| RGP WIN | V (DII IG) BI | PLOM/ HOPAL | ۹ - | OBE CUR FOR THE | RICULUM COURSE | FORMAT- | 3 | Shee No. 1 | eet 1/4 | | | | | | |
|------------|------------------|----------------|---|---|--|--|-------------------------------------|-----------------------------|--|--|--|--|--|--|--|
| Branch | со | NSTRU | CTION | TECHNOLOGY & | MANAGEMENT | Semester | | 6 ^t | h | | | | | | |
| Course C | ode | со | 5 | 5 Course Name WATER SUPPLY AND WASTE WA ENGINEERING | | | | | | | | | | | |
| Course Ou | utcom | ie 1 | Recognize the Water Sources , evaluate the quantity and analyze the characteristics of water.Teach HrsMarks | | | | | | | | | | | | |
| Learning | Outco | me 1 | Describe various sources of water and intake 8 10 structure for given source of water. | | | | | | | | | | | | |
| Content | | | 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. | | | | | | | | | | | | |
| Method of | fAsses | sment | Interr | nal Theory Exam - N | /id Semester I | | | | | | | | | | |
| Learning | outco | me 2 | Realize importance of population forecasting and 6 7 estimate the quantity of water for design of effective water treatment plant. | | | | | | | | | | | | |
| Content | | | Flow water forect probl suppl | diagram of water demands, factor asting of population ems on forecasting y required for city of | supply scheme, de ors affecting rate on, methods of fore g of population), es or town. | mands of wa of demand, casting of po stimating of c | ter, va desi pulati juanti | ariat ign on, ty o | ions of period, (Simple f water | | | | | | |
| Method of | f Asses | sment | External Theory Exam - Pen Paper Test | | | | | | | | | | | | |
| Learning | outco | me 3 | Explain physical, chemical and biological 6 6 characteristics of water. | | | | | | | | | | | | |
| Content | | | 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. | | | | | | | | | | | | |
| Method of | f Asses | sment | Exter | nal Theory Exam - F | Pen Paper Test | | | | | | | | | | |
| Learning | outco | me 4 | Determine turbidity, pH value, TDS, DO of the given 10 water sample. | | | | | | | | | | | | |
| Content | | | 1. Det 2. Det 3.Det samp 4. Det | termine the turbidi termine pH value o ermine suspended le of water. termine the dissolv | ty of the given sampl f the given sample of solid, dissolved soli ed oxygen in the give | e of water. Water. Id and total s en sample of w | olid o vater. | of th | e given | | | | | | |

| Method of Assessment | Practical Exam - Both Internal and External | | |
|----------------------|---|--|-------------------------------------|
| Course outcome 2 | Explain function of various stages of treatment of influent water. | Teach Hrs | Marks |
| Learning outcome 1 | Describe the process of sedimentation with optimum dose of coagulant. | 5 | 6 |
| Content | Screening and types of screens, Aeration- objects and met plain sedimentation, sedimentation with coagulation coagulation, process of coagulation, types of coagulants, Ja sedimentation tanks, clariflocculator. | hods of a n, princi ar Test, , | eration, ples of types of |
| Method of Assessment | External Theory Exam – Pen Paper Test | | |
| Learning outcome 2 | Describe the process of filtration, disinfection and Miscellaneous water Treatments for water sample | 12 | 13 |
| Content | Filtration - mechanization of filtration, classification of filte filter, rapid sand filter, pressure filter, construction and wo sand filter and rapid sand filter, operational problems in filt Disinfection: objects, methods of disinfection, chlorination, chlorine, forms of chlorination, types of chlorination, practi chlorine and its importance, miscellaneous water treatmen softening, defluoridation techniques. Advanced water Treat :electrolysis. reverse osmosis, flow diagram of water treatmen | rs: slow s rking of s ration, applicati ices, resic ts: water ments nent plan | and low ion of dual ts. |
| Method of Assessment | External Theory Exam – Pen Paper Test | | |
| Learning outcome 3 | Determine residual chlorine, Optimum Coagulant Content of the given water sample. | 06 | |
| Content | Determine residual chlorine in the given sample of water Determine the optimum dose of coagulant in a given rates | aw water | sample |
| Method of Assessment | Practical Exam - Both Internal and External | | |
| Course outcome 3 | Build Knowledge on conveyance and distribution of water. | Teach Hrs | Marks |
| Learning outcome 1 | Describe different types of pipes and pipe fittings. | 4 | 5 |
| Content | Types of pipes used for conveyance of water, choice of pip of joints & types of valves-their use, location and function of | e materi on a pipel | al, types ine. |
| Method of Assessment | External Theory Exam – Pen Paper Test | | |
| Learning outcome 2 | Explain methods and layout of distribution of water. | 10 | 10 |
| Content | Methods of distribution of water- Gravity,pumping, and co Service reservoirs – functions and types , Layouts of distribu Dead end system, grid iron system, circular system, radial s | mbined s ution of v ystem ; t | ystem vater- heir |

