DATTAJIRAO KADAM ARTS,SCIENCE AND COMMEREC COLLEGE, ICHALKARANJI
DEPARTMENT OF ELECTRONICS

Details of Cross Details of Cross Cutting Issues relevant with Gender Awareness,Environmental Awareness,Professional Ethics and Human Values

Sr. No.	Name of the Course	Title of Paper	Sem.	Name of the Unit	Details of Cross Cutting Issues relevant with			
					Gender Awareness	Environmental Awareness	Professional Ethics	Human Values
1	B.Sc.I	Electronic Circuit Elements	I	Passive Circuit Elements I	Encourage equal participation in lab activities and discussions on passive circuits, ensuring that all genders feel represented and included.	Highlight the need for selecting components that have minimal environmental impact and promote the recycling of passive elements.	Emphasize the importance of sourcing components ethically, considering the labor practices involved in their production.	Foster a spirit of teamwork and respect when working on projects involving passive circuits, valuing each member's input.
					Use examples and case studies that are free from gender stereotypes in teaching passive circuit concepts.	Teach the importance of designing circuits with energy efficiency in mind to reduce the environmental footprint.	Stress the importance of accurate and transparent reporting of experimental results in passive circuit analysis.	Encourage responsible use of electronic components, considering the broader impact on society and the environment.
				Passive Circuit Elements II	When designing electronic circuits, consider the diverse needs of users, including gender-specific ergonomics in device handling.	Emphasize the importance of choosing eco-friendly and recyclable materials for passive components like resistors and capacitors.	Stress the ethical obligation to ensure accurate specification and testing of passive components to prevent malfunctions.	Emphasize the value of producing reliable and safe electronic devices that prioritize the well-being of users.
					Promote the involvement of women in electronics by highlighting contributions from female engineers and scientists in the study material.	Encourage designs that minimize energy waste, promoting the use of energy-efficient components to reduce environmental impact.	Highlight the importance of sourcing components from suppliers who adhere to ethical labor and environmental practices.	Discuss the responsibility of ensuring that electronic circuits are applied in ways that benefit society, avoiding harmful uses.
				Circuit Fundamental	Ensure that teaching methods and materials are designed to be inclusive, encouraging participation from all genders in understanding circuit fundamentals.	Emphasize the importance of designing circuits that reduce power consumption and minimize environmental impact.	Highlight the ethical responsibility to ensure that circuit designs are accurate and safe for intended applications.	Stress the importance of designing circuits that serve society positively, ensuring they contribute to human well-being.
					Use examples and case studies that showcase contributions from both male and female engineers to inspire students.	Advocate for the use of environmentally friendly materials in the construction of basic circuit elements.	Discuss the importance of sourcing circuit components from suppliers who follow ethical labor practices.	Emphasize the value of designing circuits that prioritize the safety of users and the broader community.
				Network Theorems	Foster an environment where all genders feel equally encouraged and supported in learning and applying network theorems.	Apply network theorems to design circuits that optimize energy use, reducing environmental impact.	Stress the ethical obligation to apply network theorems accurately in circuit analysis to avoid errors that could lead to malfunctions.	Emphasize the importance of using network theorems to design circuits that are safe and do not harm users or their property.
					Include examples of both male and female engineers in the history and development of network theorems to inspire a diverse student body.	Encourage the selection of components that are environmentally friendly when applying network theorems in practical circuits.	Discuss the importance of considering the ethical implications of the end-use of circuits analyzed using network theorems.	Highlight the responsibility to apply network theorems in ways that benefit society, such as in healthcare or environmental monitoring systems.

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2	B.Sc.I	Digital Electronics - I	I	Number Systems	Ensure that teaching methods for number systems are accessible and engaging to all genders, promoting equal participation in understanding digital electronics.	Emphasize the importance of using number systems in designing digital circuits that minimize resource usage and energy consumption.	Stress the ethical obligation to ensure precise and correct application of number systems in digital circuit design to avoid errors.	Discuss the role of number systems in ensuring fair and unbiased processing of data, upholding values of equality.
					Use examples that reflect diverse contributions from both male and female scientists in the development of digital number systems.	Highlight the environmental impact of electronic waste, encouraging responsible disposal and recycling of digital components.	Emphasize the importance of clear and honest communication when representing numbers and data in digital systems.	Highlight the importance of accuracy and integrity in using number systems to represent and process information truthfully in digital electronics.
				Logic Gates and Boolean Algebra	Ensure that examples and problem sets in logic gates and Boolean algebra are designed to be inclusive and relatable to all genders, promoting equal engagement.	Emphasize the importance of designing logic circuits that minimize power consumption, thereby reducing environmental impact.	Highlight the ethical responsibility to ensure that logic circuits are designed and implemented with accuracy and reliability.	Emphasize the value of precision in the use of Boolean algebra and logic gates, ensuring that digital systems function correctly and safely.
					Include discussions of contributions from both male and female mathematicians and engineers in the development of Boolean algebra and logic gate theory.	Advocate for the use of environmentally friendly materials and practices in the construction and implementation of logic gates in digital circuits.	Stress the importance of clearly and honestly representing logical operations and outcomes, ensuring accurate data processing and decision-making.	Discuss the broader human implications of logic gate applications, ensuring that they contribute positively to society and do not cause harm.
				Combinational Logic Analysis and Design	Encourage both male and female students to take active roles in combinational logic design projects, promoting gender equality in technical skills development.	Promote the design of combinational logic circuits that are energy-efficient, minimizing power consumption and environmental impact.	Emphasize the ethical obligation to conduct thorough and honest testing of combinational logic circuits to ensure reliability and safety.	Highlight the value of producing high-quality, reliable combinational logic circuits that enhance user safety and functionality.
					Use case studies and examples that highlight contributions from a diverse range of engineers, including women, in the field of combinational logic.	Encourage the use of sustainable and recyclable materials when designing and building combinational logic circuits.	Discuss the importance of following ethical guidelines in the design process, ensuring that circuits serve their intended purpose without harm.	Stress the importance of considering the societal impact of combinational logic designs, ensuring they are used for the betterment of society.
				Flip-Flops	Ensure that instructional materials on flip-flops are designed to be accessible and engaging to all genders, encouraging equal participation in digital electronics.	Promote the design of flip-flops that minimize power consumption, reducing the environmental footprint of digital circuits.	Emphasize the ethical responsibility to design flip-flop circuits with accuracy and reliability, ensuring they perform their intended functions without failure.	Highlight the value of designing flip-flop circuits that are dependable and safe for use in critical applications, ensuring user trust.
					Use examples and case studies that showcase contributions from engineers of all genders in the development and application of flip-flops.	Encourage the use of environmentally friendly materials and practices in the production of flip-flops and related components.	Stress the importance of clear and honest documentation and communication about the operation and limitations of flip-flops in digital systems.	Discuss the importance of using flip-flop technology in ways that positively impact society, such as in medical devices or safety systems.

