The courses are connected with social and environmental sustaniability.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Tech Environmental and Water Resource Engineering	14	7	18CE3044 Solid and Hazardous Waste Management - the course deals with the characteristics of solid and hazardous wastes and suitable disposal method 18CE3054 Principles of Integrated Water Resources Management - the course imparts knowledge about planning of integrated water resources development projects considering sustainability aspects 18CE3041 Advanced Environmental Engg. lab -the experiments are related to monitoring and assessing air and water quality of samples and design suitable treatment method and control measures for water and air pollution problems 18CE3037 Environmental Chemistry and Microbiology - The course deals with chemical contents in the context of environmental studies to gain competency in solving environmental issues due to chemicals based pollution 18CE3035 Atmospheric Environmental Pollution and Control - the course deals with characterization, effects of air pollution and suitable measures to contol air pollution 18CE3039 Water and Wastewater Treatment Technology - the course covers design of water and wastewater treatment systems and methods for treatment and disposal of sludge from treatment plants 18CE3046 Cleaner Production and Sustainable Development - the course deals with principles and implementation of sustainable development and cleaner production measures	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>

M.Tech Food Processing and Engineering	17	7	20FP3005 Advanced Food Process Equipment Design; 20FP3006 Advances in Food Process Engineering: These two courses teach students Imparts information regarding the importance of food thermal processing. to educate them about the cutting-edge technologies used in food processing. to train personnel in the use of cutting-edge instruments in the food industry. 20FP3011 Advances in Dairy, Meat and Fish Processing; 20FP3012 Advances in Processing of Cereals, Pulses and Oil Seeds; 20FP3013 Advances in Processing of Horticulture, Spices and Plantation Products, 20FP3016 Milling, Bakery and Confectionery Technology These professional core courses in the domain of food processing have a direct impact on the well being of the society providing them safe food for consumption. 20FP3022 Food Supply Chain Management: addresses essential managerial and social aspects of food supply chains, takes on logistics and supply chain activities in food sectors, and measures and improves the performance of supply chain systems	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Tech Robotics and Automation	17	-		<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Tech Structural Engineering	15	1	20CE3024 - Sustainable construction - This course deals with the components of sustainability in construction methods for infrastructure industry	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Tech VLSI Design	18	-		<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
MBA	77	77	The MBA courses both core and electives are related to sustainability. It is connected with economics and social sustainability. A few courses are connected with cultural and environmental too. The specification of the courses are furnished in the other sheet.	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>
M.Sc. Nanoscience and Technology	15	5	17NT2007 - Nanotechnology in Textiles and 17NT3015-Industrial Nanotechnology courses are related to sustainability (economics)., 17NT3006,17NT3009,17NT3030 courses are related to sustainability (Environmental).	<a href="https://karunya.edu/academics">https://karunya.edu/academics</a>

<b>Total No. of Courses offered</b>	<b>1436</b>
<b>No. of courses related to Sustainability</b>	<b>562</b>
<b>% of courses related Sustainability</b>	<b>39.14%</b>