

<b>RGPV (Diploma Wing ) Bhopal</b>		<b>SCHEME FOR LEARNING OUTCOME</b>			Branch Code		Course Code		CO Code	LO Code	Format No. <b>4</b>
					<b>C</b>	<b>0</b>	<b>3</b>			<b>1</b>	
<b>COURSE NAME</b>	<b>PUBLIC HEALTH ENGINEERING</b>										
<b>CO Description</b>	<b>Identify the sources ,estimate quantity and examine characteristics of water.</b>										
<b>LO Description</b>	<b>Describe various sources of water and intake structure for given source of water.</b>										
<b>SCHEME OF STUDY</b>											
<b>S. No.</b>	<b>Learning Content</b>	<b>Method of teaching</b>	<b>Description of T-L Process</b>	<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>				
1	Necessity and brief description of PHE, Sources of water: surface and subsurface sources of water,well hydraulics, power, Intake Structures: definition and types, factors governing the location of an intake structure.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	8	0	Text book, video lectures, chalk board.	NIL				
<b>SCHEME OF ASSESSMENT</b>											
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Passing Criteria</b>		<b>Resources Required</b>		<b>External / Internal</b>			
1	Theory exam	Students will be asked to identify the role of PHE engineer, give sources of water, describe well hydraulics and intakes.	10	Test Paper + Rating scale		Handouts, chalk board, PPT, text book, charts, video film.		Internal			
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>											
<b>Part of Internal Exam – Mid Semester Test-I</b>											

<b>RGPV (Diploma Wing ) Bhopal</b>		<b>SCHEME FOR LEARNING OUTCOME</b>			Branch Code		Course Code		CO Code	LO Code	Format No. <b>4</b>
					<b>C</b>	<b>0</b>	<b>3</b>			<b>1</b>	
<b>COURSE NAME</b>	<b>PUBLIC HEALTH ENGINEERING</b>										
<b>CO Description</b>	<b>Identify the sources ,estimate quantity and examine characteristics of water.</b>										
<b>LO Description</b>	<b>Explain the methods of forecasting population for estimating quantity of water supply scheme.</b>										
<b>SCHEME OF STUDY</b>											
<b>S. No.</b>	<b>Learning Content</b>	<b>Method of teaching</b>	<b>Description of T-L Process</b>	<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>				
1	Flow diagram of water supply scheme, demands of water, variations of water demands, factors affecting rate of demand, design period, forecasting of population, methods of forecasting of population, (Simple problems on forecasting of population) , estimating of quantity of water supply required for city or town.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	06	0	Text book, video lectures, chalk board.	NIL				
<b>SCHEME OF ASSESSMENT</b>											
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Passing Criteria</b>		<b>Resources Required</b>		<b>External / Internal</b>			
1	Theory exam	Student will be asked to explain various demand of water, methods of forecasting population for estimating quantity of water.	08	Test Paper + Rating scale		Handouts, chalk board, PPT, text book, charts, video film.		External			
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>											
<b>Part of end semester theory exam</b>											

<b>RGPV (Diploma Wing ) Bhopal</b>		<b>SCHEME FOR LEARNING OUTCOME</b>			Branch Code		Course Code		CO Code	LO Code	Format No. <b>4</b>
					<b>C</b>	<b>0</b>	<b>3</b>			<b>1</b>	
<b>COURSE NAME</b>	<b>PUBLIC HEALTH ENGINEERING</b>										
<b>CO Description</b>	<b>Identify the sources ,estimate quantity and examine characteristics of water.</b>										
<b>LO Description</b>	<b>Explain physical ,chemical and biological characteristics of water.</b>										
<b>SCHEME OF STUDY</b>											
<b>S. No.</b>	<b>Learning Content</b>	<b>Method of teaching</b>	<b>Description of T-L Process</b>	<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>				
1	Need for analysis of water, Characteristics of water- Physical, Chemical and Biological, testing of water for total solids, hardness, chlorides, dissolved Oxygen, pH, fluoride, nitrogen and its compounds, total count tests, E coli, B coli index, MPN, sampling of water, water quality standards as per IS 10500 , water borne disease.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	06	00	Text book, video lectures, chalk board.	NIL				
<b>SCHEME OF ASSESSMENT</b>											
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Passing Criteria</b>		<b>Resources Required</b>		<b>External / Internal</b>			
1	Theory exam	Student will be asked to explain characteristics of water, Water quality standards as per IS 10500 and water borne diseases.	06	Test Paper + Rating scale		Handouts, chalk board, PPT, text book, charts, video film.		External			
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>											
<b>Part of end semester theory exam</b>											