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3	B.Sc.I	Semiconductor Devices	II	Semiconductor Basics	Promote active involvement of all genders in learning and research related to semiconductor basics, fostering an inclusive environment.	Advocate for the use of sustainable and environmentally friendly materials in semiconductor manufacturing processes:	Stress the ethical responsibility to ensure accurate representation and understanding of semiconductor principles to avoid misapplication in technology.	Ensure that semiconductor devices are designed with a focus on user safety and reliability.
					Highlight the achievements of both male and female scientists and engineers in the field of semiconductors to inspire students.	Emphasize the importance of designing semiconductor devices that contribute to energy efficiency and reduce environmental impact.	Highlight the need for transparency and responsibility in sourcing and manufacturing semiconductor materials.	Discuss the role of semiconductor technology in advancing applications that benefit society, such as in healthcare and communication.
				Semiconductor Diodes	Encourage equal participation from all genders in learning about semiconductor diodes, fostering an inclusive educational atmosphere.	Promote the use of environmentally friendly processes and materials in the production of semiconductor diodes to minimize ecological impact.	Stress the ethical responsibility to provide accurate information and specifications for semiconductor diodes to ensure their proper use in circuits.	Ensure that semiconductor diodes are designed and manufactured with a focus on reliability and safety for end-users.
					Highlight the contributions of both male and female engineers in the development and application of semiconductor diodes to inspire a diverse student body.	Emphasize the importance of designing semiconductor diodes that enhance energy efficiency in electronic devices, contributing to overall environmental sustainability.	Highlight the need for ethical sourcing practices and transparency in the supply chain of semiconductor materials.	Discuss how advancements in semiconductor diode technology can positively impact society, such as in improving electronic device performance and accessibility.
				Bipolar Junction Transistor	Promote an inclusive approach to learning about bipolar junction transistors (BJTs), ensuring that all genders are equally engaged and represented.	Advocate for the use of environmentally friendly materials and processes in the production of BJTs to reduce ecological impact.	Highlight the ethical importance of providing accurate and reliable specifications for BJTs to ensure proper functionality and safety in electronic circuits.	Stress the importance of designing BJTs with a focus on reliability and user safety, ensuring they function correctly and safely in various applications.
					Feature achievements of both male and female engineers who have contributed to the development and application of BJTs to inspire a broader range of students.	Emphasize the design of BJTs that improve the energy efficiency of electronic devices, thereby contributing to environmental sustainability.	Discuss the need for ethical practices in sourcing materials and manufacturing BJTs, including transparency and responsible labor practices.	Discuss how BJTs contribute to the advancement of technology and their positive impact on society, such as in improving communication and electronics.
				Special Semiconductor Devices	Ensure that educational materials and discussions on special semiconductor devices are designed to engage and support students of all genders equally.	Promote the development and use of special semiconductor devices that incorporate environmentally friendly materials and processes.	Stress the importance of providing accurate and reliable information about special semiconductor devices to ensure proper application and avoid potential issues.	Ensure that special semiconductor devices are designed with a focus on high quality and safety, prioritizing user well-being.
					Highlight contributions from both male and female engineers in the field of special semiconductor devices to inspire a diverse student audience.	Emphasize the role of special semiconductor devices in enhancing the energy efficiency of electronic systems, contributing to environmental sustainability.	Highlight the need for ethical practices in the production and sourcing of materials for special semiconductor devices, including transparency and responsible labor practices.	Discuss how special semiconductor devices can be used to create technologies that positively impact society, such as in medical devices or environmental monitoring systems.

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4	B.Sc.I	Digital Electronics - II	II	Counter Techniques	Encourage equal involvement of all genders in learning and applying counter techniques, fostering an inclusive educational environment.	Highlight the importance of designing counters that are energy-efficient to minimize the environmental impact of digital systems.	Emphasize the ethical responsibility to ensure accurate and reliable design of counters, preventing potential failures and ensuring system integrity.	Ensure that counter techniques are designed with a focus on reliability and safety to enhance user trust and system performance.
					Feature contributions from both male and female engineers in the development and application of counter techniques to inspire a broad student base.	Promote the use of environmentally friendly materials in the construction of counters to support sustainable electronics practices.	Stress the importance of clear and honest communication about the capabilities and limitations of counter techniques.	Discuss how effective counter techniques can contribute to advancements in technology that benefit society, such as in improved timing and counting systems.
				Shift Registers, Buffers and Latches	Ensure that all genders are equally encouraged to participate in learning about shift registers, buffers, and latches, promoting an inclusive classroom environment.	Promote the design of shift registers, buffers, and latches with energy-efficient practices to reduce the environmental impact of digital systems.	Emphasize the ethical importance of accurate design and implementation of shift registers, buffers, and latches to ensure reliable and functional electronic systems.	Focus on designing shift registers, buffers, and latches that prioritize quality and user safety, ensuring reliable operation in electronic systems.
					Highlight the work of both male and female engineers in the field to provide role models and inspire students from all backgrounds.	Advocate for the use of environmentally friendly materials in the manufacture of these components to support sustainability.	Stress the need for clear and honest representation of how these components function, avoiding misleading information and ensuring proper usage.	Discuss how advancements in these components contribute to technological improvements that benefit society, such as in data storage and processing.
				Multiplexer, Demultiplexer , Decoder and Encoder	Ensure that teaching and resources on multiplexers, demultiplexers, decoders, and encoders are designed to engage students of all genders equally.	Emphasize designing multiplexers, demultiplexers, decoders, and encoders that optimize energy use, reducing the overall environmental impact of electronic systems.	Highlight the ethical responsibility to ensure that multiplexers, demultiplexers, decoders, and encoders are accurately designed and implemented to avoid system failures and ensure proper functionality.	Ensure that these components are designed with a focus on high quality and safety to enhance the reliability of electronic systems.
					Incorporate examples and case studies featuring contributions from both male and female engineers in the development and application of these components.	Promote the use of eco-friendly materials and practices in the manufacturing of these components to support environmental sustainability.	Stress the importance of providing clear and honest specifications and documentation for these components to support correct usage and avoid misapplication.	Discuss how improvements in these components contribute to advancements in technology that positively impact society, such as in data handling and communication systems.
				Data Conversion	Encourage participation from all genders in understanding data conversion techniques, ensuring a balanced learning environment.	Emphasize the importance of designing data conversion systems that are energy-efficient to reduce their environmental footprint.	Stress the ethical need for precise and reliable data conversion processes to ensure accurate information handling and avoid errors.	Ensure that data conversion systems are designed to be reliable and safe, upholding high standards for user trust and system performance.
					Showcase achievements from both male and female engineers in the field of data conversion to inspire a diverse student body.	Advocate for sustainable materials and practices in the production and implementation of data conversion technologies.	Highlight the importance of clear and honest communication regarding the capabilities and limitations of data conversion systems.	Discuss how advancements in data conversion technology can benefit society, such as improving data accuracy and communication efficiency.

