

CPD

CURRICULUM DIARY [2018-2019/ EVEN SEM]
Bio Business and Entrepreneurship 15BT61

FACULTY: ANANDAH V

Sl. No.	Syllabus	Curriculum	Deployment Strategy and Tool	Cross-cutting issues integrated	PO, PSO and CO	Attainments	Attainment Verification
1.	Bio Business and Entrepreneurship 15BT61	- Empower students business aspects in biotechnology field - Inculcate the importance of entrepreneurship opportunity in agri biotechnology - Educate students about the entrepreneurship opportunity in industrial biotechnology - Create awareness in students about IPR and Project Management - Educate the students about the ethics and safety in Biotechnology Field	- Chalk and Talk method - Case study - Discussion - PPT - Seminars	- Analysis of Business - Innovative Thinking - Plan and strategy	PO1: Apply the knowledge of science and engineering PO2: Problem Analysis PO3: Design/development of solutions PO7: Environment and sustainability PO6: Engineer and society PO8: Ethics PO11: Project Management and finance PO12: Lifelong learning PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation. PSO2: Ability of problem solving by adopting analytical, numerical and experimental skills with awareness of societal impact for Biotechnology. CO01: Identify potential entrepreneurship opportunity in biotechnology CO02: Identify potential entrepreneurship opportunity in biotechnology CO03: Identify potential entrepreneurship opportunity in biotechnology CO04: Assess the government strategies and schemes for start-ups and related to IPR CO05: Understand the concepts of bioethics, bio safety and Regulatory norms	PO01:92% PO03:96% PO02:94% PO07:91% PO06:95% PO08:90% PO11:89% PO12:90% PSO1:91% PSO2:94% CO01:96% CO02:95% CO03:93% CO04:94% CO05:96%	- Results of Formative and Summative Assessment - Assignment - Discussion of Case studies - Seminars

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2

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					PSO2: Ability of problem solving by adopting analytical, numerical and experimental skills with awareness of societal impact for Biotechnology.		CO02:95%			
					CO02: To Understand the safety and quality standards in the biotech industry					
					PO01: Apply the knowledge of science and engineering PO02: Problem Analysis PO03: Design/development of solutions PO07: Environment and sustainability PO06: Engineer and society PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation. PSO2: Ability of problem solving by adopting analytical, numerical and experimental skills with awareness of societal impact for Biotechnology.		PO01:92% PO03:96% PO02:94% PO07:91% PO06:95% PSO1:91% PSO2:94%		- Results of Formative and Summative Assessment - Assignment - Discussion of Case studies - Seminars	
					CO03: To Analyse the Quality and Quality Implementation			CO03: 93%		
					PO08: Ethics PO11: Project Management and finance PO12: Lifelong learning PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation. PSO2: Ability of problem solving by adopting analytical, numerical and experimental skills with awareness of societal impact for		PO08:90% PO11:89% PO12:90% PSO1:91% PSO2:94%		- Results of Formative and Summative Assessment - Assignment - Discussion of Case studies - Seminars	

					biotechnology.			
					CO04: To Analyse the Quality and Quality Implementation	CO04:94%		
					PO08: Ethics PO11: Project Management and finance PO12: Lifelong learning PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation. PSO2: Ability of problem solving by adopting analytical, numerical and experimental skills with awareness of societal impact for biotechnology.	PO08:90% PO11:89% PO12:90% PSO1:91% PSO2:94%	▪ Results of Formative and Summative Assessment ▪ Assignment ▪ Discussion of Case studies ▪ Seminars	
5.	03/05/2019 - 23/05/2019	Module-5 REGULATORY AFFAIRS, BIOETHICS & BIO-SAFETY:	Educate the students about the ethics and safety in Biotechnology Field	1.Chalk and Talk method 2.Case study Discussion 3.PPT 4.Seminars				
					CO05: To Understand the Quality Management System	CO05:96%		


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Department Of Civil Engineering
SAPTHAGIRI COLLEGE OF ENGINEERING
CURRICULUM PLAN FOR THE ACADEMIC YEAR: 2018-19 ODD Semester