| | suitability, advantages and disadvantages | | | | | | | | | | |
|----------------------|---|--|--|--|--|--|--|--|--|--|--|
| Method of Assessment | Internal Theory Exam - Mid Semester I | | | | | | | | | | |
| Course outcome 4 | Explain sanitation, sewerage system and its various accessories. | Teach Hrs | Marks | | | | | | | | |
| Learning outcome 1 | Describe various terms related to building sanitation and draw layout plan of drainage system for the given building. | 10 | 10 | | | | | | | | |
| Content | Importance and necessity of sanitation, necessity to treat Recycling and Reuse of domestic waste, definitions of the building sanitation- water pipe, rain water pipe, soil pipe, s pipe, Building Sanitary fittings- water closet –Indian and flushing cistern, wash basin, sinks, urinals, traps- types and trap, principles of design of building drainage, systems of pipe, two pipe, single stack, layout plan for building (drainage plan), inspection and junction chambers, their ne | domestic terms re sullage pi l Europea qualities f plumbir sanitary ecessity, l | sewage, lated to pe, vent an type, of good ng – one fittings ocation. | | | | | | | | |
| Method of Assessment | External Theory Exam – Pen Paper Test | | | | | | | | | | |
| Learning outcome 2 | Describe design principles for a sewerage system.55 | | | | | | | | | | |
| Content | Definitions- sewage, sullage, types of sewage, types of se sewerage, principles of design ofsewers, self-cleansing v scouring velocity, laying, testing and maintenance of sewers | wers, sys elocity a s. | stems of nd non- | | | | | | | | |
| Method of Assessment | External Theory Exam – Pen Paper Test | | | | | | | | | | |
| Learning outcome 3 | Explain accessories of sewerage system. | 5 | 5 | | | | | | | | |
| Content | Sewer appurtenances- manholes and drop manholes -c location, spacing, sewer inlets, street inlets, maintenance manhole, flushing tanks – manual and automatic. | omponer and clea | it parts, aning of | | | | | | | | |
| Method of Assessment | Internal Theory Exam - Assignment/Quiz/Seminar/Presenta | ition. | | | | | | | | | |
| Course outcome 5 | Explicate characteristics and treatment of sewage, Solid Waste, Industrial Waste and Rural Sanitation | Teach Hrs | Marks | | | | | | | | |
| Learning Outcome 1 | Describe characteristics for a given sewage sample and sewage treatment processes. | 17 | 13 | | | | | | | | |
| Content | Characteristics of sewage, B.O.D./ C.O.D. and significant anaerobic process, norms for the discharge of treated se sewage treatment, general layout and flow diagram, removal, skimming, sedimentation of sewage, sludge di filters, activated sludge process, disposal of sewage, septi pond, oxidation ditch, common complaints in the operation and remedies. | ice, aerc wage, ok screeni gestion, ic tank, o on of sep | bic and ojects of ng, grit trickling xidation otic tank | | | | | | | | |

| Method of Assessment External Theory Exam – Pen Paper Test | | | | | | | | | | |
|--|---|---|--|--|--|--|--|--|--|--|
| Learning outcome 2 | Explain Management and Utilization of solid waste and types, characteristics and disposal of Industrial waste. | 5 | 5 | | | | | | | |
| Content | Definitions: Refuse, Rubbish, Garbage, Ashes. Constituent Methods of collection of solid wastes. Methods of treatm of solid waste. Types of industrial waste Hazardous an waste. Major characteristic of waste from the following inc sugar, leather, dairy paper and pulp and food. Genera disposal of waste from above industries. | s of solid nent and d non-ha lustries: t al idea ro | wastes. disposal azardous extile, egarding | | | | | | | |
| Method of Assessment | External Theory Exam – Pen Paper Test | | | | | | | | | |
| Learning outcome 3 | Explain Rural Sanitation | 5 | 5 | | | | | | | |
| Content | Rural sanitation, necessity and importance, types of privies bore hole latrine, construction and working, method of dis waste. | aqua p posal of c | orivy and lomestic | | | | | | | |
| Method of Assessment | Internal Theory Exam: Assignments/ Seminars/ Presentatio | ns | | | | | | | | |
| Learning outcome 4 | Determine D.O,B.O.D,C.O.D, of the given waste water sample and Design the Septic Tank. | 06 | | | | | | | | |
| Content | Determine D.O., B.O.D., C.O.D. of the given waste water Design the Septic Tank for the public building such as h Draw Plan and Section of the same along with the drainag soak pit. | sample. lostel or e arrange | hospital. ement in | | | | | | | |
| Method of Assessment | Practical Exam - Both Internal and External | | | | | | | | | |

Note: 1. Internal marks of practical exam is mentioned in Format 4.

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

List of Suggested Books: -

| S. No. | Authors | Title | Publisher |
|--------|-------------------------------|-------------------------------|---------------------|
| 1. | Husain. S.K. | Text Book of Water supply and | Oxford and IBH |
| | | sanitary Engg. | publlshing Co. New |
| | | | Delhi |
| 2. | Birdie, G.S. and Bridie, J.S. | Water supply and Sanitary | Dhanpat Rai & Sons, |
| | | Engg. | Delhi |
| 3. | Sunil and Rajjan | Jal | NavbhartPrakashan, |
| | | ApurtiEvamSwachchhataEngg. | Meerut |

| 4. | Gurucharan Singh | Water Supply & Sanitary Engg. | Standard Publishers | | | | | | | |
|----|--|---|-------------------------------|--|--|--|--|--|--|--|
| 5. | Saxena, A.K., | LokSwasthyaYantriki | Deepak Prakashan | | | | | | | |
| | | | Gwalior | | | | | | | |
| 6. | Santosh garg | Environmental Engg. (Volume I & II) | Khanna Publishers, | | | | | | | |
| 7. | S.C Rangwala | Water Supply & Sanitary Engg | Charottas Publishing House | | | | | | | |
| 8. | The committee on PHE Manual and code of practice, The Ministry of Health, Govt. of India, "PHE Manual and code of practice – Sections, I, II, III and IV. | | | | | | | | | |
| 9. | I.S. : 1172, 1742, 2065, 2470 and 5329 | | | | | | | | | |

| ter ract. ıt Hrs. | | 1 | 1 | Format No. 4 |
|-------------------------|--|--|--|--|
| ter ract. ıt Hrs. | | | | |
| ter ract. it Hrs. | | | | |
| ract. It Hrs. | | | | |
| ract. ıt Hrs. | | | | |
| ract. ıt Hrs. | | | | |
| | LRs Re | equire | ed | Remarks |
| | Text book, video lectures, chalk board. | | s, | NIL |
| | | | | |
| Resou | ources R | equire | ed | External / Internal |
| Handouts text bo | its, chalk board, PPT, book, charts, video film. | | | Internal |
| () | | | | |
| | | | | |
| | | | | |
| ſ | Handou text k | Handouts, chalk text book, cha film. | Handouts, chalk board text book, charts, vio film. | Handouts, chalk board, PPT, text book, charts, video film. |