<b>RGPV (Diploma Wing ) Bhopal</b>		<b>SCHEME FOR LEARNING OUTCOME</b>			Branch Code		Course Code		CO Code	LO Code	Format No. <b>4</b>
					<b>C</b>	<b>0</b>	<b>3</b>			<b>1</b>	
<b>COURSE NAME</b>	<b>PUBLIC HEALTH ENGINEERING</b>										
<b>CO Description</b>	<b>Identify the sources ,estimate quantity and examine characteristics of water.</b>										
<b>LO Description</b>	<b>Determine turbidity, pH value, TDS, DO of the given water sample.</b>										
<b>SCHEME OF STUDY</b>											
<b>S. No.</b>	<b>Learning Content</b>	<b>Method of teaching</b>	<b>Description of T-L Process</b>	<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>				
1	1.Determine the turbidity of the given sample of water. 2.Determine pH value of the given sample of water. 3.Determine suspended solid, dissolved solid and total solid of the given sample of water. 4.Determine dissolved oxygen in the given sample of water.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	00	12	Text book, video lectures, chalk board.	NIL				
<b>SCHEME OF ASSESSMENT</b>											
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Passing Criteria</b>		<b>Resources Required</b>			<b>External / Internal</b>		
1	Practical Exam	Students will be asked to perform any of the above test.		Rating scale/ Rubrics		Handouts, chalk board, PPT, text book, charts, video film.			Both		
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>											
<b>Part of Practical Exam : Internal Marks for Practical : 10Marks</b>											

RGPV (Diploma Wing ) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. <b>4</b>
					C	O	3				2	1	
<b>COURSE NAME</b>	PUBLIC HEALTH ENGINEERING												
<b>CO Description</b>	Explain different processes for treatment of water.												
<b>LO Description</b>	Describe the process of sedimentation with optimum dose of coagulant.												
SCHEME OF STUDY													
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Screening and types of screens, Aeration- objects and methods of aeration, plain sedimentation, sedimentation with coagulation, principles of coagulation, process of coagulation, types of coagulants, Jar Test, , types of sedimentation tanks, clariflocculator.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	05	0	Text book, video lectures, chalk board.	NIL						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal							
1	Theory exam	Students will be asked to describe any process of treatment of water.	06	Test Paper + Rating scale	Handouts, chalk board, PPT, text book, charts, video film.	External							
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of end semester theory exam													

RGPV (Diploma Wing ) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. <b>4</b>
					C	0	3				2	2	
<b>COURSE NAME</b>	<b>PUBLIC HEALTH ENGINEERING</b>												
<b>CO Description</b>	<b>Explain different process for treatment of water.</b>												
<b>LO Description</b>	<b>Describe the process of filtration, disinfection and miscellaneous water treatments for water sample.</b>												
SCHEME OF STUDY													
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Filtration - mechanization of filtration, classification of filters: slow sand filter, rapid sand filter, pressure filter, construction and working of slow sand filter and rapid sand filter, operational problems in filtration, Disinfection: objects, methods of disinfection, chlorination, application of chlorine, forms of chlorination, types of chlorination, practices, residual chlorine and its importance, miscellaneous water treatments: water softening, defluoridation techniques, Advanced Water Treatments: electrolysis, reverse osmosis, flow diagram of water treatment plants.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	12	0	Text book, video lectures, chalk board.	NIL						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal							
1	Theory exam	Student will be asked to explain mechanism of filtration, construction of any filter.	15	Test Paper + Rating scale	Handouts, chalk board, PPT, text book, charts, video film.	External							
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
<b>Part of end semester theory exam</b>													