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5	B.Sc.II	Electronic Communication systems	I	Introduction to communication	Ensuring equal access to communication technologies for all genders.	Reducing the environmental impact of communication systems by improving energy efficiency.	Ensuring ethical handling and protection of user data in communication systems.	Promoting fair access to communication technologies regardless of socio-economic status.
					Designing communication systems that are user-friendly for all genders, avoiding gender bias.	Proper disposal and recycling of electronic components to minimize environmental damage.	Maintaining honesty and clarity in communication system operations and user interactions.	Designing systems that consider user needs and promote respectful, clear communication.
				Analog Modulation-Demodulation	Emphasizing the importance of encouraging more women to participate in electronics and communication engineering fields.	Focusing on the development and use of modulation techniques that minimize energy consumption, reducing the environmental impact of communication systems.	Stressing the importance of ethical practices in maintaining the integrity of transmitted signals, avoiding unauthorized interceptions or alterations.	Designing communication systems that are accessible to all, regardless of socioeconomic status, ensuring that technology benefits everyone.
					Ensuring that examples, case studies, and historical contributions in course materials are inclusive and highlight contributions from diverse gender backgrounds.	Promoting the recycling and responsible disposal of electronic components used in communication systems to reduce e-waste.	Encouraging transparency and honesty in the design and implementation of communication systems, ensuring that information is accurately transmitted and received.	Upholding the value of privacy by developing secure modulation and demodulation techniques that protect user data from unauthorized access.
				Frequency Modulation	Ensuring that teaching methods and resources are inclusive and accessible to all genders, promoting equal opportunities in learning about frequency modulation.	Encouraging the use of frequency modulation techniques that require less power, contributing to energy conservation and reducing environmental impact.	Promoting ethical considerations in the transmission of FM signals, ensuring that communication is not compromised by interference or unethical practices.	Developing frequency modulation systems that are designed to be accessible and beneficial to all, regardless of their location or economic status.
					Showcasing contributions to frequency modulation technology by professionals from various gender backgrounds to inspire a diverse student body.	Focusing on techniques that minimize unnecessary electromagnetic emissions, which can contribute to environmental pollution.	Ensuring that frequency modulation systems are designed and operated to maintain the integrity and accuracy of transmitted information.	Ensuring that FM systems respect user privacy, preventing unauthorized access to transmitted data.
				Introduction to Communication and Navigation System	Promoting gender diversity in the study and development of communication and navigation systems to ensure a wide range of perspectives in innovation.	Advocating for the development of communication and navigation systems that are energy-efficient and environmentally sustainable.	Emphasizing the importance of ethical practices in the use and sharing of navigation data, ensuring it is used responsibly and without harm.	Developing communication and navigation systems that prioritize human safety and well-being in their design and implementation.
					Ensuring that all genders have equal access to education and career opportunities in the fields of communication and navigation technologies.	Designing systems with reduced electromagnetic interference to minimize their impact on the natural environment.	Promoting honesty and transparency in the communication systems, ensuring that information is accurately and ethically conveyed.	Ensuring that these systems are accessible to all people, regardless of geographic or economic barriers, promoting equal benefits for all.

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6	B.Sc.II	Introduction to Microprocessor 8085	I	Microcomputer Organization	Encouraging equal participation of all genders in learning and contributing to microcomputer and microprocessor technology, fostering a diverse engineering community.	Emphasizing the importance of designing microcomputer systems that are energy-efficient and have a lower environmental impact.	Ensuring that microcomputer systems are designed and used ethically, with a focus on privacy and security.	Designing microcomputer systems that are accessible to everyone, including those with disabilities, to ensure inclusive technology.
					Showcasing the work of women and underrepresented genders in the development of microprocessor technology to inspire future generations.	Promoting practices that extend the lifecycle of microprocessor-based systems to reduce electronic waste.	Encouraging responsible innovation that considers the broader social impact of microprocessor technology.	Focusing on the development of microprocessor applications that improve the quality of life and serve the common good.
				8085 Microprocessor Architecture	Promoting gender diversity in the study and design of microprocessor architecture to foster innovation and inclusivity in technology development.	Emphasizing the importance of designing microprocessor architectures that optimize energy consumption, reducing the environmental impact of electronic devices.	Encouraging ethical considerations in the design and application of microprocessor architecture, focusing on privacy, security, and social responsibility.	Designing microprocessor architectures that are accessible to all users, including those with disabilities, ensuring technology serves the broader community.
					Ensuring that educational resources and opportunities related to microprocessor architecture are accessible to all genders, breaking down barriers to participation.	Promoting environmentally friendly manufacturing processes for microprocessors to minimize waste and resource usage.	Promoting honesty and integrity in the development of microprocessor systems, ensuring they are designed with user safety and reliability in mind.	Focusing on the development of microprocessors that contribute to improving the quality of life, prioritizing applications that benefit society as a whole.
				Instruction set of 8085	Ensuring that teaching about the 8085 instruction set is inclusive, with equal encouragement and support for all genders in mastering programming and hardware skills.	Teaching the importance of writing code that optimizes energy use in microprocessor operations, contributing to the development of greener technology.	Encouraging ethical considerations when programming with the 8085 instruction set, ensuring that code is reliable, secure, and free from malicious intent.	Designing instruction sets and teaching methods that are accessible to all, regardless of background, ensuring inclusive learning and application.
					Highlighting contributions of diverse genders in the development and application of microprocessor instruction sets to inspire students.	Emphasizing instruction sets that enable the efficient use of hardware resources, reducing the overall environmental footprint of devices.	Promoting the importance of writing clear and understandable code, so that it can be easily reviewed and maintained with integrity.	Focusing on developing instruction sets that enhance user experience and meet the needs of diverse populations, reflecting a commitment to improving quality of life through technology.
				8085 Programming	Promoting equal opportunities for all genders to learn and excel in 8085 programming, breaking down stereotypes and encouraging diverse participation.	Teaching students to write efficient code that minimizes energy consumption, contributing to the creation of environmentally sustainable electronic systems.	Instilling the importance of writing secure, reliable, and ethically sound code that protects user data and system integrity.	Encouraging the development of programs that are easy to use and understand, ensuring that technology benefits a wide range of users.
					Showcasing the achievements of female programmers and engineers in the field to inspire students and promote gender inclusivity.	Encouraging programming practices that extend the life of hardware, reducing the need for frequent replacements and thereby decreasing electronic waste.	Teaching the value of respecting intellectual property rights and avoiding plagiarism in coding practices.	Promoting the creation of programs that address societal needs and improve the quality of life, reflecting a commitment to human welfare.