| | | | | SCH | EME F | NING | Bran | ch Coo | le | Cou | rse Code | e (| CO Code | LO Code | А | |
|---------|--|---|---|---|---|---|--|--|----------|---------|-------------------|--|------------------------------|---------------------|--------------------|------------------------|
| RGPV | י (טוסוט) | ma w | ing) Bhopai | | OU | TCOME | | С | 0 | 5 | | | | 1 | 2 | Format No. 4 |
| COURS | E NAME | WATER | SUPPLY AND WAS | TE WATEF | R ENGIN | EERING | I | I | | | | | I | | | 1 |
| CO Des | cription | Recogni | ze the Water Source | es , evaluat | te the qu | antity and an | alyze the chara | cteris | tics | of wa | iter. | | | | | |
| LO Dese | cription | Explain | the methods of fo | recasting | populati | ion for estim | ating quantity | of w | ateı | ' sup | ply sch | eme. | • | | | |
| | | 1 | | | | SCHEME O | F STUDY | | | | | | | | | |
| S. No. | | Learni | ing Content | M t | lethod c teaching | of Descr | iption of T-L Process | Tea Hr | ch s. | F /T | Pract. ut Hrs. | LI | Rs Req | uire | d | Remarks |
| 1 | Flow dia demands demands, design p methods problems estimating required f | gram of of wate factors a eriod, fo of forecast on fore g of qua for city or t | water supply sch er, variations of v offecting rate of dem recasting of popula ting of population, (Sin casting of population antity of water su rown. | eme, Inte vater class and, teac tion, assi mple quiz n) , pres | ractive sroom ching, gnments, c, sentation | Teacher the c provide the stur will co and giv to pr knowled | r will explain ontents and handouts to dents; teacher nduct a quiz e assignments ractice their dge. | olain 06 0 and s to cher quiz ents their | | | | Text book video lecti chalk boar | | <, tures ird. | , , | IIL |
| | 1 | | | | SC | CHEME OF AS | SSESSMENT | | | | | | | | | |
| S. No. | Meth Assess | od of sment | Description of | Assessm | ent | Maximum Marks | Passing | Crite | ia | | Re | sourc | es Rec | quire | d | External / Internal |
| 1 | Theory | v exam | Student will be ask various demand of of forecasting pop estimating quantit | ed to expla water,me ulation for y of water. | ain thods | 07 | Test Paper + | Ratin | sca | le | Hando text | uts, c book | halk bo , charts film. | oard, s, vid | РРТ <i>,</i> ео | External |
| | | | A | DITIONA | L INSTRU | JCTIONS FOR | R THE HOD/ FA | | Y (I | FAN | Y) | | | | | |
| | | | | | Part of | f end semest | er theory exa | m | | | | | | | | |

| | / (D:]. | | | OR LEAR | NING | В | ranch Coo | le | Ca | ourse Co | ode | CO Code | LO Code | | | |
|--|---------------|----------------|---|---------------------------|------------------|--|---------------------------|---------|--------------|---|------------------|------------|--------------------------------|------------------------|----------|------------------------|
| RGPV | (Diplo | ma W | ing) Bhopal | | OU | тсоме | | С | 0 | 5 | | | | 1 | 3 | Format No. 4 |
| COURS | E NAME | WATER | SUPPLY AND WAST | E WATER | ENGIN | EERING | I | | | | | 1 | - <u> </u> | | | |
| CO Des | cription | Recogniz | ze the Water Source | , evaluate | e the qu | antity and an | alyze the char | acter | istics | of wa | ater. | | | | | |
| LO Des | cription | Explain | physical ,chemical | nd biolog | gical ch | aracteristics | of water. | | | | | | | | | |
| | | | | | | SCHEME O | F STUDY | | | | | | | | | |
| S. No. | | Learni | ng Content | Me te | ethod eaching | of Descr g l | ription of T-L Process | Te H | each Irs. | ן ד/ | Pract. ut Hrs | • | LRs Re | quire | d | Remarks |
| 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. | | | | | | ve Teacher will explain m the contents and r, provide handouts to ents, the students; teach will conduct a quiz ation. and give assignment to practice their | | | | 00 | | | ext boo ideo leo halk bo | ok, ctures oard. | , | IIL |
| | | | | | S | CHEME OF AS | SSESSMENT | | | | | | | | | |
| S. No. | Meth Asses | od of sment | Description of | Assessme | nt | Maximum Marks | Passing | ; Crit | eria | | Re | esour | rces Re | equire | d | External / Internal |
| 1 | Theory ex | xam | Student will be a characteristics o quality standards as water borne diseases | xplain Water 10 and | 06 | Test Paper - | + Rati | ng sca | le | Handouts, chalk board, text book, charts, vid film. | | | | PPT, eo | External | |
| | | | AD | DITIONAL | INSTRU | JCTIONS FOR | R THE HOD/ F | ACU | LTY (II | F AN | Y) | | | | | |
| | | | | | Part o | f end semest | er theory ex | am | | | | | | | | |

| | | | | | SCHEME | FOR LE | ARNING | Branch Code | | | | Cours | e Code | CO Code | LO Code | |
|--------|---|----------------|---|---------------|---|---------------|-----------------------------|-------------------------|---------------|------|-------------|-----------------|----------------------------|------------------------------|---------------|------------------------|
| KGPV | ו (טוףוט) | oma w | ing) Bhopai | | οι | JTCON | 1E | С | 0 | | 5 | | | 1 | 4 | Format No. 4 |
| COURS | E NAME | WATER | SUPPLY AND WAS | TE W | ATER ENGIN | NEERING | | I | | | | I | I | | | - |
| CO Des | cription | Recogni | ize the Water Source | es,e | valuate the qu | uantity ar | nd analyze the c | haracte | eristics | of | wate | • | | | | |
| LO Des | cription | Determ | nine turbidity, pH v | alue, | TDS, DO of | the giver | n water sample | • | | | | | | | | |
| | | 1 | | | | SCHEN | IE OF STUDY | | | | | | | | | |
| S. No. | | Learn | ing Content | | Method teachin | of C g | Description of T Process | -L 1 | Teach Hrs. | | Pra /Tut | ct. Hrs. | LRs | Require | ed | Remarks |
| 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. | | | | InteractiveTeacher will exclassroomthe contents arteaching,provide handorassignments,the students; tquiz,will conduct arpresentation.and give assignto practice theknowledge. | | | n 0 :o ner nts | 00 12 | | | | Text video chalk | book, lecture board. | s, | NIL |
| | | | | | S | CHEME C | OF ASSESSMEN | т | | | | | | | | |
| S. No. | Meth Asses | od of sment | Description o | f Ass | essment | Maxim Mark | um s Pass | ing Cri | iteria | | | Resc | ources | Requir | ed | External / Internal |
| 1 | Practical | Exam | Students will be as any of the above t | ked t est. | o perform | | Rating | scale/ | Rubric | S | Ha | andou text b | ts, cha ook, cł filr | lk board narts, vio n. | , PPT, deo | Both |
| | | | A | DITI | ONAL INSTR | UCTIONS | 5 FOR THE HOD | / FACl | ULTY (| IF A | ANY) | | | | | |
| | | | Pa | rt of | Practical Exa | am : Inte | rnal Marks for | Practio | cal : 10 | OM | arks | | | | | |