Genomics and Proteomics

Sl. No.	Syllabus	Curriculum	Deployment Strategy and Tool	Cross-cutting issues integrated	PO, PSO and CO	Attainments	Attainment Verification
1.	Genomics and Proteomics (15BT72)	▪ Empower students through the concepts of project databases ▪ Inculcate interdisciplinary approach of learning ▪ To comprehend application of basic aspects of biotechnology ▪ To impart knowledge on application of software tools for biological studies ▪ Create awareness in students about legal issues, social and ethical issues related to genome sequencing ▪ Provide information about various tools applicable for analysis	1. Chalk and Talk 2. PPT 3. You tube video on social ,legal and ethical issues related genome analysis 4. YouTube video on successful learner	• Human Ethics • Human values • Professional ethics • Environmental sustainability	PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations. PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. PO8: Ethics: Apply ethical principles and commit to	POA1:80%	1. Results of Formative and Summative Assessment 2. Assignment 3. Demonstrating concepts Through a project

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CURRICULUM PLAN FOR THE ACADEMIC YEAR: 2018-19 ODD Semester

Genomics and Proteomics

					professional ethics and responsibilities and norms of the engineering practice. PO12:Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.		
					PSO1 : Demonstrate engineering and life science knowledge for understanding complex biotechnological processes and apply these to manage projects and multidisciplinary tasks	PSOA1:	
					CO1: Students are able to understand genome database & genome project. CO2: To gather knowledge about genomics and genome management. CO3: Able to understand structural genomics and genome analysis CO4: Able to understand proteomics and proteome analysis	PCOA1:87% PCOA2:89% PCOA3: 87% PCOA4: 86%	



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CURRICULUM PLAN FOR THE ACADEMIC YEAR: 2018-19 ODD Semester

Genomics and Proteomics

Sl. No.	Date	Topic/Chapter/Module	Curriculum	Deployment Strategy and Tool	PO, PSO and CO	Attainments	Attainment Verification
1.	30/07/19-21/08/19	Module-1 Introduction	- Empower students through the concepts of project databases - Create awareness in students about legal issues, social and ethical issues related to genome sequencing	- Chalk and Talk method - PPT - You tube video	PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. PO8 Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	POA1:80%	- Results of Formative and Summative Assessment - Assignment - Demonstrating concepts of management through a project
					PSO1:	PSOAI:	
					CO1: Students are able to understand genome database & genome project.	COAI:87%	
2.	22/08/19-16/09/19	Module-2 Genomics	Inculcate interdisciplinary approach of learning	- Chalk and Talk method - PPT	PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools		- Results of Formative and Summative Assessment - Assignment - Demonstrating concepts of management through a project

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Genomics and Proteomics

					including prediction and modelling to complex engineering activities with an understanding of the limitations. PSO1:		project
					PSO1:85%		
					CO2: To gather knowledge about genomics and genome management	COA 2:89%	
3.	18/09/19-12/10/19	Module-3 Genome management	To comprehend application of basic aspects of biotechnology	- Chalk and Talk method - PPT - You tube video on successful entrepreneurs - You tube video on social responsibilities towards society	PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. PSO1:	PSO1: COA3: 87%	- Results of Formative and Summative Assessment - Assignment - Demonstrating concepts of management through a project
4.	17/10/19-06/11/19	Module-4 Genome analysis	- To comprehend application of basic aspects of biotechnology - Provide information about various tools applicable for	- Chalk and Talk method - PPT	PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations. PSO1:	PSO1:	- Results of Formative and Summative Assessment - Assignment - Demonstrating concepts of management through a project

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Genomics and Proteomics

		analysis		CO3: Able to understand structural genomics and genome analysis	COA4: 87%	
5.	07/11/19-30/11/19	Provide information about various tools applicable for analysis	- Chalk and Talk method - PPT	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations. PSO1:		- Results of Formative and Summative Assessment - Assignment - Demonstrating concepts of management through a project
				CO4: Able to understand proteomics and proteome analysis	PSO1: COA5: 86%	


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CURRICULUM DIARY [2018-2019/ODDSEM]
Forensic Science 15BT752