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7	B.Sc.II	Digital Modulation and Mobile telephone system	II	Analog Pulse Modulation	Ensuring equal representation and opportunities for women in electronics and telecommunications fields, particularly in areas like Analog Pulse Modulation and Digital Modulation, where gender disparity can be prevalent.	Focusing on energy-efficient design and operation in Analog Pulse Modulation and Digital Modulation systems to minimize environmental impact and reduce power consumption.	Ensuring that professional practices in mobile telephone systems uphold the highest standards of data privacy and security, respecting user confidentiality and ethical guidelines.	Designing Analog Pulse Modulation and Digital Modulation systems with human-centric values to ensure they are accessible to individuals with diverse needs and abilities.
					Promoting gender-inclusive design practices in mobile telephone systems to ensure that the technology is accessible and beneficial to all users, regardless of gender.	Addressing the challenge of electronic waste management in mobile telephone systems by designing for recyclability and developing sustainable disposal practices.	Maintaining ethical standards in the development and implementation of Analog and Digital Modulation technologies to ensure accuracy; reliability, and transparency.	Prioritizing safety in mobile telephone.systems to protect users from potential harm, such as radiation exposure and other health risks, aligning with core human values of well-being and safety.
				Digital Pulse Modulation	Encouraging equal opportunities for all genders in research and development related to digital modulation technologies.	Designing energy-efficient digital modulation systems to reduce electronic waste and environmental impact.	Ensuring the integrity and accuracy of data transmission in digital pulse modulation to maintain trust in communication systems.	Developing accessible digital communication technologies that serve diverse populations, promoting digital inclusion.
					Promoting gender diversity in the development and study of digital modulation technologies.	Reducing the carbon footprint of digital pulse modulation systems through sustainable design and manufacturing.	Ensuring the ethical use of digital modulation systems, particularly in maintaining data integrity and confidentiality.	Designing digital modulation systems that are accessible and beneficial to all members of society, including marginalized groups.
				Mobile Telephony System	Encouraging the creation of mobile technologies that are inclusive and address the needs of all genders.	Reducing the environmental impact of mobile telephony systems by promoting the use of eco-friendly materials and energy-efficient technologies.	Upholding ethical standards in mobile communication by ensuring user privacy, data security, and responsible use of technology.	Promoting equitable access to mobile telephony systems, ensuring that all communities, including those in remote or underserved areas, benefit from communication technologies.
					Ensuring mobile telephony systems are designed to be accessible and useful for all genders, addressing specific communication needs and challenges faced by different groups.	Implementing strategies to minimize electronic waste and energy consumption in mobile telephony, such as promoting recycling and developing energy-efficient devices.	Maintaining user privacy and data security in mobile networks, ensuring ethical handling of personal information.	Promoting inclusivity by designing mobile systems that are affordable and accessible to all, particularly marginalized and underserved communities.
				Multiple Access Techniques & Wireless Communication	Developing wireless communication systems that cater to the needs of all genders, ensuring equal access and opportunities in communication technologies.	Reducing the environmental impact of multiple access techniques by optimizing spectrum efficiency and minimizing energy consumption.	Ensuring fairness and transparency in the allocation of communication resources, avoiding biases in multiple access techniques.	Promoting inclusivity in wireless communication by ensuring that these technologies are accessible and affordable for all, including those in remote or economically disadvantaged areas.
					Designing inclusive communication systems that address the diverse needs of all genders, promoting equal access to mobile networks.	Developing energy-efficient multiple access techniques to reduce the environmental footprint of wireless communication systems.	Ensuring ethical management of network resources, prioritizing fairness and preventing misuse or discrimination in access.	Enhancing connectivity for all by making wireless communication technologies accessible to underserved and marginalized communities.

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8	B.Sc.II	8051 Microcontroller and Embedded System	II	Introduction to 8051 Microcontroller	Encouraging gender diversity in the study and development of microcontroller-based systems, ensuring equal participation and opportunities for all.	Designing energy-efficient 8051 microcontroller systems to reduce power consumption and minimize environmental impact.	Upholding ethical standards in the development and application of microcontroller systems, ensuring the integrity and security of embedded systems.	Promoting the use of 8051 microcontrollers in developing accessible and affordable technology solutions that benefit society, particularly underserved populations.
					Promoting inclusive education and career opportunities in microcontroller and embedded system design, ensuring that all genders have equal access and representation.	Developing eco-friendly embedded systems using the 8051 microcontroller that prioritize low energy consumption and sustainable materials.	Ensuring ethical practices in the deployment of microcontroller-based systems, such as secure coding and responsible use of technology.	Creating embedded systems with the 8051 microcontroller that address societal needs, such as healthcare or education, benefiting diverse and underserved communities.
				Instruction Set of 8051 Microcontroller	Ensuring educational materials and training on the 8051 instruction set are inclusive, encouraging participation from all genders in learning and applying microcontroller programming.	Optimizing the 8051 instruction set for efficient code, leading to reduced energy consumption and resource use in embedded systems.	Promoting ethical programming practices, such as writing secure and reliable code when using the 8051 instruction set, to prevent vulnerabilities in embedded systems.	Designing applications using the 8051 instruction set that address societal challenges, ensuring that the technology serves the broader good and benefits all members of society.
					Encouraging diverse participation in microcontroller programming education, ensuring equal access to learning resources and opportunities for all genders.	Designing energy-efficient software for the 8051 microcontroller to reduce the environmental impact of embedded systems.	Adhering to ethical standards in programming with the 8051 instruction set, such as ensuring code security and avoiding malicious applications.	Developing embedded systems with the 8051 microcontroller that address and improve quality of life issues, benefiting all segments of society.
				Facilities in 8051	Ensuring equal opportunities and representation in learning and applying the 8051 microcontroller, encouraging diverse participation in embedded systems development.	Utilizing the 8051 microcontroller's facilities to design energy-efficient systems, reducing environmental impact and promoting sustainability.	Implementing ethical practices in the use of 8051 microcontroller facilities, such as securing data and ensuring responsible use of technology.	Leveraging the 8051 microcontroller's features to create applications that address societal needs, improve quality of life, and benefit underserved communities.
					Promoting inclusive education and career opportunities in microcontroller technology to ensure all genders are represented in the field.	Designing energy-efficient applications using the 8051's facilities to reduce power consumption and minimize environmental impact.	Ensuring ethical use of the 8051 microcontroller's facilities, including maintaining software security and protecting user data.	Utilizing the 8051 microcontroller to develop systems that address societal needs and improve accessibility for diverse populations.
				8051 Programming	Encouraging equal participation and representation in learning and applying 8051 programming, supporting diverse groups in developing their skills.	Writing efficient code for the 8051 microcontroller to reduce energy consumption and extend the lifespan of embedded systems.	Adhering to ethical programming practices, such as ensuring code security and avoiding harmful software development.	Developing applications with the 8051 microcontroller that address societal needs and enhance the quality of life for various communities.
					Promoting equal access to programming education and resources for all genders to encourage diverse participation in embedded systems development.	Writing optimized and efficient code to minimize power consumption and reduce the environmental footprint of embedded systems.	Ensuring the ethical use of programming skills, including protecting data integrity and avoiding malicious or harmful software practices.	Creating applications that leverage the 8051 microcontroller to solve real-world problems and improve the quality of life for various communities.