<b>RGPV (Diploma Wing ) Bhopal</b>		<b>SCHEME FOR LEARNING OUTCOME</b>			Branch Code		Course Code		CO Code	LO Code	Format No. <b>4</b>
					<b>C</b>	<b>0</b>	<b>3</b>			<b>2</b>	
<b>COURSE NAME</b>	<b>PUBLIC HEALTH ENGINEERING</b>										
<b>CO Description</b>	<b>Explain different process for treatment of water.</b>										
<b>LO Description</b>	<b>Determine residual chlorine, optimum coagulant content of the given water sample.</b>										
<b>SCHEME OF STUDY</b>											
<b>S. No.</b>	<b>Learning Content</b>	<b>Method of teaching</b>	<b>Description of T-L Process</b>	<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>				
1	1. Determine residual chlorine in the given sample of water. 2. Determine the optimum dose of coagulant in a given raw water sample by jar test.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	00	06	Text book, video lectures, chalk board.	NIL				
<b>SCHEME OF ASSESSMENT</b>											
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Passing Criteria</b>		<b>Resources Required</b>		<b>External / Internal</b>			
1	Practical Exam	Students will be asked to perform any of the above test.		Rating scale/ Rubrics		Handouts, chalk board, PPT, text book, charts, video film.		Both			
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>											
<b>Part of Practical Exam : Internal Marks for Practical :05Marks</b>											

<b>RGPV (Diploma Wing ) Bhopal</b>		<b>SCHEME FOR LEARNING OUTCOME</b>			Branch Code		Course Code		CO Code	LO Code	Format No. <b>4</b>
					<i>C</i>	<i>0</i>	<i>3</i>			<b>3</b>	
<b>COURSE NAME</b>	<b>PUBLIC HEALTH ENGINEERING</b>										
<b>CO Description</b>	<b>Explain conveyance and distribution of water.</b>										
<b>LO Description</b>	<b>Describe different types of pipes and pipe fittings.</b>										
<b>SCHEME OF STUDY</b>											
<b>S. No.</b>	<b>Learning Content</b>	<b>Method of teaching</b>	<b>Description of T-L Process</b>	<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>				
1	Types of pipes used for conveyance of water, choice of pipe material, types of joints & types of valves-their use, location and function on a pipeline.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	04	0	Text book, video lectures, chalk board.	NIL				
<b>SCHEME OF ASSESSMENT</b>											
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Passing Criteria</b>		<b>Resources Required</b>		<b>External / Internal</b>			
1	Theory exam	Student will be asked to explain types of pipe material and joints.	05	Test Paper + rating scale		Handouts, chalk board, PPT, text book, charts, video film.		External			
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>											
Part of end semester theory exam											

RGPV (Diploma Wing ) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code		Course Code		CO Code	LO Code	Format No. <b>4</b>
					C	O	3			3	
<b>COURSE NAME</b>		<b>PUBLIC HEALTH ENGINEERING</b>									
<b>CO Description</b>		<b>Explain conveyance and distribution of water.</b>									
<b>LO Description</b>		<b>Explain methods and layout of distribution of water.</b>									
SCHEME OF STUDY											
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks				
1	Methods of distribution of water - gravity, pumping, and combined system service reservoirs –functions and types, layouts of distribution of water- dead end system, grid iron system, circular system, radial system; their suitability, advantages and disadvantages	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	10	00	Text book, video lectures, chalk board.	NIL				
SCHEME OF ASSESSMENT											
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria		Resources Required		External / Internal			
1	Theory Exam	Students will be asked to method of water distribution, their advantages and disadvantages.	10	Rating scale/ Rubrics		Handouts, chalk board, PPT, text book, charts, videos,		Internal			
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)											
Internal Theory Exam - Mid Semester I											
RGPV (Diploma Wing ) Bhopal		SCHEME FOR LEARNING			Branch Code		Course Code		CO Code	LO Code	Format No. <b>4</b>