FACULTY: ANANDA H V

Sl. No.	Syllabus	Curriculum	Deployment Strategy and Tool	Cross-cutting issues integrated	PO, PSO and CO	Attainments	Attainment Verification
1.	Forensic Science 15BT752	- Empower students through the basic concepts of Forensic Science - Inculcate the importance of imaging and forensic evidence analysis - Educate students about the need for forensic biology - Create awareness in students about role of forensic expert and the forensic applications in different fields - Educate the students about the professional ethics and code of conduct in professionalism	- Chalk and Talk method - PPT - Forensic museum visit - Live evidence analysis - Discussion with Experts	- Professional Ethics - Human values - Social Accountability - Creativity - Knowledge Base system	PO1: apply the knowledge of science and engineering in investigations PO2: Problem Analysis PO8: development of professional ethics PO10: Communication PO6: The engineer and the society PO4: conduct investigations of the forensic problems PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation. PSO2: Ability of problem solving by adopting analytical, numerical and experimental skills with awareness of societal impact for Biotechnology. CO01: Understand the different types of forensic branches of science and the concept about inquest. CO02: Explain the various applications of techniques and usage of technology to gain knowledge and insight that have legal implications. CO03: Comprehend about the characterization of body fluids CO04: -Analyse the application of computer and other electrical instruments CO05: -Develop ethics and the code of conduct.	PO01:92% PO02:96% PO08:94% PO10:95% PO06:90% PO04:89% PSO1:91% PSO2:94% CO01:93% CO02:92% CO03:90% CO04:94% CO05:92%	- Results of Formative and Summative Assessment - Assignment - Demonstrating concepts by visiting the Forensic Museum

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CURRICULUM DIARY [2018-2019/ODDSEM]
Forensic Science 15BT752

Sl.No	Date	Topic/Chapter/ Module	Curriculum	Deployment Strategy and Tool	PO, PSO and CO	Attainments	Attainment Verification
1.	13/08/2018 - 28/08/2018	Module-1 INTRODUCTION	Empower students through the basic concepts of Forensic Science	• Chalk and Talk method • PPT • Forensic museum visit • Live evidence analysis • Discussion with Experts	PO1: apply the knowledge of science and engineering in investigations	PO01:92%	▪ Results of Formative and Summative Assessment ▪ Assignment ▪ Demonstrating concepts by visiting the Forensic Museum
					PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation.	PSO01:91%	
					CO1: Understand the different types of forensic branches of science and the concept about inquest.	COA1:93%	
2.	29/08/2018 - 15/09/2018	Module-2 FORENSIC ANALYSIS AND IMAGING	Inculcate the importance of imaging and forensic evidence analysis	• Chalk and Talk method • PPT • Forensic museum visit • Live evidence analysis ▪ Discussion with Experts	PO2: Problem Analysis	PO02:96%	▪ Results of Formative and Summative Assessment ▪ Assignment ▪ Demonstrating concepts by visiting the Forensic Museum
					PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation.	PSO01:91%	
					CO2: Explain the various applications of techniques and usage of technology to gain knowledge and insight that have legal implications.	CO02:92%	
3.	17/09/2018 - 05/10/2018	Module-3 FORENSIC BIOLOGY	Educate students about the need for forensic biology	• Chalk and Talk method • PPT • Forensic museum visit • Live evidence analysis	PO4: conduct investigations of the forensic problems	PO04:89%	▪ Results of Formative and Summative Assessment ▪ Assignment ▪ Demonstrating concepts by visiting the Forensic Museum
					PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation.	PSO01:91%	

CURRICULUM DIARY [2018-2019/ EVEN SEM]
Regulatory Affairs in Biotechnology Industry 15BT82

FACULTY: **ANANDA H V**

Sl. No.	Syllabus	Curriculum	Deployment Strategy and Tool	Cross-cutting issues integrated	PO, PSO and CO	Attainments	Attainment Verification
1.	Regulatory Affairs in Biotechnology Industry 15BT82	- Empower students through the concepts related to regulatory affairs - Inculcate the importance of validation - Educate students about the need of standards in Biotechnology Industry - Create awareness in students about the quality and its Implementation - Educate students about the quality management	- Chalk and Talk method - Case study - Discussion - PPT	- Analysis of Problems related to quality - Innovative Thinking - Regulatory affairs - Quality Checking - Validation of product or process	PO01: Apply the knowledge of science and engineering PO02: Problem Analysis PO03: Design/development of solutions PO04: Conduct investigations of complex problems PO07: Environment and sustainability PO06: Engineer and society PO11: Project Management and finance PO12: Lifelong learning PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation. PSO2: Ability of problem solving by adopting analytical, numerical and experimental skills with awareness of societal impact for Biotechnology. CO01: To Educate the students about Regulatory Rules and Guidelines CO02: To Understand the safety and quality standards in the biotech industry CO03: To Analyse the Quality and Quality Implementation CO04: To Analyse the Quality and Quality Implementation CO05: To Understand the Quality Management System	PO01:92% PO03:96% PO02:94% PO04:91% PO06:95% PO07:90% PO11:89% PO12:90% PSO1:91% PSO2:94% CO01:93% CO02:92% CO03:90% CO04:94% CO05:92%	- Results of Formative and Summative Assessment - Assignment - Discussion of Case studies

