PDEU

PANDIT DEENDAYAL ENERGY UNIVERSITY

Formerly Pandit Deendayal Petroleum University (PDPU)

UGC RECOGNIZED

CIVIL ENGINEERING DEPARTMENT

Curriculum

PANDIT DEENDAYAL ENERGY UNIVERSITY GANDHINAGAR

Pandit Deendayal Energy University
Department of Civil Engineering – Course structure of B.Tech

Semester	Course Code	Course Name	Credits	Semester	Course Code	Course Name	Credits
Semester - 1	20MA101T	Mathematics - I	4	Semester - 4	20CV207T	Hydrology & Water Resources	3
	20CE101T	Element of Civil Engineering & Solid Mechanics	4		20CV207P	Hydrology & Water Resources - Lab	1
	20CE101P	Element of Civil Engineering & Solid Mechanics - Lab	1		20CV208T	Structural Analysis	4
	20EE101T	Elements of Electrical Engineering	3		20CV209T	Surveying	3
	20EE101P	Elements of Electrical Engineering - Lab	1		20CV209P	Surveying - Lab	2
	20PH101T	Physics	3		20CV210T	Geology & Soil Mechanics	4
	20PH101P	Physics Lab	1		20CV210P	Geology & Soil Mechanics - Lab	1
	16ME103P	Workshop Practice	1		20CV211/212T	Open Elective II	3
	20ME101P	Engineering Graphics-Lab	2		20IF201T	Industry 4.0	2
	20CP102P	Fundamentals of Python Programming	1		20IF201P	Industry 4.0 - Lab	1
	20HS102T	Environmental Studies	3		TP210	Industrial Orientation (3 weeks)	1
	20HS101P	Communication Skills - I	1	Semester - 5	20CV301T	Highway and Traffic Engineering	4
	16SP1XX	NCC/NSS/Sports	1		20CV301P	Highway and Traffic Engineering - Lab	1
Semester - 2	20MA103T	Mathematics – II	4		20CV302T	Foundation Engineering	4
	20CH101T	Engineering Chemistry	3		20CV302P	Soil Mechanics and Foundation Engineering - Lab	1
	20CH101P	Engineering Chemistry Lab	1		20CV303T	Design of RCC Structures	3
	20ME102T	Element of Mechanical Engineering	3		20CV304T	Environmental Engineering	4
	20ME102P	Element of Mechanical Engineering-Lab	1		20CV304P	Environmental Engineering - Lab	1
	20IC101T	Basic Electronics	2		20CV305/6T	Open Elective-III	3
	20IC101P	Basic Electronics Lab	1		20HS301P	Communication Skills - III	1
	20CP101T	Computer Programming with C	1	Semester - 6	20CV307T	Estimation Costing Contracts and Valuations	3
	20CP101P	Computer Programming with C Lab	1		20CV308T	Design of Steel Structures	3
	16HS109T	Professional Ethics and Human Values	1		20CV309P	Structural Drawing - Lab	1
	16SP1XX	NCC/NSS/Sports	1		20CV3XXT	Professional Core Elective-1	4
	16TP110	Civic services and Social Internship (Summer)	1		20CV3XXT	Professional Core Elective-2	4
Semester - 3	20MA204T	Maths-III	4		20CV3XXT	Professional Core Elective-3	4
	20CV201T	Open Elective-1	3		20CV3XXT	Open Elective-4	3
	20CV202T	Concrete Technology & Construction Materials	3		20TP310	Industrial Training/ IEP (6 weeks)	2
	20CV202P	Concrete Technology &	1	Semester - 7	20CV417T	Project Management	2
	20CV203T	Fluid Mechanics	3		20CV417P	Project Management- Lab	1
	20CV203P	Fluid Mechanics - Lab	1		20CV4XXT	Professional Core Elective-4	4
	20CV204T	Mechanics of Materials	3		20CV4XXT	Professional Core Elective-5	4
	20CV206P	Building Planning and Drawing - Lab	2		20CV4XXT	Professional Core Elective-6	4
	20HS201P	Communication Skills - II	1		20TP410	Minor Project	3
				Semester - 8	20TP420	Major Project/Comprehensive Project	10

	Course Code	Course Name	Credits
Open Electives	20CV201T	Geo-Spatial Techniques	4
	20CV211T	Finite Element Method	4
	20CV329T	Environmental Impact Assessment	4
	20CV305T	Disaster Management	4
	20CV212T	Green Building Management	4
	20CV306T	Smart Infrastructure and Cites	4
	20CV331T	Computing Techniques and Design of Experiments	4
	20CV330T	Computational Geomechanics	4
Professional Core Electives	20CV310T	Advanced Structural Analysis	4
	20CV311T	Rock mechanics & underground structures	4
	20CV315T	Geospatial Technologies	4
	20CV313T	Value Engineering	4
	20CV406T	Intelligent Transportation Systems	4
	20CV413T	Design of Water and Sewerage Network	4
	20CV317T	Advanced Concrete Technology	4
	20CV324T	Computational Geomechanics	4
	20CV403T	Design of Hydraulic Structures	4
	20CV327T	Construction and Demolition Waste Management	4
	20CV319T	Railway Ports and Airport Engineering	4
	20CV321T	Air Pollution Engineering	4
	20CV401T	Finite element method	4
	20CV318T	Ground improvement technique	4