| R | GPV (D | iplom | a Wing) | SC | HEME | FOR LE | ARNING | В | ranch Code | | Course Co | ode Co | CO ode | LO Code | Л |
|--|---------------|----------------|--|---|--|--|-------------------------------|--------|---------------|--------|--------------------------|--------------------------------|---------------------|------------|------------------------|
| | | Bhopa | | | οι | JTCON | 1E | С | 0 | 5 | | | 2 | 1 | Format No. 4 |
| COURS | E NAME | WATER | SUPPLY AND WA | STE WAT | | NEERING | | 1 | | | I | I | | | |
| CO Des | cription | Explain | function of various | stages of | ^f treatmen | t of influe | ent water | | | | | | | | |
| LO Des | cription | Describ | e the process of s | ediment | ation wit | h optimu | ım dose of coagu | lant. | | | | | | | |
| | | 1 | | | | SCHEN | IE OF STUDY | | | | | | | | |
| S. No. | | Lear | ning Content | | Methoo teachi | d of E ng | Description of T-L Process | - | Teach Hrs. | Pr | act. /Tut Hrs. | LRs F | Requ | uired | 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. | | | | Interactiv classroor teaching, assignme quiz, presenta | ve Te n the , pro ents, the will tion. an to kn | acher will explain e contents and ovide handouts to e students; teache Il conduct a quiz d give assignments practice their owledge. | 05 | 5 | 0 | | Text k video chalk | book lect boa | s, sures, rd. | NIL | |
| | | | | | S | CHEME (| OF ASSESSMENT | | | | | | | | |
| S. No. | Meth Asses | od of sment | Description of | of Assess | ment | Maxim Mark | um Passin s | g Crit | eria | | Resou | ces Req | uire | d | External / Internal |
| 1 | Theory e | xam | Students will be as process of treatme | sked to de nt of wate | scribe any r. | 06 | Test Paper | + Rati | ing scale | : · | landouts, text boc | chalk bo k, charts film. | ard, vid | PPT, eo | External |
| | I | | A | DDITION | IAL INSTR | UCTIONS | 5 FOR THE HOD/ | FACU | LTY (IF | ANY) | | | | | |
| | | | | | Part o | of end se | mester theory e | am | | | | | | | |
| | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | 1 |
|--|---|----------------|---------------------|-------------|---|------------------|---------------------------|--------|---------------|-------|----------------------------|---------|---------------------------------|-------------------------|------------------------|
| R | GPV (D | iploma | a Wing) | SC | HEME | FOR LEAF | RNING | В | ranch Code | | Cour | se Code | CO Code | LO Code | |
| | | Bhopal | 07 | | OU | ITCOME | | С | 0 | 5 | | | 2 | 2 | Format No. 4 |
| COURS | E NAME | WATER | SUPPLY AND WA | STE WAT | ER ENGIN | IEERING | · | | | | | I | | | |
| CO Des | cription | Explain f | unction of various | stages of | treatmen | t of influent v | vater. | | | | | | | | |
| LO Dese | cription | Describe | the process of filt | ration, dis | sinfection | and miscellar | neous water tro | eatmo | ents for | water | samp | ole. | | | |
| | | | | | | SCHEME C | OF STUDY | | | | | | | | |
| S. No. | | Learr | ning Content | | Method teachi | l of Desc ng | ription of T-L Process | - | Teach Hrs. | Pra | ct. / [.] Hrs. | Tut | LRs Re | quired | 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, defluoridationtechniques, AdvancedWaterTreatments: electrolysis. reverse | | | | | classroom teaching, assignments, quiz, presentation. the contents and provide handouts the students; teac will conduct a quiz and give assignme to practice their knowledge. | | | 12 | 12 0 | | | | Text bo video le chalk bo | ok, ctures, bard. | NIL |
| | | | | | S | CHEME OF A | SSESSMENT | | | | | | | | |
| S. No. | Meth Asses | od of sment | Description o | of Assess | ment | Maximum Marks | Passinį | g Crit | eria | | Res | ource | s Requi | red | External / Internal |
| 1 | 1Student will be asked to explainmechanism of filtration, construction of any filter.13Test Paper + Rating scaleHandouts, chalk board, PPT, text book, charts, videoExternal | | | | | | | | | | | | | | |
| | | | A | DDITION | AL INSTR | UCTIONS FO | R THE HOD/ I | ACU | LTY (IF | ANY) | | | | | |
| | | | | | Part o | of end seme | ster theory ex | am | | | | | | | |