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CURRICULUM DIARY [2018-2019/ EVEN SEM]
Regulatory Affairs in Biotechnology Industry 15BT82

Sl.No	Date	Topic/Chapter/Module	Curriculum	Deployment Strategy and Tool	PO, PSO and CO	Attainments	Attainment Verification
1.	11/02/2019 - 25/02/2019	Module-1 INTRODUCTION	Empower students through the concepts related to regulatory affairs	- Chalk and Talk - method - Case study - Discussion - PPT	PO01: Apply the knowledge of science and engineering PO02: Problem Analysis PO03: Design/development of solutions PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation. PSO2: Ability of problem solving by adopting analytical, numerical and experimental skills with awareness of societal impact for Biotechnology.	PO01:92% PO03:96% PO02:94%	- Results of Formative and Summative Assessment - Assignment - Discussion of Case studies
					CO01: To Educate the students about Regulatory Rules and Guidelines	PSO1:91% PSO2:94% CO01:93%	
2.	26/02/2019 - 25/03/2019	Module-2 VALIDATION	Inculcate the importance of validation	- Chalk and Talk - method - Case study - Discussion - PPT	PO01: Apply the knowledge of science and engineering PO02: Problem Analysis PO03: Design/development of solutions PO04: Conduct investigations of complex problems PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation. PSO2: Ability of problem solving by adopting analytical, numerical and experimental skills with awareness of societal impact for	PO01:92% PO03:96% PO02:94% PO04:91%	- Results of Formative and Summative Assessment - Assignment - Discussion of Case studies
						PSO1:91% PSO2:94%	

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						Biotechnology.			
						CO02: To Understand the safety and quality standards in the biotech industry		CO02:92%	
						PO04: Conduct investigations of complex problems PO07: Environment and sustainability PO06: Engineer and society		PO04:91% PO06:95% PO07:90%	
						PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation. PSO2: Ability of problem solving by adopting analytical, numerical and experimental skills with awareness of societal impact for Biotechnology.		PSO1:91% PSO2:94%	• Results of Formative and Summative Assessment • Assignment • Discussion of Case studies
						CO03: To Analyse the Quality and Quality Implementation		CO03: 90%	
						PO04: Conduct investigations of complex problems PO07: Environment and sustainability PO06: Engineer and society		PO04:91% PO06:95% PO07:90%	
						PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation. PSO2: Ability of problem solving by adopting analytical, numerical and experimental skills with awareness of societal impact for biotechnology..		PSO1:91% PSO2:94%	• Results of Formative and Summative Assessment • Assignment • Discussion of Case studies
3.	26/03/2019 - 10/04/2019	Module-3 STANDARDS	Educate students about the need of standards in Biotechnology Industry	• Chalk and method • Case Discussion • PPT	Talk study				
4.	22/04/2019 - 07/05/2019	Module-4 QUALITY AND IMPLEMENTATION	Create awareness in students about the quality and its Implementation	• Chalk and method • Case Discussion • PPT	Talk study				

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5.	08/05/2019 - 22/05/2019	Module-5 QUALITY MANAGEMENT	Educate the students about the quality management	• Chalk and method • Case Discussion • PPT	CO04: To Analyse the Quality and Quality Implementation PO07: Environment and sustainability PO06: Engineer and society PO11: Project Management and finance PO12: Lifelong learning PSO1: Expertise in specialized areas of Biotechnology such as application of biology in science and biological Engineering with a focus on research and innovation. PSO2: Ability of problem solving by adopting analytical, numerical and experimental skills with awareness of societal impact for biotechnology. CO05: To Understand the Quality Management System	CO04:94%	PO06:95% PO07:90% PO11:89% PO12:90% PSO1:91% PSO2:94% CO05:92%	• Results of Formative and Summative Assessment • Assignment • Discussion of Case studies
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CURRICULUM PLAN FOR THE ACADEMIC YEAR: 2016-17 Even Semesters