	Course Code	Course Name	Credits
Professional Core Electives	20CV325T	Open Channel Flow	4
	20CV408T	Traffic Engineering	4
	20CV328T	Solid Waste Management	4
	20CV323T	Advance design of reinforced concrete structures	4
	20CV410T	Earthquake Engineering	4
	20CV410P	Earthquake Engineering Lab	4
	20CV322T	Advance Hydrology	4
	20CV326T	Transportation Planning	4
	20CV329T	Environmental impact assessment	4
	20CV407T	Structural dynamics and vibration	4
	20CV402T	Geo-environmental engineering	4
	20CV316T	RS and GIS in Water Resources Engineering	4
	20CV404T	Construction Technology and	4
	20CV312T	Pavement Engineering	4
	20CV405T	Industrial wastewater treatment	4
	20CV409T	Prestressed Concrete Structures	4
	20CV416T	Soil Structure Interaction	4
	20CV411T	Hydrologic modelling and simulation	4
	20CV320T	Primavera / Building Information Modelling	4
	20CV414T	Pavement Management Systems	4
	20CV415T	Environmental data analysis	4
	20CV412T	Prefabricated Structures	4

Course structure of M. Tech Infrastructure Engineering

	Course Code	Course Name	Credits
Semester - 1	20CE511T	Infrastructure Planning and Engineering-I	4
	20CE512T	Project Management	3
	20CE512P	Project Management Lab	1
	20CE513P	Project Design Studio-I Lab	3
	20CE5XYT	Elective-I*(Department Elective)	3
	20CE5XYT	Elective – II# (Open Elective)	3
	20MA503T	Advanced Numerical Techniques & Computer Programming	4
	20MA503P	Advanced Numerical Techniques & Computer Programming Lab	1

	Course Code	Course Name	Credits
Semester - 2	20CE521T	Infrastructure Planning and Engineering-II	4
	20CE522T	Technology for Infrastructure Construction	4
	20CE523T	Infrastructure Financing and Management	3
	20CE524P	Project Design Studio-II Lab	3
	20CE5ZXT	Elective-III**(Department Elective)	3
	20CE5ZXT	Elective – IV## (Open Elective)	3
	20CE527T	Successful Research Development Program	2

Semester - 3	MT611	Seminar	5
	MT612	Project	14
	MT613	Industrial Training	-

Semester - 4	MT621	Seminar	5
	MT622	Project & Dissertation	24

Course structure of M. Tech Environment Engineering

	Course Code	Course Name	Credits
Semester - 1	MA503T	Advanced Numerical Techniques and Computer Programming	4
	MA503P	Advanced Numerical Techniques and Computer Programming L	1
	EN 501T	Environmental Chemistry and Microbiology	3
	EN 501P	Environmental Chemistry and Microbiology	1
	EN 502T	Air Pollution Modelling, Monitoring and Control	3
	EN 503T	Water Treatment, Distribution and Management	3
	EN XXT	Elective-I	3
	EN 505T	Solid and Hazardous Waste Management	3
	EN 5XXT	Elective-II	3

	Course Code	Course Name	Credits
Semester - 2	EN 510P	Advanced Environmental Engineering Laboratory	1.5
	EN 511T	Sewage treatment & Disposal System	4
	EN 512T	Industrial Wastewater Management	3
	EN 513T	Environmental Impact Assessment	3
	EN 514P	Environmental Simulation Laboratory	1.5
	EN 51XT	Elective III	3
	EN 5XXT	Elective IV	3
	CE 527T	Successful Research Program Development	2

	Course Code	Course Name	Credits
Semester - 3	MT611	Seminar	5
	MT612	Project	14
	MT613	Industrial Training	-

	Course Code	Course Name	Credits
Semester - 4	MT621	Seminar	5
	MT622	Project & Dissertation	24

Course structure of M. Tech Transportation Engineering

	Course Code	Course Name	Credits
Semester - 1	20MA503T	Advanced Numerical Techniques and Computer Programming	4
	20MA503P	Advanced Numerical Techniques and Computer Programming L	1
	20MCT501T	Traffic Engineering	3
	20MCT502T	Pavement Engineering	3
	20MCT503T	Transportation Planning	3
	20MCT504T	Elective-1	3
	20MCT505T	Elective-2	3
	20MCT501P	Traffic Engineering Laboratory	1
	20MCT502P	Pavement Engineering Laboratory	1

	Course Code	Course Name	Credits
Semester - 2	20MCT511T	Urban Transportation Systems Planning	3
	20MCT512T	Pavement Management Systems	3
	20MCT513T	Railway, Airport and Harbor Engineering	4
	20MCT514T	Highway Construction Practices	3
	20MCT515T	Elective-III	3
	20MCT516T	Elective-IV	3
	20MCT517P	Project Design Studio	1
	20MCT518T	Successful Research Program Development	2

	Course Code	Course Name	Credits
Semester - 3	20MCT521	Seminar	5
	20MCT522	Project	14
	20MCT523	Industrial Training	-

	Course Code	Course Name	Credits
Semester - 4	20MCT531	Seminar	5
	20MCT532	Project & Dissertation	24

Course structure of PhD in Civil Engineering

Course Code	Course Name	Credits
21CE707T	Finite Element Analysis	3
21CE708T	Modelling Technique in Water Resource Engg	3
21CE709T	Pavement Evaluation	3
21CE710T	Advanced Concrete Technology	3
21CE711T	Advanced Design of Steel Structures	3
21CE702T	Advanced Prestressed Concrete	3
21CE713T	Advanced Project Management	3

Course Code	Course Name	Credits
21CE708T	Geospatial Techniques for water resources	3
21CE714T	Rural Roads	3
21CE703T	Sustainable Construction Materials	3
21CE715T	Machine Learning Applications in Civil	3
21CE716T	Project Implementation, Built Environment and Sustainable Development	3
21CE717T	Special Problems in Highway Engineering	3

Course Code	Course Name	Credits
21CE718T	Ground Stabilization Methods	3
21CE719T	Earthquake Engineering Practice	3
21CE720T	Air Pollution and Control Engineering	3
21CE721T	Physical Modelling in Geotechnical Engineering	3