| | | | | S | CHEME | FOR LE | ARNING | | Ві | ranch Coo | le | (| Course | Code | CO Code | LO Code | Λ |
|--------|---|---------------|--|--------------|---|--|--|---|---------|--------------|---------|-----------------|---------------|------------------------------|--------------------------|---------------|------------------------|
| KGPV | | | ng) Bhopai | | οι | JTCON | /IE | | С | 0 | 5 | | | | 2 | 3 | Format No. 4 |
| COURS | ENAME | WATER S | SUPPLY AND WAST | E WA | ATER ENGIN | IEERING | | | | | | | _ | | | - | |
| CO Des | cription | Explain fu | unction of various sta | ages | of treatmen | t of influe | ent water | | | | | | | | | | |
| LO Des | cription | Determi | ne residual chlorine | e, op | timum coa | gulant co | ontent of th | e give | en w | ater s | amp | le. | | | | | |
| | | | | | | SCHEN | /IE OF STUD | Y | | | | | | | | | |
| S. No. | | Learnir | ng Content | | Method teaching | of C g | Description Process | of T-L | Te H | each Irs. | Р Т\ | Pract. ut Hr | s. | LRs R | equire | ed | Remarks |
| 1 | Determine residual chlorine in given sample of water. Determine the optimum dos coagulant in a given raw water sa by jar test. | | | of ple | Interactive classroom teaching, assignments quiz, presentatior | Te th pr s, th wi n. an to kn | acher will ex e contents ar ovide handor e students; to Il conduct a c d give assign practice thei owledge. | plain nd uts to eacher juiz ments r | 00 | | 06 | | | Text b video l chalk k | ook, ecture ooard. | s, | NIL |
| | | | | | S | CHEME (| OF ASSESSIV | IENT | | | | | | | | | |
| S. No. | Metho Assess | od of ment | Description of A | Asses | ssment | Maxim Mark | um s | assing | ; Crit | eria | | R | eso | urces F | Requir | ed | External / Internal |
| 1 | Practical E | Exam | Students will be ask any of the above tes | ed to st. | perform | | Rat | ing sca | le/ R | ubrics | | Hano te | dout xt bo | s, chalk ook, cha film | : board arts, vie | , PPT, deo | Both |
| | | | ADI | οιτιο | NAL INSTR | UCTIONS | S FOR THE H | OD/ F | ACU | LTY (II | F AN | Y) | | | | | |
| | | | Par | t of F | Practical Ex | am : Inte | ernal Marks | for Pra | actic | al :05 | Mar | ks | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

| | (/ D: | | | S | SCHEME F | OR LEAR | NING | B | ranch (| Code | | Cour | se Code | CO Code | L. Co | O de | 7 |
|--------|---|----------------|--------------------------------------|----------------------|---|--|--|--------|--------------|-------|--------------|----------------|----------------------------|------------------------------------|---------------|---------|------------------------|
| KGPV | | oma w | ing) Bhopai | | OU | TCOME | | С | 0 | | 5 | | | 3 | 1 | 1 | Format No. 4 |
| COURS | E NAME | WATER | SUPPLY AND WAS | re w | ATER ENGIN | EERING | | | | | | | i | ! | | | |
| CO Des | cription | Build Kn | owledge on conveya | nce a | and distributi | on of water. | | | | | | | | | | | |
| LO Des | cription | Describe | e different types of p | ipes | and pipe fittir | ngs. | | | | | | | | | | | |
| | | 1 | | | | SCHEME O | F STUDY | | | | | | | | | | |
| S. No. | | Learni | ing Content | | Method teaching | of Descr g | ription of T-L Process | Т | each Hrs. | | Prac /Tut | ct. Hrs. | LRs | Requi | ed | | Remarks |
| 1 | Learning Content Types of pipes used for conveyance of y choice of pipe material, types of joints & of valves-their use, location and function pipeline. | | | iter, pes on a | Interactive classroom teaching, assignments quiz, presentation | Teache the con provide the stur will con and giv to prac knowle | r will explain atents and a handouts to dents; teacher aduct a quiz e assignments tice their dge. | 04 | 1 | (|) | | Text video chall | book, o lectur c board. | es, | NI | _ |
| | | | | | S | CHEME OF A | SSESSMENT | | | | | | | | | | |
| S. No. | Meth Asses | od of sment | Description of | Asse | essment | Maximum Marks | Passing | g Crit | eria | | | Res | ources | Requi | red | | External / Internal |
| 1 | Theory e | xam | Student will be a types of pipe mate | sked 'ial a | to explain nd joints. | 05 | Test Paper | + rati | ng so | ale | На | ndou text l | its, cha book, c fil | ilk boar harts <i>,</i> v m. | d, PP ideo | Τ, | External |
| | | | AD | DITI | ONAL INSTRU | JCTIONS FOI | R THE HOD/ F | ACU | LTY | (IF / | ANY) | | | | | | |
| | | | | | Part o | f end semest | ter theory ex | am | | | | | | | | | |

| | | | , S | | FOR LEAI | RNING | В | ranch Co | de | Cou | rse Code | CO Code | LO Code | |
|--------|--|---|----------------------------------|--|--|--|---------|--------------|---------|-------------------|------------------------|-----------------------------|-----------------|------------------------|
| KGPV | י (טוסוט) | oma wing) Bhopa | | OU | JTCOME | | С | 0 | 5 | | | 3 | 2 | Format No. 4 |
| COURS | E NAME | WATER SUPPLY AND V | ASTE WA | TER ENGIN | IEERING | · · · | | | | | | | | <u>'</u> |
| CO Des | cription | Build Knowledge on con | veyance a | nd distributi | on of water. | | | | | | | | | |
| LO Des | cription | Explain methods and lag | out of dis | tribution of | water. | | | | | | | | | |
| | | | | | SCHEME (| OF STUDY | | | | | | | | |
| S. No. | | Learning Content | | Method teachin | of Desc lg | cription of T-L Process | Т | each Hrs. | F /T | Pract. ut Hrs. | LRs | Require | ed | Remarks |
| 1 | Methods of distribution of water - gr pumping, and combined system s reservoirs –functions and types, layou distribution of water- dead end system, gri system, circular system, radial system; suitability, advantages and disadvantages | | | Interactive classroom teaching, assignmen quiz, presentatio | ts, Teach the co provid ts, the str will co on. and gi to pra knowl | er will explain intents and le handouts to udents; teacher induct a quiz ve assignments ctice their edge. | 10 |) | 00 | | Text video chalk | book, blecture board. | ۲ ۶ <i>,</i> | NIL |
| | | | | S | CHEME OF A | ASSESSMENT | | | | | | | | |
| S. No. | Meth Asses | nod of Descriptio | n of Asses | sment | Maximum Marks | Passing | g Crit | eria | | Re | sources | Require | d | External / Internal |
| 1 | Theory E | xam Students will b water distribut and disadvantag | e asked to ion, their ges. | method of advantages | 10 | Rating sca | ale/ R | ubrics | | Hando text | outs, cha book, ch | llk board arts, vid | , PPT, eos, | Internal |
| | | | ADDITIO | | UCTIONS FC | OR THE HOD/ F | ACU | LTY (I | F AN | Y) | | | | |
| | | | | Interna | al Theory Exa | m - Mid Semes | ter I | | | | | | | |
| | | | | | | | | | | | | | | |