Sl. No.	Syllabus	Curriculum	Deployment Strategy and Tool	Cross-cutting issues integrated	PO, PSO and CO	Attainments	Attainment Verification
1.	Environmental studies	1. To identify the major challenges in environmental issues and evaluate possible solutions. 2. Develop analytical skills, critical thinking and demonstrate socio-economic skills for sustainable development. 3. To analyze an overall impact of specific issues and develop environmental management plan.	1. Chalk and Talk method	- Human values - Environmental benefits and effects	PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. PSO3: To apply the knowledge of environmental studies such as water supply engineering, sanitary and sewage engineering, industrial waste water engineering and to know the impact of environmental issues. CO1: Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale, CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment, CO3: Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues	PO6: 90% PO7: 85% PO8: 40% PO12: 90% PSO3: 90% COA1: 95% COA2: 99% COA3: 90% COA4: 85%	- Demonstrating concepts of Entrepreneurship and management through a project - objective questions solvation

Diary

Sl. No.	Date	Topic/Chapter/Module	Curriculum	Deployment Strategy and Tool	PO, PSO and CO	Attainments	Attainment Verification
1.	14/02/2017 - 28/02/2017	Module-1 Chapter-1: Introduction	1.To identify the major challenges in environmental issues and evaluate possible solutions.	Chalk and Talk method	PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice PSO3: To apply the knowledge of environmental studies such as water supply engineering, sanitary and sewage engineering, industrial waste water engineering and to know the impact of environmental issues. CO1: Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale,	POA6:85% PSOA3:70% COA1:95%	- Demonstrating concepts of Entrepreneurship and management through a project - objective questions - solvation

2.	04/03/2017 - 18/03/2017	Module-2 Chapter-1: Natural Resources, Water resources Chapter-2: Wealth Material Cycles	1.To identify the major challenges in environmental issues and evaluate possible solutions.	Chalk and Talk method	PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice PSO3: To apply the knowledge of environmental studies such as water supply engineering, sanitary and sewage engineering, industrial waste water engineering and to know the impact of environmental issues. CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment,	POA6:40% PSOA3:50% COA2:99%	- Demonstrating concepts of Entrepreneurship and management through a project - objective questions - solvation
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3.	25/03/2017 - 08/04/2017	Module-3 Chapter-1: Environmental Pollution Chapter-2: Global Environmental Issues	2.Develop analytical skills, critical thinking and demonstrate socio-economic skills for sustainable development.	Chalk and Talk method	PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. PSO3: To apply the knowledge of environmental studies such as water supply engineering, sanitary and sewage engineering, industrial waste water engineering and to know the impact of environmental issues. CO3: Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components	POA7:75% PSOA3:60% COA3: 90%	- Demonstrating concepts of Entrepreneurship and management through a project - objective questions - solvation
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4.	11/04/2017 - 22/04/2017	Module-4 Chapter-1: Air Pollution & Automobile Pollution: Chapter-2: Solid Waste Management,	2.Develop analytical skills, critical thinking and demonstrate socio-economic skills for sustainable development.	Chalk and Talk method	PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. PSO3: To apply the knowledge of environmental studies such as water supply engineering, sanitary and sewage engineering, industrial waste water engineering and to know the impact of environmental issues. CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues	POA7:75% POA12:75% PSOA3: 80% COA4: 85%	- Demonstrating concepts of Entrepreneurship and management through a project - objective questions - solvation
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5.	29/04/2017 - 13/05/2017	Module-5 Chapter-1: Introduction to	3.To analyze an overall impact of specific issues and	- Chalk and Talk method - PPT	PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice	POA8:75%	Demonstrating concepts of Entrepreneurship and management through
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		GIS & Remote sensing, Chapter-2: Environmental Acts & Regulations	develop environmental management plan.		PSO3: To apply the knowledge of environmental studies such as water supply engineering, sanitary and sewage engineering, industrial waste water engineering and to know the impact of environmental issues. CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues	PSOA3: 40%	COA4: 90%	a project ▪ objective questions ▪ solvation
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Department Of Civil Engineering
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CURRICULUM PLAN FOR THE ACADEMIC YEAR: 2018-19 ODD Semester