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9	B.Sc.III	Electronics Instrumentation-I and Mechatronics	I	Introduction to Mechatronics	Ensuring equal opportunities for all genders in mechatronics education and career paths to foster diversity in the field.	Designing mechatronic systems with energy efficiency in mind to reduce their environmental impact.	Adhering to ethical standards in the development and deployment of mechatronic systems, including transparency and reliability.	Creating mechatronic systems that improve quality of life, enhance accessibility, and benefit diverse communities.
					Promoting inclusive education and career opportunities in mechatronics to ensure diverse representation and participation in the field.	Designing mechatronic systems with a focus on reducing energy consumption and minimizing waste to support environmental sustainability	Ensuring ethical practices in mechatronics system design and implementation, such as maintaining safety standards and respecting intellectual property.	Developing mechatronic systems that address societal needs, improve quality of life, and enhance accessibility for underserved communities.
				Sensors and Transducers	Encouraging diverse participation in the study and development of sensors and transducers, ensuring equal opportunities for all genders in the field.	Designing sensors and transducers with minimal environmental impact, focusing on energy efficiency and sustainable materials.	Ensuring the ethical use of sensors and transducers, including accurate data reporting and safeguarding against misuse.	Developing sensors and transducers that enhance accessibility and improve quality of life for various communities, including those with specific needs or challenges.
					Promoting equal opportunities for all genders in the design and application of sensors and transducers to encourage diverse contributions.	Developing sensors and transducers with a focus on reducing environmental impact through energy efficiency and recyclable materials.	Maintaining high ethical standards in the calibration and data accuracy of sensors and transducers, ensuring reliable and honest reporting.	Designing sensors and transducers that improve accessibility and benefit various communities, particularly those with specific needs or in underserved areas.
				Signal Conditioning -I	Ensuring inclusive access to educational resources and career opportunities in signal conditioning to support diverse participation.	Designing signal conditioning circuits with energy efficiency in mind to minimize power consumption and reduce environmental impact.	Adhering to ethical standards in the accuracy and reliability of signal conditioning processes, ensuring honest and precise data handling.	Developing signal conditioning systems that enhance the accessibility and effectiveness of electronic instrumentation for a broad range of users and applications.
					Promoting equal access to learning and career opportunities in signal conditioning for all genders, ensuring diverse representation in the field.	Designing signal conditioning systems that are energy-efficient and use environmentally friendly materials to reduce their ecological footprint.	Maintaining integrity and accuracy in signal conditioning processes to ensure reliable data and prevent fraudulent practices.	Creating signal conditioning solutions that improve accessibility and functionality for diverse applications, benefiting a wide range of users.
				Signal Conditioning -II	Encouraging equal participation and career development opportunities in signal conditioning for all genders, fostering a diverse workforce.	Designing signal conditioning circuits with a focus on energy efficiency and minimizing electronic waste to support environmental sustainability.	Ensuring the accuracy and transparency of signal conditioning processes, adhering to ethical standards in data handling and system calibration.	Developing signal conditioning technologies that enhance usability and accessibility, improving quality of life and addressing the needs of various user groups.
					Ensuring equal access to educational resources and professional opportunities in signal conditioning for all genders to foster diversity in the field.	Implementing signal conditioning designs that prioritize energy efficiency and reduce electronic waste to minimize environmental impact.	Adhering to ethical standards in signal conditioning by ensuring accuracy and reliability in data processing and system performance.	Designing signal conditioning systems that enhance accessibility and functionality, improving the quality of life for diverse user groups.

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Sr. No.	Name of the Course	Title of Paper	Sem	Name of the Unit	Details of Cross Cutting Issues relevant with			
					Gender Awareness	Environmental Awareness	Professional Ethics	Human Values
10	B.Sc.III	Antenna and Wave Propagation	I	Antenna Basics	Promoting inclusive education and career opportunities in antenna design and wave propagation, ensuring diverse participation and representation in the field.	Designing antennas with energy efficiency and minimal electromagnetic interference to reduce environmental impact.	Ensuring accurate and honest reporting of antenna performance and characteristics, adhering to ethical standards in research and development.	Developing antenna systems that enhance connectivity and accessibility, benefiting underserved and remote communities.
					Ensuring equal access to education and career opportunities in antenna design and wave propagation for all genders, promoting diversity in the field.	Designing antennas that are energy-efficient and minimize electromagnetic pollution to support environmental sustainability.	Adhering to ethical practices in reporting and testing antenna performance, ensuring integrity and transparency in research and applications.	Creating antenna systems that improve communication accessibility and coverage, particularly in underserved or remote areas, enhancing overall quality of life.
				Antenna Types	Promoting diverse participation in the study and development of different antenna types, ensuring equal opportunities for all genders in the field.	Developing antenna designs that are energy-efficient and reduce environmental impact, including minimizing electronic waste.	Ensuring accurate and honest representation of antenna types and their performance characteristics, adhering to ethical standards in research and application.	Designing antenna systems that improve accessibility and connectivity, benefiting underserved or remote communities and enhancing societal welfare.
					Encouraging inclusive education and career development in antenna technology for all genders, promoting diverse involvement in the field.	Designing antenna types that minimize energy consumption and reduce electronic waste to lessen environmental impact.	Ensuring transparency and accuracy in the characterization and reporting of different antenna types, maintaining high ethical standards in research and application.	Developing antenna systems that enhance communication and connectivity for underserved and remote communities, improving overall quality of life.
				Radiating wire Structures	Promoting equal opportunities for all genders in the study and development of radiating wire structures, encouraging diverse participation in antenna technology.	Designing radiating wire structures with considerations for reducing energy consumption and minimizing environmental impact.	Ensuring accurate and honest reporting of the performance and characteristics of radiating wire structures, upholding ethical standards in research and development.	Creating radiating wire structures that enhance connectivity and communication in underserved or remote areas, contributing to improved societal welfare.
					Ensuring inclusive educational and career opportunities in the field of radiating wire structures, promoting gender diversity in antenna and wave propagation studies.	Designing radiating wire structures that are energy efficient and utilize sustainable materials to minimize environmental impact.	Maintaining integrity and transparency in the design, testing, and reporting of radiating wire structures, adhering to ethical standards in engineering practices.	Developing radiating wire structures that improve communication accessibility and quality for diverse communities, including those in remote or underserved areas.
				Wave Propagation	Promoting equal opportunities for all genders in the study and research of wave propagation, encouraging diverse participation and contributions.	Designing wave propagation technologies that are energy-efficient and reduce environmental impact, such as minimizing signal interference and energy	Ensuring the accuracy and honesty of wave propagation research and data, upholding ethical standards in reporting and application.	Developing wave propagation solutions that improve connectivity and communication for underserved or remote communities, enhancing overall societal welfare.
					Encouraging equal participation and representation of all genders in the study and research of wave propagation to foster a diverse academic and professional community.	Developing wave propagation models and technologies that are energy-efficient and reduce environmental impact, including minimizing electromagnetic interference.	Ensuring accurate and ethical reporting of wave propagation data, maintaining integrity in research and application of results.	Enhancing wave propagation technologies to improve communication access and connectivity, benefiting underserved and remote communities.