| RGPV | / (Diplo | ma Wi | ng) Bhopal | SC | | FOR LEAI | RNING | В | ranch Co | de | | Course | e Code | CO Code | LO Code | Format No. 4 |
|--------|--|---|---|--|--|---|---|--------|--------------|-------|------------------|--------------|-------------------------------|----------------------------|---------------|------------------------|
| | | | | | OL | JTCOME | | С | 0 | 5 | | | | 4 | 1 | |
| COURS | ENAME | WATER S | SUPPLY AND WAS | TE WA | TER ENGIN | IEERING | ' | | 1 | | | | | | | |
| CO Des | cription | Explain sa | anitation, sewerage | e syster | n and its va | rious accesso | ories. | | | | | | | | | |
| LO Des | cription | Describe | various terms relate | ed to b | uilding sani | tation and c | lraw layout plai | n of c | Iraina | ge sy | stem | for t | he give | n build | ing. | |
| | | | | | | SCHEME (| OF STUDY | | | | | | | | | |
| S. No. | | Learni | ng Content | | Method teachin | of Deso | cription of T-L Process | T I | each Hrs. | ۲/ | Pract. Tut Hr | s. | LRs R | Require | ed | Remarks |
| 1 | Importanc necessity and Reuse terms rela rain wate pipe, Build Indian and basin, sink good trap drainage, pipe, sing sanitary fi junction ch | te and to treat of e of domes ted to build r pipe, soi ding Sanita European s, urinals, t o, principle systems of gle stack, ttings (drai nambers, th | necessity of sanit domesticsewage, Rec tic waste, definitions of ding sanitation- water il pipe, sullage pipe, ary fittings- water clo type, flushing cistern, traps- types and quali- es of design of bu plumbing – one pipe layout plan for bu inage plan), inspection peir necessity, location | tation, cycling of the r pipe, , vent oset – , wash ties of uilding e, two uilding on and n. | Interactive classroom teaching, assignmen quiz, presentatio | Teach the co provic ts, the st will cc on. and gi to pra knowl | er will explain ntents and le handouts to udents; teacher onduct a quiz ve assignments ctice their edge. | 10 |) | 0 | | | Text b video l chalk b | ook, lecture: board. | ۲ ۶, | NIL |
| | | | | | S | CHEME OF / | ASSESSMENT | | | | | | | | | |
| S. No. | Metho Assess | od of ment | Description of | Asses | sment | Maximum Marks | Passing | ; Crit | eria | | R | leso | urces F | Require | ed | External / Internal |
| 1 | Theory ex | am | Student will be as sanitation, recycl various sanitary fitt | sked to ling c tings. | o describe of waste, | 10 | Test Paper | + rati | ng sca | le | Han te | dout xt b | ts, chalk ook, cha film | c board arts, vic | , PPT, leo | External |
| | | | AD | DITIO | | UCTIONS FO | OR THE HOD/ F | ACU | LTY (I | FAN | IY) | | | | | |
| | | | | | Part o | f end seme | ster theory ex | am | | | | | | | | |

| | | | | S | SCHEME | FOR L | .EARI | NING | B | ranch Co | de | | Course | Code | CO Code | LO Code | |
|--------|--|--|---|-------------------------------|---|---|--|--|--------|--------------|---------|----------------|----------------|------------------------------|---------------------------|---------------|------------------------|
| KGP | | oma w | ing) Bhopai | | OU | ΙΤΟΟΙ | ME | | С | 0 | 5 | | | | 4 | 2 | Format No. 4 |
| COURS | SE NAME | WATER | SUPPLY AND WAST | re w | ATER ENGIN | IEERING | G | | | 1 | 1 | | | | | 1 | |
| CO Des | scription | Explain s | sanitation, sewerage | syste | em and its va | rious ac | cessori | ies. | | | | | | | | | |
| LO Des | cription | Describe | e design principles for | r a se | ewerage syste | em. | | | | | | | | | | | |
| | | | | | | SCHE | | STUDY | | | | | | | | | |
| S. No. | | Learni | ing Content | | Method teaching | of g | Descri P | ption of T-L Process | Т | each Hrs. | і /Т | Pract Tut H | rs. | LRs F | Require | ed | Remarks |
| 1 | Definitior types of principles velocity testing ar | ns- sewage, f sewers, s of desigr and non nd mainten | , sullage, types of sewa systems of sewera n ofsewers, self-cleans -scouring velocity,lay ance of sewers. | age, age, sing ring, | Interactive classroom teaching, assignments quiz, presentation | T t p t v n. a t k | eacher he cont provide he stud vill cond und give o practi mowlec | will explain ents and handouts to lents; teacher duct a quiz e assignments ice their lge. | 05 | 5 | 00 | | | Text b video chalk l | ook, lecture board. | s, | NIL |
| | | | | | S | CHEME | OF AS | SESSMENT | | | | | | | | | |
| S. No. | Meth Asses | nod of sment | Description of | Asse | essment | Maxin Mar | num ′ks | Passing | g Crit | eria | | | Reso | urces l | Requir | ed | External / Internal |
| 1 | Theory e | exam | Students will be sewage, sullage a sewerage. | askec and | d to define systems of | 05 | 5 | Rating sca | ale/ R | ubrics | | Har te | dout ext bo | s, chall ook, cha film | c board arts, vio | , PPT, leo | External |
| | | | AD | DITIO | | UCTION | NS FOR | THE HOD/ F | ACU | LTY (I | F AN | Y) | | | | | 1 |
| | | | | | Part o | of end s | emest | er theory ex | am | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

