**Punjab Technical University, Jalandhar**

**COURSE STRUCTURE & SCHEME OF EVALUATION**

**M.Tech (Structural Engineering) - Full Time (Batch 2004 & Onwards)**

**Semester**

**Course Code**

**Course Name**

**Hours per Week**

**Evaluation**

**Credits**

**L**

**T**

**P**

**Internal**

**External**

First

CE-501

Dynamics of Structures

4

0

-

50

100

4

CE-502

Bridge Engineering

4

0

-

50

100

4

CE-503

Theory and Design of Plates and Grids

4

0

-

50

100

4

CE-504

Pre Stressed Concrete Structures

4

0

-

50

100

4

CE-505

Advanced Structural Analysis

4

0

-

50

100

4

Second

CE-506

Plastic Analysis and Design of Steel Structures

4

0

-

50

100

4

CE-507

Computer Aided Design Methods

4

0

-

50

100

4

CE-508

Industrial Structures

4

0

-

50

100

4

CE-

Elective-I

4

0

-

50

100

4

CE-

Elective-II

4

0

-

50

100

4

Third

CE-

Elective-III

4

0

-

50

100

4

CE-

Elective-IV

4

0

-

50

100

4

CE-580

Project

-

-

2

50

50

2

CE-590

Seminar

-

-

2

100

-

2

Fourth

CE-500

Dissertation/Thesis

Approved or Rejected

**Total Credits**

**52**

**Note-** Thesis (There will be a Viva -Voce test on the subject matter of the thesis. The Award shall be either 'Approved' or ' Rejected').

**List of Electives for Structural Engineering**

**ELECTIVE-I**

CE-509 Expert System in Civil Engineering

CE-510 Advanced Foundation Engineering

CE-511 Probabilistic Methods in Civil Engineering

**ELECTIVE-II**

CE-512 Instrumentation and Model Simulation

CE-513 Solid Mechanics

CE-514 Advanced Structure Design and Detailing

**ELECTIVE-III**

CE-515 Theory and Design of Shells

CE-516 Finite Element Methods

CE-517 Composite Materials

**ELECTIVE-IV**

CE-518 Construction and Maintenance Management

CE-519 High Rise Buildings

CE-520 Disaster Reduction and Management

**Punjab Technical University, Jalandhar**

**COURSE STRUCTURE & SCHEME OF EVALUATION**

**M.Tech (Environmental Science Engineering) - Full Time (Batch 2004 & Onwards)**

**Semester**

**Course Code**

**Course Name**

**Hours per Week**

**Evaluation**

**Credits**

**L**

**T**

**P**

**Internal**

**External**

First

ES-501

Remedial Course

4

0

-

50

100

4

ES-502

Physics of Environment

4

0

-

50

100

4

ES-503

Environmental Chemistry

4

0

-

50

100

4

ES-504

Water Pollution and Waste Water Treatment

4

0

-

50

100

4

ES-505

Air Pollution and Control

4

0

-

50

100

4

Second

ES-506

Waste Water Treatment

4

0

-

50

100

4

ES-507

Pollution Monitoring Techniques

4

0

-

50

100

4

ES-508

Industrial & Hazardous Waste Management

4

0

-

50

100

4

ES-

Elective-I

4

0

-

50

100

4

ES-

Elective-II

4

0

-

50

100

4

Third

ES-

Elective-III

4

0

-

50

100

4

ES-

Elective-IV

4

0

-

50

100

4

ES-580

Project

-

-

2

50

50

2

ES-590

Seminar

-

-

2

100

-

2

Fourth

ES-500

Dissertation/Thesis

Accepted or Rejected

**Total Credits**

**52**

**Note-** Thesis (There will be a Viva -Voce test on the subject matter of the thesis. The Award shall be either 'Approved' or ' Rejected').

**List of Electives for Environmental Science Engineering**

**ELECTIVE-I**

ES-509 Environmental Biotechnology

ES-510 Energy Technology & Alternative Energy Sources

ES-511 Mechanical Vibration & Noise Pollution

ES-512 Hydrology & Water Harvesting

**ELECTIVE-II**

ES-513 Energy through Water Utilization

ES-514 Microbial Processes in Environmental Management

ES-515 Fuel Combustion & Vehicular Pollution

ES-516 Soil Chemistry, Pollution & Control

**ELECTIVE-III**

ES-517 Environmental Auditing & Impact Assessment

ES-518 Biodegradation & Bioremediation

ES-519 Statistical Methods of Analysis & Simulation

ES-520 Environmental Engg. System Design

**ELECTIVE-IV**

ES-521 Environmental Standards & Laws

ES-522 Solid Waste Management

ES-523 Adsorption, Catalyst and Colloidal Engg

ES-524 Physiology & Toxicology

**Punjab Technical University, Jalandhar**

**COURSE STRUCTURE & SCHEME OF EVALUATION**

**M.Tech (Geotechnical Engg./ Soil Mechanics and Foundation Engineering) - Full Time/Part Time (Batch 2004 & Onwards)**

**Course Code**

**Course Name**

**Hours per Week**

**Evaluation**

**Credits**

**Core Courses**

**L**

**T**

**P**

**Internal**

**External**

CESE-1

Advance Soil Mechanics

3

1

-

50

100

4

CESE-2

Advance foundation Engineering

3

1

-

50

100

4

CESE-3

Soil Dynamics

3

1

-

50

100

4

CESE-4

Applied Soil mechanics

3

1

-

50

100

4

**Professional Courses (Electives)**

CESE-5

Analysis of settlement of Soil & Foundation

3

1

-

50

100

4

CESE-6

Shear Strength of Soils

3

1

-

50

100

4

CESE-7

Applications of Soil Mechanics

3

1

-

50

100

4

CESE-8

Analytical & Numerical Methods in Geomechnics

3

1

-

50

100

4

CESE-9

Ground Improvement

3

1

-

50

100

4

CESE-10

Sub Surface of Geophysical Exploration

3

1

-

50

100

4

CESE-11

Clay Mineralogy

3

1

-

50

100

4

CESE-12

Rock Mechanics

3

1

-

50

100

4

CESE-13

Strength of Materials

3

1

-

50

100

4

CESE-14

Design of Road Pavements

3

1

-

50

100

4

CESE-15

Geomechanics

3

1

-

50

100

4

CESE-16

Structural Design & Foundation Engineering

3

1

-

50

100

4

CESE-17

Traffic Engineering & Field Studies

3

1

-

50

100

4

CESE-18

Earthen Embankment

3

1

-

50

100

4

CESE-19

Case History in Geotechnical Engineering

3

1

-

50

100

4

CESE-20

Seminar

-

-

2

50

-

2

CESE-21

Project

-

-

2

50

100

2

**Total Credits**

**52**

Note: ----Each candidate is requires fulfilling the following requirements in order to be eligible for the award of Master of Technology in Civil (Geo -Tech) Degree**.**

 • 12 theory papers, subject to the requirement of four courses out of the list of Core Courses and 8 from the list of the Professional/Elective Courses.

 • Seminar & Design Project in third Semester.

 • Thesis (There will be Viva -Voce test on the subject matter of thesis. The Award shall be either 'Approved' or ' Rejected').