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					Gender Awareness	Environmental Awareness	Professional Ethics	Human Values
11	B.Sc.III	8051 Microcontroller Interfacing and Applications	I	8051 Programming in C	Encouraging equal access to learning and career opportunities in 8051 programming for all genders, fostering diversity in the field of microcontroller applications.	Writing efficient C code for the 8051 microcontroller to optimize power consumption and reduce the environmental impact of embedded systems.	Adhering to ethical standards in coding practices, ensuring security, reliability, and integrity in 8051 programming applications.	Developing 8051 microcontroller applications that address societal needs and enhance accessibility, benefiting various user groups and improving quality of life.
					Ensuring inclusive educational resources and career opportunities in 8051 programming for all genders, promoting diverse participation in embedded systems.	Developing energy-efficient C code for 8051 microcontrollers to minimize power consumption and reduce the ecological footprint.	Maintaining high standards of ethical coding practices, such as ensuring code security and accuracy in 8051 microcontroller applications.	Creating 8051 microcontroller applications that improve accessibility and address societal needs, enhancing quality of life for various communities.
				Serial communication in 8051	Encouraging equal access to learning and career opportunities in 8051 programming for all genders, fostering diversity in the field of microcontroller applications.	Writing efficient C code for the 8051 microcontroller to optimize power consumption and reduce the environmental impact of embedded systems.	Adhering to ethical standards in coding practices, ensuring security, reliability, and integrity in 8051 programming applications.	Developing 8051 microcontroller applications that address societal needs and enhance accessibility, benefiting various user groups and improving quality of life.
					Ensuring inclusive educational resources and career opportunities in 8051 programming for all genders, promoting diverse participation in embedded systems.	Developing energy-efficient C code for 8051 microcontrollers to minimize power consumption and reduce the ecological footprint.	Maintaining high standards of ethical coding practices, such as ensuring code security and accuracy in 8051 microcontroller applications.	Creating 8051 microcontroller applications that improve accessibility and address societal needs, enhancing quality of life for various communities.
				Real World interfacing of 8051	Promoting equal opportunities in learning and applying real-world interfacing techniques for all genders, encouraging diverse contributions to microcontroller applications.	Designing real-world interfacing solutions with energy efficiency in mind to reduce power consumption and environmental impact.	Ensuring the ethical implementation of interfacing techniques by maintaining data integrity, security, and transparency in microcontroller applications.	Developing interfacing solutions that improve accessibility and functionality for various user groups, particularly in underserved or remote areas, enhancing overall quality of life.
					Ensuring equal access to education and career opportunities in real-world interfacing applications for all genders, promoting diverse involvement in microcontroller projects.	Designing real-world interfacing systems with a focus on minimizing energy consumption and using sustainable materials to reduce environmental impact.	Adhering to ethical standards in implementing real-world interfacing solutions, including maintaining accuracy and security in system design and data handling.	Creating real-world interfacing applications that enhance accessibility and improve quality of life for various communities, including those in remote or underserved areas.
				Applications of 8051	Ensuring equal opportunities and representation in the development and application of 8051 microcontroller projects for all genders, fostering diversity in technology.	Designing 8051 applications with energy efficiency and sustainability in mind, minimizing power consumption and environmental impact.	Adhering to ethical standards in the development of 8051 applications, including transparent reporting, secure coding practices, and responsible use of technology.	Developing 8051 applications that address societal needs and enhance quality of life, focusing on accessibility and improving services for diverse communities.
					Promoting inclusive access to learning and career opportunities in the development of 8051 applications for all genders, encouraging diverse contributions.	Designing 8051 applications with a focus on energy efficiency and minimal environmental impact, such as reducing power consumption and utilizing sustainable materials.	Ensuring ethical practices in the development and implementation of 8051 applications, including secure coding, accurate reporting, and adherence to industry standards.	Creating 8051 applications that enhance accessibility and address societal needs, improving quality of life for various communities and underserved areas.

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					Gender Awareness	Environmental Awareness	Professional Ethics	Human Values
12	B.Sc.III	Industrial Electronics	I	Power Devices	Ensuring equal educational and career opportunities in the field of power devices for all genders, fostering a diverse and inclusive environment in industrial electronics.	Designing power devices with energy efficiency and reduced environmental impact in mind, such as minimizing power losses and using eco-friendly	Adhering to ethical standards in the design and application of power devices, ensuring accuracy, safety, and transparency in performance and reporting.	Developing power devices that enhance industrial efficiency while also considering their impact on communities, including improving safety and reducing environmental harm.
					Promoting equal opportunities and representation in the study and development of power devices, ensuring diverse participation in the field of industrial electronics.	Designing power devices with a focus on improving energy efficiency and reducing environmental impact, such as minimizing waste and using sustainable materials.	Maintaining high ethical standards in the development and deployment of power devices, ensuring accuracy, reliability, and transparency in their performance and usage.	Creating power devices that contribute to societal well-being by enhancing industrial efficiency while also considering the impact on communities and the environment.
				Power Circuits	Ensuring equal access to educational resources and career opportunities in power circuits, encouraging diverse participation in the field of industrial electronics.	Designing power circuits with energy efficiency in mind, focusing on reducing power losses and utilizing environmentally friendly materials.	Adhering to ethical practices in the design and implementation of power circuits, including accurate reporting, safety standards, and integrity in performance.	Developing power circuits that improve industrial processes while considering their impact on communities, such as enhancing safety and reducing environmental harm.
					Promoting inclusive participation and career development in the field of power circuits, ensuring equal opportunities for all genders in industrial electronics.	Designing power circuits with a focus on energy efficiency and minimizing environmental impact, such as reducing waste and using sustainable materials.	Upholding ethical standards in the design and implementation of power circuits, ensuring accuracy, reliability, and safety in their performance.	Creating power circuits that enhance industrial efficiency while considering their impact on community safety and environmental sustainability.
				Applications of Power Devices	Ensuring equal opportunities and support for all genders in the study and application of power devices, fostering diverse involvement in industrial electronics.	Developing power device applications that focus on energy efficiency and reducing environmental impact, such as minimizing power consumption and using eco-friendly materials.	Adhering to ethical practices in the development and use of power devices, ensuring accurate performance reporting, safety, and transparency.	Designing power device applications that enhance industrial efficiency while addressing societal needs, such as improving safety and reducing environmental harm.
					Promoting equal opportunities for all genders in the field of power devices, encouraging diverse participation and representation in industrial electronics applications.	Designing power device applications with a focus on reducing energy consumption and environmental impact, such as improving efficiency and using sustainable materials.	Ensuring ethical standards in the application of power devices, including accurate reporting, reliability, and transparency in performance and safety.	Developing power device applications that enhance quality of life by improving industrial processes and considering the well-being of communities and environmental sustainability.
				Electric Vehicle (EV) Systems	Promoting inclusive opportunities and participation for all genders in the development and application of EV systems, encouraging diverse involvement in the industry.	Designing EV systems with a focus on reducing carbon emissions and using sustainable materials to minimize environmental impact.	Adhering to ethical standards in the development and deployment of EV systems, ensuring transparency, safety, and accuracy in performance and reporting.	Creating EV systems that enhance transportation accessibility and safety while addressing societal needs and improving quality of life.
					Ensuring equal opportunities for all genders in EV system development and related fields, promoting diversity in the workforce and decision-making roles.	Designing EV systems to optimize energy efficiency and reduce environmental impact, focusing on sustainable materials and lower emissions.	Upholding high ethical standards in EV system development, including transparent reporting, safety, and responsible marketing practices.	Developing EV systems that improve transportation accessibility and safety, particularly for underserved communities, enhancing overall quality of life.

