

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination – 2018-19
M.Tech - Waste Water Management, Health & Safety Engineering (CWM)
Choice Based Credit System (CBCS)

I - SEMESTER

Sl. No	Course	Course Code	Course Title	Teaching Hours /Week		Examination			Credits	
				Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks		Total Marks
1	PCC	18CWM11	Applied Mathematics	04	--	03	40	60	100	4
2	PCC	18CWM12	Advanced Water Treatment Technology	04	--	03	40	60	100	4
3	PCC	18CWM13	Advanced Waste Water Treatment Technology	04	--	03	40	60	100	4
4	PCC	18CWM14	Environmental Pollution and Control Management	04	--	03	40	60	100	4
5	PCC	18CWM15	Community Health Science and Environmental Sanitation	04	--	03	40	60	100	4
6	PCC	18CWML16	Water and Wastewater Analysis Lab - I	-	04	03	40	60	100	2
7	PCC	18CWM17	Research Methodology and IPR	02	--	03	40	60	100	2
TOTAL				22	04	21	280	420	700	24

Note: PCC: Professional Core

Internship: All the students shall have to undergo mandatory internship of 6 weeks during the vacation of I and II semesters and /or II and III semesters. A University examination will be conducted during III semester and prescribed credit shall be included in the III semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take-up/complete the internship shall be declared as failed and have to complete during subsequent University examination after satisfy the internship requirements.

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II - SEMESTER

Sl. No	Course	Course Code	Course Title	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	PCC	18CWM21	Transport Modelling of Aquatic Systems	04	--	03	40	60	100	4
2	PCC	18CWM22	Industrial Effluent Treatment Technology	04	--	03	40	60	100	4
3	PCC	18CWM23	Occupational Safety and Health Management	04	--	03	40	60	100	4
4	PEC	18CWM24X	Professional Elective 1	04	--	03	40	60	100	4
5	PEC	18CWM25X	Professional Elective 2	04	--	03	40	60	100	4
6	PCC	18CWML26	Water and Wastewater Analysis Lab - II	--	04	03	40	60	100	2
7	PCC	18CWM27	Technical Seminar	--	02	--	100	--	100	2
TOTAL				20	06	18	340	360	700	24

Note: PCC: Professional core, PEC: Professional Elective

Professional Elective 1			Professional Elective 2	
Course Code under 18CWM24X	Course Title	Course Code under 18CWM25X	Course Title	
18CWM241	Integrated Solid Waste Management	18CWM251	Environmental Impact Assessment	
18CWM242	Remote Sensing and GIS in Environmental Engineering	18CWM252	Industrial Waste Pollution and Control	
18CWM243	Aquatic Chemistry & Microbiology	18CWM253	Renewable Energy and Alternatives Fuels	

Note:

1. Technical Seminar: CIE marks shall be awarded by a committee comprising of HOD as Chairman, Guide/co-guide in any and a senior faculty of the department. Participation in seminar by all postgraduate students of the same and other semesters of the programme shall be mandatory. The CIE marks awarded for Technical Seminar, shall be based on the evaluation of Seminar Report, Presentation skill and Question and Answer session in the ratio 50:25:25.

2. Internship: All the students shall have to undergo mandatory internship of 6 weeks during the vacation of I and II semesters and /or II and III semesters. A University examination will be conducted during III semester and prescribed credit shall be included in the III semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take-up/complete the internship shall be declared as failed and have to complete during subsequent University examination after satisfy the internship requirements.

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III - SEMESTER

Sl. No	Course	Course Code	Course Title	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	PCC	18CWM31	Atmospheric Air Pollution and Control	04	--	03	40	60	100	4
2	PEC	18CWM32X	Professional Elective-3	04	--	03	40	60	100	4
3	PEC	18CWM33X	Professional Elective-4	04	--	03	40	60	100	4
4	Proj	18CWM34	Evaluation of Project phase -1	--	02	--	100	--	100	2
5	INT	18CWMI35	Internship	(Complete during the intervening vacation of I and II semesters and /or II and III semesters.)		03	40	60	100	6
TOTAL				12	02	12	260	240	500	20

Note: PCC: Professional core, PEC: Professional Elective, Proj: Project, INT: Internship

Professional Elective - 3		Professional Elective - 4	
Course Code under 18CWM32X	Course title	Course Code under 18CWM33X	Course title
18CWM321	Energy Systems and Environmental Resources	18CWM331	Hazardous Waste Management
18CWM322	Human impact on Marine and Costal Environment	18CWM332	Instrumentation Technique in Environmental Engineering
18CWM323	Hydraulics of Water and Waste Water Systems	18CWM333	Environmental Planning & Management

Note:

1. Project Phase-1: Students in consultation with the guide/co-guide if any, shall pursue literature survey and complete the preliminary requirements of selected Project work. Each student shall prepare relevant introductory project document, and present a seminar. CIE marks shall be awarded by a committee comprising of HOD as Chairman, Guide and a senior faculty of the department. The CIE marks awarded for project work phase -1, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session in the ratio 50:25:25.

SEE (University examination) shall be as per the University norms.

2. Internship: Those, who have not pursued/completed the internship shall be declared as failed and have to complete during subsequent University examinations after satisfy the internship requirements.

Internship SEE (University examination) shall be as per the University norms.

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IV SEMESTER										
Sl. No	Course	Course Code	Course Title	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks Viva voce	Total Marks	
1	Proj	18CWM41	Project work phase - 2	--	04	03	40	60	100	20
TOTAL				--	04	03	40	60	100	20
Note: Proj: Project.										
Note:										
1. Project Phase-2:										
CIE marks shall be awarded by a committee comprising of HOD as Chairman, Guide/co-guide, if any and a Senior faculty of the department. The CIE marks awarded for project work phase - 2, shall be based on the evaluation of Project Report subjected to plagiarism check, Project Presentation skill and Question and Answer session in the ratio 50:25:25.										
SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the University norms.										