**OUTCOME****C****0****3****4****1**

<b>COURSE NAME</b>	<b>PUBLIC HEALTH ENGINEERING</b>
<b>CO Description</b>	<b>Explain sanitation, sewerage system and its various accessories.</b>
<b>LO Description</b>	<b>Describe various terms related to building sanitation and draw layout plan of drainage system for the given building.</b>

**SCHEME OF STUDY**

<b>S. No.</b>	<b>Learning Content</b>	<b>Method of teaching</b>	<b>Description of T-L Process</b>	<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>
1	Importance and necessity of sanitation, necessity to treat domestic sewage, Recycling and Reuse of domestic waste, definitions of the terms related to building sanitation- water pipe, rain water pipe, soil pipe, sullage pipe, vent pipe, Building Sanitary fittings- water closet – Indian and European type, flushing cistern, wash basin, sinks, urinals, traps- types and qualities of good trap, principles of design of building drainage, systems of plumbing – one pipe, two pipe, single stack, layout plan for building sanitary fittings (drainage plan), inspection and junction chambers, their necessity, location.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	12	0	Text book, video lectures, chalk board.	NIL

**SCHEME OF ASSESSMENT**

<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Passing Criteria</b>	<b>Resources Required</b>	<b>External / Internal</b>
1	Theory exam	Student will be asked to describe sanitation, recycling of waste, various sanitary fittings.	10	Test Paper + rating scale	Handouts, chalk board, PPT, text book, charts, video film.	External

**ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)**

Part of end semester theory exam

		<b>OUTCOME</b>			<b>C</b>	<b>0</b>	<b>3</b>			<b>4</b>	<b>2</b>	
<b>COURSE NAME</b>	<b>PUBLIC HEALTH ENGINEERING</b>											
<b>CO Description</b>	<b>Explain sanitation, sewerage system and its various accessories.</b>											
<b>LO Description</b>	<b>Describe design principles for a sewerage system.</b>											
<b>SCHEME OF STUDY</b>												
<b>S. No.</b>	<b>Learning Content</b>	<b>Method of teaching</b>	<b>Description of T-L Process</b>	<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>					
1	Definitions- sewage, sullage, types of sewage, types of sewers, systems of sewerage, principles of design of sewers, self-cleansing velocity and non-scouring velocity, laying, testing and maintenance of sewers.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	05	00	Text book, video lectures, chalk board.	NIL					
<b>SCHEME OF ASSESSMENT</b>												
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Passing Criteria</b>		<b>Resources Required</b>		<b>External / Internal</b>				
1	Theory exam	Students will be asked to define sewage, sullage and systems of sewerage.	05	Rating scale/ Rubrics		Handouts, chalk board, PPT, text book, charts, video film.		External				
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>												
Part of end semester theory exam												

		<b>OUTCOME</b>			<b>C</b>	<b>0</b>	<b>3</b>			<b>4</b>	<b>3</b>	
<b>COURSE NAME</b>	<b>PUBLIC HEALTH ENGINEERING</b>											
<b>CO Description</b>	<b>Explain sanitation, sewerage system and its various accessories.</b>											
<b>LO Description</b>	<b>Explain accessories of sewerage system.</b>											
<b>SCHEME OF STUDY</b>												
<b>S. No.</b>	<b>Learning Content</b>	<b>Method of teaching</b>	<b>Description of T-L Process</b>	<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>					
1	Sewer appurtenances- manholes and drop manholes -component parts, location, spacing, sewer inlets, street inlets, maintenance and cleaning of manhole, flushing tanks – manual and automatic.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	05	00	Text book, video lectures, chalk board.	NIL					
<b>SCHEME OF ASSESSMENT</b>												
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Passing Criteria</b>		<b>Resources Required</b>		<b>External / Internal</b>				
1	Theory exam	Student will be asked to explain sewer appurtenances and necessity of manhole.	05	Rating scale/ Rubrics		Handouts, chalk board, PPT, text book, charts, video film.		Internal				
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>												
<b>Internal Theory Exam - Assignment/Quiz/Seminar/Presentation.</b>												