| | | | | SCHEME | FOR LEA | RNING | Bra | anch Co | de | | Course | Code | CO Code | LO Code | 2 |
|--------|--|---|--|---|---|--|---------|--------------|------|----------------|----------------|----------------------------|------------------------------|--------------|------------------------|
| RGPV | / (Diplo | oma Wing) | Bhopal | OL | JTCOME | | С | 0 | 5 | 5 | | | 4 | 3 | Format No. 4 |
| COURS | E NAME | WATER SUPPL | LY AND WAST | E WATER ENGIN | NEERING | | | | _ | | | | | | |
| CO Des | cription | Explain sanitati | ion, sewerage s | system and its va | rious access | ories. | | | | | | | | | |
| LO Des | cription | Explain accesso | ories of sewera | ge system. | | | | | | | | | | | |
| | | | | | SCHEME | OF STUDY | | | | | | | | | |
| S. No. | | Learning Cor | ntent | Method teachin | of Des g | cription of T-L Process | Te H | each Irs. | / | Pract Tut H | rs. | LRs | Require | ed | Remarks |
| 1 | Sewer ap manholes sewer inl cleaning o and auton | opurtenances- ma -component parts ets, street inlets, of manhole, flushi natic. | anholes and dr s, location, spaci , maintenance a ing tanks – man | op Interactive ng, classroom nd teaching, ual assignments quiz, presentation | Teach the ca provi s, the si will c n. and g to pra know | ner will explain ontents and de handouts to tudents; teacher onduct a quiz vive assignments actice their dedge. | 05 | | 00 |) | | Text I video chalk | book, lecture board. | S, | NIL |
| | | | | S | CHEME OF | ASSESSMENT | | | | | | | | | |
| S. No. | Meth Asses | od of D | escription of <i>I</i> | Assessment | Maximum Marks | Passing | Crite | eria | | 1 | Reso | urces | Requir | ed | External / Internal |
| 1 | Theory e | xam Stude of ma | ent will be as er appurtenance anhole. | ked to explain es andnecessity | 05 | Rating sca | le/ Rı | ubrics | 5 | Har te | idout ext b | s, chal ook, ch filn | lk board narts, vie n. | , PPT deo | , Internal |
| | | | ADD | DITIONAL INSTR | | OR THE HOD/ F | ACUL | LTY (I | IF A | NY) | | | | | |
| | | | Interi | nal Theory Exan | n - Assignm | ent/Quiz/Semi | nar/F | Prese | enta | tion. | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

| | | | | 9 | SCHEME | FOR LE | ARNING | E | Branch Coo | de | c | ourse C | ode | CO Code | LO Code | |
|--------|---|--|--|---|---|---|---|-----------------------|---------------|------|-------------------|------------------|--|--------------------------|------------|------------------------|
| KGPV | | ma w | ing) Bhopai | | οι | JTCON | 1E | С | 0 | 5 | | | | 5 | 1 | Format No. 4 |
| COURS | E NAME | WATER | SUPPLY AND WA | STE W | ATER ENGIN | NEERING | | | | 1 | | | _ | | | |
| CO Des | cription | Explicate | e characteristics an | d trea | tment of sew | age, Solid | l Waste, Industri | al Was | te and | Rura | al Sani | atior | ו | | | |
| LO Des | cription | Describe | e characteristics for | a give | en sewage sar | mple and | sewage treatme | nt proc | cesses. | | | | | | | |
| | | 1 | | | | SCHEN | IE OF STUDY | | | | | | | | | |
| S. No. | | Learni | ing Content | | Method teachin | of C g | Description of T Process | ·LT | 「each Hrs. | /1 | Pract. Tut Hrs | 5. | LRs R | equire | ed | Remarks |
| 1 | Character significant norms fo objects o and flow skimming digestion, process, oxidation complaint remedies | istics of se ce, aerobio r the discl f sewage diagram, sedimen trickling disposal pond, o s in the op | ewage, B.O.D./ C.O.D c and anaerobic pro harge of treated ser treatment, general I screening, grit ren tation of sewage, se filters, activated so of sewage, septic oxidation ditch, cor peration of septic tan |). and ocess, wage, ayout noval, sludge sludge tank, nmon ik and | Interactive classroom teaching, assignments quiz, presentation | Te the pro 5, the wi n. an to kn | acher will explain e contents and ovide handouts t e students; teach Il conduct a quiz id give assignmer practice their owledge. | n 1 o er its | 7 | 0 | | | Гехt bo video lo chalk b | ook, ecture: oard. | ٢, | NIL |
| | 1 | | | | S | CHEME (| OF ASSESSMEN | Γ | | | | | | | I | |
| S. No. | Meth Asses | od of sment | Description of | of Ass | essment | Maxim Mark | um s | ng Cri | teria | | R | esou | rces R | equire | ed | External / Internal |
| 1 | Theory e | xam | Student will be characteristics a sewage. | asked nd tr | to describe eatment of | 13 | Rating | scale/F | Rubrics | | Hand tex | louts, ct boo | See Coole CO Coole LO Code 5 1 tion LRs Required Text book, video lectures, chalk board. Sources Required uts, chalk board, PPT book, charts, video film. | , PPT, leo | External | |
| | | | А | DDITI | ONAL INSTR | UCTIONS | S FOR THE HOD, | / FACL | JLTY (II | FAN | IY) | | | | | |
| | | | | | Part o | of end se | mester theory | exam | | | | | | | | |
| | | | A | DDITI | ONAL INSTR Part c | UCTIONS of end se | S FOR THE HOD, mester theory (| / FACL exam | JLTY (II | FAN | IY) | | | | | |

| | | | ······································ | SCHEME | FOR LEAR | NING | Bra | nch Co | de | Co | urse Cod | le | CO Code | LO Code | |
|--------|---|--|--|--|---|--|---------|------------|---------|------------------|-------------------|------------------------------|-----------------------|--------------------|------------------------|
| KGPV | | ma w | ing) Bhopai | OL | ITCOME | | С | 0 | 5 | | | | 5 | 2 | Format No. 4 |
| COURS | E NAME | WATER | SUPPLY AND WAST | WATER ENGIN | IEERING | | | | | | | I | | | 1 |
| CO Des | cription | Explicat | e characteristics and t | reatment of sew | age, Solid Wa | ste, Industrial V | Vaste | and | Rura | l Sanita | ation | | | | |
| LO Des | cription | Explain | Rural Sanitation. | | | | | | | | | | | | |
| | | 1 | | | SCHEME O | F STUDY | | | | | | | | | |
| S. No. | | Learn | ing Content | Method teaching | of Desci g | ription of T-L Process | Te H | ach rs. | F /T | Pract. ut Hrs | L | Rs Re | quire | d | Remarks |
| 1 | Rural importand bore hole method o | sanitatio ce,types of latrine, o f disposal o | n, necessity a f privies – aqua privy a construction and worki of domestic waste. | nd Interactive nd classroom ^{ng,} teaching, assignments quiz, presentatior | Teache the con provide the stu will con and giv to prac knowle | r will explain atents and a handouts to dents; teacher aduct a quiz e assignments tice their dge. | 05 | | 0 | | Te vic ch | ext boo deo leo alk bo | ok, ctures ard. | Ν, | IIL |
| | | | | S | CHEME OF A | SSESSMENT | | | | | | | | | |
| S. No. | Meth Assess | od of sment | Description of A | ssessment | Maximum Marks | Passing | Crite | eria | | Re | sourc | ces Re | quire | ed | External / Internal |
| 1 | Theory ex | xam | Student will be as assignments gi regarding solid was and industrial waste | ked to submit ving details e management | 05 | Rating scal | le/ Ru | ıbrics | | Hando tex | outs, c t book | chalk b k, chart film. | oard, ts, vid | РРТ <i>,</i> ео | External |
| | | | ADI | ITIONAL INSTR | UCTIONS FOI | R THE HOD/ F | ACUL | TY (I | F AN | Y) | | | | | |
| | | | | Part o | of end semes | ter theory exa | m | | | | | | | | |