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					Gender Awareness	Environmental Awareness	Professional Ethics	Human Values
13	B.Sc.III	Electronics Instrumentation-II and Robotics	II	Data Presentation Elements	Ensuring inclusive access to learning resources and career opportunities in data presentation for all genders, promoting diverse participation in electronics instrumentation and robotics.	Designing data presentation elements with energy efficiency in mind, reducing the environmental impact of electronic displays and components.	Maintaining integrity and accuracy in the presentation of data, ensuring that information is presented transparently and without misrepresentation.	Creating data presentation elements that improve accessibility and usability for all users, enhancing the effectiveness of instrumentation and robotic systems in real-world applications.
					Promoting equal access and representation for all genders in the field of data presentation, ensuring diverse perspectives in the design and application of data visualization tools.	Designing data presentation elements to be energy-efficient and use sustainable materials, reducing the environmental impact of electronic displays and interfaces.	Ensuring accurate and transparent presentation of data, upholding ethical standards to avoid misleading or incorrect information in instrumentation and robotics.	Developing data presentation tools that are user-friendly and accessible, enhancing usability and effectiveness for diverse user groups, including those with disabilities.
				Actuation Systems	Promoting equal opportunities for all genders in the study and development of actuation systems, ensuring diverse representation in robotics and instrumentation fields.	Designing actuation systems to be energy-efficient and to minimize environmental impact, focusing on sustainable materials and reducing waste.	Ensuring ethical practices in the development of actuation systems, including maintaining safety, accuracy, and transparency in performance and reporting.	Developing actuation systems that enhance user accessibility and safety, addressing the needs of diverse user groups and improving overall quality of life.
					Encouraging diverse participation and representation in the field of actuation systems, ensuring equal opportunities for all genders in robotics and instrumentation.	Designing actuation systems to be energy-efficient and eco-friendly, focusing on minimizing environmental impact and using sustainable materials.	Upholding ethical standards in the development and deployment of actuation systems, ensuring safety, accuracy, and transparency in all processes.	Creating actuation systems that improve accessibility and safety, addressing the needs of various user groups and contributing to a higher quality of life.
				Robotics - I	Ensuring equal access and opportunities for all genders in the field of robotics, fostering a diverse and inclusive environment in the study and application of robotics technology.	Designing robotic systems to be energy-efficient and environmentally friendly, focusing on reducing waste and resource consumption.	Adhering to ethical practices in robotics development, including maintaining transparency, ensuring safety, and upholding standards of reliability and accuracy.	Developing robotics systems that improve human quality of life, focusing on enhancing accessibility, safety, and overall societal benefit.
					Promoting equal participation in robotics by encouraging diverse gender representation in both academic and professional settings within the field.	Designing robots with a focus on reducing energy consumption and using sustainable materials to minimize environmental impact.	Ensuring ethical development and deployment of robotics, including transparency in capabilities and safety measures, as well as responsible use of technology.	Creating robotic systems that enhance quality of life by improving accessibility, safety, and efficiency in various applications, addressing diverse needs in society.
				Robotics - II	Analyzing case studies to highlight and promote gender diversity in robotics teams and projects, ensuring inclusive participation and representation.	Evaluating case studies for best practices in designing eco-friendly robots and minimizing the environmental impact of robotics systems.	Assessing case studies to ensure ethical considerations in robotics, such as adherence to safety standards, transparency, and responsible deployment.	Using case studies to demonstrate how robotics projects can address human needs and improve quality of life, ensuring that technology benefits all segments of society.
					Highlighting case studies that show the impact of diverse gender teams in robotics projects, promoting gender equity in technology development.	Reviewing case studies for innovative approaches to reducing the environmental footprint of robotics, such as energy-efficient designs and sustainable materials.	Examining case studies to ensure ethical practices in robotics, including fairness, transparency, and adherence to safety and quality standards.	Analyzing case studies to demonstrate how robotics can enhance human well-being and address societal needs, ensuring that technological advancements benefit diverse communities.

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					Gender Awareness	Environmental Awareness	Professional Ethics	Human Values
14	B.Sc.III	Optoelectronics and IoT	II	Photonic Devices	Promoting equal opportunities and representation for all genders in the field of photonics, encouraging diverse participation in research and development.	Designing photonic devices with energy efficiency and minimal environmental impact, such as using sustainable materials and reducing electronic waste.	Ensuring ethical practices in the development and application of photonic devices, including accuracy, safety, and transparency in performance and reporting.	Developing photonic devices that enhance quality of life by improving communication, healthcare, and other technologies, considering their impact on various user groups.
					Ensuring equal access to education and career opportunities in the field of photonic devices, promoting diverse participation in optoelectronics and IoT sectors.	Designing photonic devices to be energy-efficient and environmentally friendly, focusing on sustainable production practices and reducing waste.	Adhering to ethical standards in the development of photonic devices, including transparency in research, safety in design, and honesty in reporting results.	Creating photonic devices that improve quality of life and address societal needs, such as enhancing communication technologies and healthcare applica
				Optical Communication	Promoting gender diversity in the field of optical communication, ensuring that all genders have equal opportunities to contribute to and benefit from advancements in this technology.	Designing optical communication systems to be energy-efficient and to minimize environmental impact, such as reducing the use of harmful materials and promoting sustainable practices.	Upholding high ethical standards in the development and deployment of optical communication technologies, ensuring accuracy, safety, and transparency in operations and reporting.	Developing optical communication systems that enhance accessibility and connectivity, improving overall quality of life and addressing the needs of various communities.
					Encouraging diverse participation in optical communication fields by promoting equal opportunities and representation for all genders in research and development roles.	Designing optical communication systems with a focus on reducing energy consumption and minimizing environmental impact through sustainable materials and practices.	Ensuring ethical practices in optical communication technology development, including accurate reporting, transparency, and adherence to safety standards.	Creating optical communication solutions that enhance global connectivity and accessibility, improving communication and information access for underserved and diverse communities.
				Characters of Optical Fibers	Promoting equal opportunities for all genders in the study and development of optical fiber technologies, encouraging diverse participation in research and innovation.	Designing optical fibers with a focus on sustainability, including the use of eco-friendly materials and minimizing waste in production and disposal.	Adhering to ethical standards in the development and application of optical fibers, ensuring accurate representation of their capabilities and compliance with safety regulations.	Developing optical fiber technologies that enhance communication and connectivity, improving access to information and services for diverse and underserved communities.
					Promoting inclusivity and equal representation in the field of optical fiber technology, encouraging diverse participation in research and development roles.	Designing and manufacturing optical fibers with sustainable practices, focusing on reducing environmental impact through recyclable materials and efficient production methods.	Ensuring transparency and accuracy in the reporting of optical fiber characteristics, maintaining integrity in research and application, and adhering to safety standards.	Developing optical fibers that enhance communication infrastructure, improving accessibility and connectivity for all individuals, including those in underserved areas.
				Introduction to IoT	Ensuring equal access to IoT tools and resources for all genders.	Addressing the environmental impact of energy usage in IoT devices.	Upholding ethical standards in managing data collected through IoT devices.	Creating IoT systems that are accessible and beneficial to all sections of society.
					Encouraging the participation of women in the design and development of IoT systems.	Implementing sustainable practices for disposing of IoT devices.	Ensuring that IoT systems are designed with accountability for their impact on society.	Prioritizing the safety and security of users in IoT applications.