Sl. No.	Syllabus	Curriculum	Deployment Strategy and Tool	Cross-cutting issues integrated	PO, PSO and CO	Attainments	Attainment Verification
1.	Municipal And Industrial Waste Water Engineering	- Empower students through the concepts of design of sewerage network system and influencing parameters. - Inculcate self purification of streams depending on hydraulic and organic loading of sewage into receiving waters - Educate students about how characterize and sampling done for waste water. Apply the principles of municipal waste water treatment process - Create awareness in students about role of design unit operations involved in conventional and biological treatment process for effluent - Provide information and principles of Industrial effluent treatment process for different industrial wastes.	1. Chalk and Talk method	- Environmental concept - Human values - Social Accountability	PO7: Understand the impact of the professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of and need for sustainable development. PO8: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. PO9: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings. PO10: Communicate effectively on complex engineering activities with the Engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. PO11: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments. PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. PSO1: CO1: Students will be able to acquire capability to design of sewerage network system CO2: Students will be able to understand the self purification of streams and organic loading of sewage into receiving waters. CO3: Students will be able to identify and evaluate degree of treatment and type of treatment for disposal, reuse and recycle CO4: Students will be able to identify waste streams and design the industrial waste water treatment plant. CO5: Students will be able to manage sewage and industrial effluent issues.	POA1: 80%	1. Results of Formative and Summative Assessment 2. Assignment
						PSOA1: PCOA1: 95% PCOA2: 90% PCOA3: 90% PCOA4: 85% PCOA5: 85%	

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Sl. No.	Date	Topic/Chapter/Module	Curriculum	Deployment Strategy and Tool	PO, PSO and CO	Attainments	Attainment Verification
1.	31/07/2019 - 21/08/2019	Module-1 Chapter-1: sanitation Chapter-2: low-cost waste treatment	Empower students through the concepts of Management	Chalk and Talk method	PO10: Communicate effectively on complex engineering activities with the Engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. PSO1: CO1: Students will be able to acquire capability to design of sewerage network system	POA1:80% PSOA1: COA1:95%	- Results of Formative and Summative Assessment - Assignment - Demonstrating concepts

2.	22/08/2019 - 09/09/2019	Module-2 Chapter-1: Design of sewers using hydraulic formula	Empower students through the concepts of Management	Chalk and Talk method	PO9: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings. PO10: Communicate effectively on complex engineering activities with the Engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. PSO1: CO2: Students will be able to understand the self purification of streams and organic loading of sewage into receiving waters.	PSOA1:85% COA2:90%	- Results of Formative and Summative Assessment - Assignment - Demonstrating concepts
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3.	16/09/2019 - 10/10/2019	Module-3 Chapter-1: Waste water characteristics Chapter-2: Treatment units	- Empower students through the concepts of Entrepreneurship - Inculcate business ethics and social responsibilities towards different groups during a business - Educate students about the need for entrepreneur for the overall development of a country as well as challenges and rewards of entrepreneurship	Chalk and Talk method	PO8: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. PO9: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings. PO10: Communicate effectively on complex engineering activities with the Engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	PSO1: CO3: Students will be able to identify and evaluate degree of treatment and type of treatment for disposal, reuse and recycle PSOA1: COA3: 90%	- Results of Formative and Summative Assessment - Assignment - Demonstrating
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4.	12/10/2019 - 04/10/2019	Module-4 Methods of municipal waste water treatment	Create awareness in students about role of SSIs in the economic development of the nation and aid provided by the government for SSIs	Chalk and Talk method	PO8: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. PO9: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings. PO10: Communicate effectively on complex engineering activities with the Engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. PO11: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	- Results of Formative and Assessment - Assignment - Demonstrating concepts
					PSO1:	
					CO4: Students will be able to identify waste streams and design the industrial waste water treatment plant.	

5.	06/11/2019 - 23/11/2019	Module-5 Methods of industrial waste water, treatment methods	Provide information about project, project report, project	Chalk and Talk method	PO8: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. PO9: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings. PO10: Communicate effectively on complex	- Results of Formative and Assessment - Assignment

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