		<b>OUTCOME</b>			<b>C</b>	<b>0</b>	<b>3</b>			<b>5</b>	<b>1</b>	
<b>COURSE NAME</b>	<b>PUBLIC HEALTH ENGINEERING</b>											
<b>CO Description</b>	<b>Explain characteristics and treatment of sewage.</b>											
<b>LO Description</b>	<b>Describe characteristics for a given sewage sample and sewage treatment processes.</b>											
<b>SCHEME OF STUDY</b>												
<b>S. No.</b>	<b>Learning Content</b>	<b>Method of teaching</b>	<b>Description of T-L Process</b>	<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>					
1	Characteristics of sewage, B.O.D./ C.O.D. and significance, aerobic and anaerobic process, norms for the discharge of treated sewage, objects of sewage treatment, general layout and flow diagram, screening, grit removal, skimming, sedimentation of sewage, sludge digestion, trickling filters, activated sludge process, disposal of sewage, septic tank, oxidation pond, oxidation ditch, common complaints in the operation of septic tank and remedies.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	18	0	Text book, video lectures, chalk board.	NIL					
<b>SCHEME OF ASSESSMENT</b>												
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Passing Criteria</b>		<b>Resources Required</b>			<b>External / Internal</b>			
1	Theory exam	Student will be asked to describe characteristics and treatment of sewage .	15	Rating scale/ Rubrics		Handouts, chalk board, PPT, text book, charts, video film.			External			
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>												
<b>Part of end semester theory exam</b>												

<b>RGPV (Diploma Wing ) Bhopal</b>	<b>SCHEME FOR LEARNING OUTCOME</b>			<b>Branch Code</b>			<b>Course Code</b>			<b>CO Code</b>	<b>LO Code</b>	<b>Format No. 4</b>
	<b>C</b>	<b>0</b>	<b>3</b>						<b>5</b>	<b>2</b>		

<b>COURSE NAME</b>	<b>PUBLIC HEALTH ENGINEERING</b>
<b>CO Description</b>	<b>Explain characteristics and treatment of sewage.</b>
<b>LO Description</b>	<b>Explain Rural Sanitation.</b>

**SCHEME OF STUDY**

<b>S. No.</b>	<b>Learning Content</b>	<b>Method of teaching</b>	<b>Description of T-L Process</b>	<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>
1	Rural sanitation, necessity and importance, types of privies – aqua privy and bore hole latrine, construction and working, method of disposal of domestic waste.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	05	0	Text book, video lectures, chalk board.	NIL

**SCHEME OF ASSESSMENT**

<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Passing Criteria</b>	<b>Resources Required</b>	<b>External / Internal</b>
1	Theory exam	Student will be asked to submit assignments giving details regarding rural sanitation.	05	Rating scale/ Rubrics	Handouts, chalk board, PPT, text book, charts, video film.	Internal

**ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)**

**Part of Internal Exam – Assignments/Seminars/Presentations**

		OUTCOME			C	0	3			5	3	
<b>COURSE NAME</b>	<b>PUBLIC HEALTH ENGINEERING</b>											
<b>CO Description</b>	Explain characteristics and treatment of sewage.											
<b>LO Description</b>	<b>Determine D.O,B.O.D,C.O.D, of the given waste water sample and design the septic tank.</b>											
SCHEME OF STUDY												
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks					
1	1. Determine D.O., B.O.D., C.O.D.of waste water sample. 2. Design the septic tank for the public building such as hostel or hospital and draw plan and section of the same along with the drainage arrangement in soak pit.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	00	06	Text book, video lectures, chalk board.	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal						
1	Practical Exam	Students will be asked to perform any of the above test.		Rating scale/ Rubrics	Handouts, chalk board, PPT, text book, charts, video film.	Both						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
<b>Part of Practical Exam : Internal Marks for Practical : 05 Marks</b>												

**Note: 1. Internal practical marks of practical LOs are mentioned in additional instructions.**

**2. External practical exam will be of maximum 30 marks and any of the practical mentioned in LO's can be assessed.**