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Sr. No.	Name of the Course	Title of Paper	Sem	Name of the Unit	Details of Cross Cutting Issues relevant with			
					Gender Awareness	Environmental Awareness	Professional Ethics	Human Values
15	B.Sc.III	Advanced Microcontroller: PIC	II	Introduction	Promoting equal opportunities for all genders in learning and working with PIC microcontrollers.	Implementing energy-efficient features in PIC microcontrollers to reduce environmental impact.	Respecting intellectual property rights in the development.and use of PIC microcontroller software and hardware.	Designing microcontroller systems that consider the well-being and needs of all users.
					Encouraging gender diversity in the design and application of microcontroller-based projects.	Advocating for the use of environmentally friendly materials in the production of microcontrollers.	Ensuring that PIC microcontroller applications are developed with ethical considerations, avoiding misuse or harm.	Developing microcontroller applications that positively impact society and enhance human values.
				Instruction set and programming of PIC18	Ensuring that instruction set and programming materials for PIC18 are gender-neutral and accessible to all.	Promoting programming practices that optimize energy usage in PIC18 microcontroller applications.	Writing clear and transparent code for PIC18 to ensure ethical use and easy understanding by others.	Designing PIC18 programs that prioritize user needs and enhance human well-being.
					Encouraging equal participation of all genders in programming exercises and projects involving PIC18.	Encouraging the use of minimal resources in code development to reduce environmental impact.	Developing secure programming practices to prevent misuse or unauthorized access to PIC18 systems.	Using the PIC18 instruction set to solve problems that benefit society while upholding ethical standards.
				Facilities in PIC18 Part-I	Ensuring all genders have equal access to learning and utilizing the facilities available in PIC18.	Promoting the use of energy-efficient features in PIC18 facilities to reduce environmental impact.	Ensuring ethical use of PIC18 facilities, avoiding misuse or exploitation.	Designing and using PIC18 facilities in ways that consider the needs and values of all users.
					Encouraging contributions from diverse genders in developing and utilizing PIC18 facilities.	Encouraging responsible and sustainable use of PIC18 facilities to minimize waste.	Upholding integrity when developing applications using PIC18 facilities.	Leveraging PIC18 facilities to create applications that positively impact society and uphold human values.
				Facilities in PIC18 Part-II	Ensuring that both men and women are equally represented in projects and discussions involving advanced PIC18 facilities.	Encouraging the use of programming techniques in PIC18 that minimize energy consumption and environmental impact.	Ensuring that the use of advanced PIC18 facilities upholds high standards of data security and privacy.	Prioritizing the development of PIC18 facilities that meet the diverse needs of users, reflecting human-centered values.
					Developing and promoting PIC18 tools and resources that are accessible and welcoming to all genders.	Advocating for the design of PIC18-based systems that incorporate environmentally friendly practices.	Promoting ethical considerations in the development and deployment of applications using PIC18 facilities.	Using advanced PIC18 facilities to create applications that contribute positively to society and uphold ethical standards.

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					Gender Awareness	Environmental Awareness	Professional Ethics	Human Values
16	B.Sc.III	Industrial Automation and PLC Programming	II	Introduction to Control System	Ensuring equal opportunities for all genders in learning and applying control systems and PLC programming.	Designing control systems that optimize energy use in industrial automation to reduce environmental impact.	Ensuring that control systems are designed with ethical considerations, such as safety and fairness.	Prioritizing human safety and well-being in the design and operation of automated control systems.
					Promoting gender diversity in teams working on industrial automation and control systems.	Implementing automation practices that minimize waste and promote sustainability in industrial processes.	Adhering to industry standards and regulations in the development and programming of control systems.	Developing control systems that contribute positively to society and respect human values in industrial settings.
				Components of Control System	Ensuring control system components are designed with considerations for the needs and contributions of all genders.	Selecting and using control system components that are energy-efficient to reduce environmental impact.	Ensuring the use of reliable and ethically sourced components in control systems to maintain system integrity and safety.	Prioritizing human safety in the selection and implementation of control system components.
					Promoting equal access to control system components and programming tools for all genders.	Choosing components that are sourced and manufactured with environmentally sustainable practices.	Being transparent in the selection and use of control system components, adhering to ethical standards.	Designing components that enhance user experience and uphold human values in industrial automation.
				Introduction to PLC	Ensuring that both men and women have equal opportunities to learn and work with PLC systems.	Promoting the development of PLC programs that optimize energy usage in industrial processes.	Ensuring that PLC programming adheres to ethical standards, including safety and data integrity.	Prioritizing the safety and well-being of workers in the design and implementation of PLC systems.
					Designing PLC training materials that are inclusive and accessible to all genders.	Encouraging the use of PLC systems in ways that support environmentally sustainable industrial practices.	Following industry regulations and standards in the implementation and programming of PLC systems.	Developing PLC interfaces and systems that are user-friendly and enhance human productivity and well-being.
				Ladder Programming	Ensuring that ladder programming education is equally accessible and supportive for all genders.	Promoting ladder programming practices that optimize resource usage and minimize environmental impact.	Ensuring ladder programs are designed to meet ethical standards for safety in industrial automation.	Creating ladder programs that are easy to understand and operate, prioritizing user experience.
					Encouraging gender diversity in teams working on ladder programming projects.	Developing ladder programs that support environmentally sustainable industrial processes.	Writing clear and transparent ladder logic that upholds ethical standards in industrial processes.	Using ladder programming to solve industrial challenges in ways that respect human values and societal needs.

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