| | | | : | S | SCHEME | | NING | В | ranch Co | de | | Course (| Code | CO Code | LO Code | |
|--------|---|--|--|----------------------------|---|---|---|-------|--------------|-------|------------------|----------------|------------------------------|---------------------------|---------------|------------------------|
| KGPV | י (טוסוט) | oma w | ing) Bhopai | | OU | TCOME | | С | 0 | 5 | | | | 5 | 3 | Format No. 4 |
| COURS | E NAME | WATER | SUPPLY AND WAS | TE W | ATER ENGIN | IEERING | ' | | | | I | | | | | ' |
| CO Des | cription | Explicate | e characteristics and | treat | tment of sewa | age, Solid Wa | ste, Industrial V | Vast | e and | Rura | al Sani | tatio | n | | | |
| LO Des | cription | Explain | Rural Sanitation. | | | | | | | | | | | | | |
| | | 1 | | | | SCHEME O | F STUDY | | | | | | | | | |
| S. No. | | Learni | ing Content | | Method teaching | of Desc | ription of T-L Process | T | each Hrs. | /1 | Pract. Fut Hr | 'S. | LRs R | equire | ed | Remarks |
| 1 | Rural importand bore hole method o | sanitatio ce,types of e latrine, o f disposal o | n, necessity f privies – aqua privy construction and wor of domestic waste. | and and king, | Interactive classroom teaching, assignments quiz, presentation | Teache the cor provide the stu will cor and giv to prac knowle | er will explain ntents and handouts to idents; teacher nduct a quiz ve assignments itice their edge. | 05 | | 0 | | | Text b video l chalk k | ook, ecture: ooard. | ۲ 5, | NIL |
| | | | | | S | CHEME OF A | SSESSMENT | | | | | | | | | |
| S. No. | Meth Asses | od of sment | Description of | fAsse | essment | Maximum Marks | Passing | Crit | eria | | R | lesou | irces F | Require | ed | External / Internal |
| 1 | Theory e | xam | Student will be a assignments gregarding rural san | asked giving nitatio | l to submit details m. | 05 | Rating sca | le/ R | ubrics | | Han te | douts xt bo | s, chalk ok, cha film | board arts, vic | , PPT, leo | Internal |
| | | | AD | DITIO | ONAL INSTR | UCTIONS FO | R THE HOD/ F | ٩CU | LTY (I | FAN | NY) | | | | | |
| | | | Ра | rt of | Internal Exa | m – Assignm | ents/Seminar | s/Pr | esent | tatio | ons | | | | | |

| | | | : | 5 | SCHEME | FOR LE | ARNING | | Branch Co | de | C | ourse C | ode | CO Code | LO Code | Λ |
|--------|---|----------------|--|-------------------------------------|---|--|--|--------|---------------|---------|------------------|-----------------|-------------------------------|--------------------------|---------------|------------------------|
| KGPV | | oma w | ing) Bhopai | | οι | лоэт | IE | С | 0 | 5 | | | | 5 | 4 | Format No. 4 |
| COURS | E NAME | WATER | SUPPLY AND WAS | TE W | ATER ENGIN | NEERING | | | - | | | | | | - | |
| CO Des | cription | Explicat | e characteristics and | treat | tment of sew | age, Solid | Waste, Industria | l Was | te and | Rura | l Sanit | tatio | ı | | | |
| LO Des | cription | Determ | ine D.O,B.O.D,C.O.D, | of t | he given was | ste water s | sample and desig | n the | septic | tank | • | | | | | |
| | | 1 | | | | SCHEM | IE OF STUDY | | | | | | | | | |
| S. No. | | Learn | ing Content | | Method teachin | of D g | escription of T- Process | . 1 | 「each Hrs. | Г Т/ | Pract. ut Hrs | 5. | LRs R | equire | ed | Remarks |
| 1 | Learning Content Determine D.O., B.O.D., C.O.D waste water sample. Design the septic tank for the pub building such as hostel or hospital a draw plan and section of the sar along with the drainage arrangement in soak pit. | | | D.of ublic and ame nent | Interactive classroom teaching, assignments quiz, presentation | Tea the pro s, the will n. and to p knc | acher will explain e contents and ovide handouts to e students; teache l conduct a quiz d give assignment practice their owledge. | r s | 0 | 06 | | | Text bo video l chalk b | ook, ecture ooard. | s, | NIL |
| | | | | | S | CHEME O | F ASSESSMENT | | | | | | | | | |
| S. No. | Meth Assess | od of sment | Description of | Asse | essment | Maximu Marks | ım Passiı | ig Cri | teria | | R | esou | rces F | Requir | ed | External / Internal |
| 1 | Practical | Exam | Students will be as any of the above to | ked t est. | o perform | | Rating s | ale/ I | Rubrics | | Hand tex | louts kt bok | , chalk ok, cha film | board arts, vie | , PPT, deo | Both |
| | | | AD | DITI | ONAL INSTR | UCTIONS | FOR THE HOD/ | FACI | JLTY (I | F AN | Y) | | | | | |
| | | | Ра | rt of | Practical Exa | am : Inter | nal Marks for P | actio | al : 05 | Mar | 'ks | | | | | |

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.