# M.Tech. in Civil Engineering with
## Construction Management Courses

### Academic Scheme
### Year 2022-23

**Year: 2022-23**

**Scheme for M.Tech. (Civil) with Construction Management Courses (Semester – I) Academic year 2022-23**

| Sr. No | Course Type | Code | Course Name | Course Plan for Each Week (Hrs) | | | Credits | Test 1 | Test 2 | Evaluation (Marks) | | | In Semester Evaluation | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Lectures | Laboratory | Tutorial | | | | End Semester | | End Semester Weightage (%) | | |
| | | | | | | | | | | Marks | Duration | | | |
| 1 | Core - I | PC-MTCM101 | Construction Organisation and Safety Management | 3 | -- | 01 | 4 | 20 | 20 | 100 | 3 | 60 | 25# | 125 |
| 2 | Core - II | PC-MTCM102 | Applied Statistics and Quantitative Techniques | 3 | -- | 01 | 4 | 20 | 20 | 100 | 3 | 60 | 25# | 125 |
| 3 | Program Elective - I | PEC-MTCM 101-103 | Programme Elective - I | 3 | -- | --- | 3 | 20 | 20 | 100 | 3 | 60 | | 100 |
| 4 | Program Elective - II | PEC-MTCM 111-113 | Programme Elective - II | 3 | -- | --- | 3 | 20 | 20 | 100 | 3 | 60 | | 100 |
| 5 | Program Elective - III | PEC-MTCM 121-123 | Programme Elective - III | 3 | -- | --- | 3 | 20 | 20 | 100 | 3 | 60 | -- | 100 |
| 6 | Core Lab I | PC-MTCML 501 | Advanced Material testing Lab | -- | 02 | --- | 1 | | | | | | 50 | 50 # |
| 7 | Core Lab II | PC-MTCML 502 | Geo-Informatics Lab | -- | 02 | --- | 1 | -- | -- | -- | -- | -- | 50 | 50 # |
| 8 | MLC | MC-PG01 | Research Methodology and IPR | 2 | | | 2 | 20 | 20 | 100 | 3 | 60 | | 100 |
| 9 | Audit-I | AU-PG01-02 | Audit | 2 | -- | --- | AU | 20 | 20 | 100 | 3 | 60 | | 100 |
| | Total | | | 19 | 04 | 02 | 21 | 120 | 120 | | | | 150 | 750 |

**NOTE - Test 1, Test 2 and end semester weightage marks will be added and shown as the theory marks in the mark sheet. Duration of Test 1, Test 2 is of 1 hour. For passing, Student must secure minimum 50% marks in each course with all heads of passing taken together and minimum 50% marks in the end semester examination.**

# Assessment criteria for laboratory/Tutorial work. i.e. weightage for assessment shall be as follows:

  (i)     Attendance in Laboratory/Tutorial = 20%,

  (ii)    Journal/Drawing sheet/Sketch book = 40%,

  (iii)    MCQ/Oral/Test = 40%.

**\*\*** Evaluation as per Swayam/NPTEL Re-examination as per institute guidelines. Department will offer online course as Program Elective or Open Elective courses subject to availability of a course on https://swayam.gov.in/, and NPTEL and availability of internal resources. Course will be offered for enrollment of at least 5 students opting for the course and maximum online courses can be 20% of total credit. The assesement criteria for these courses will be as per swayam / NPTEL.After evalauation grades will be awarded as per  institute criteria. 2, 3 Credits will be assigned for online courses of 8 and 12 weeks respectively.

| Sr. No. | Code | Programme Elective –I |
|---------|------|------------------------|
| 1. | PECMTCM 101 | Safety Management |
| 2. | PECMTCM 102 | Construction materials |
| 3. | PECMTCM 103\*\* | Accounting and Finance Management (Online Course) |

| Sr. No. | Code | Programme Elective - II |
|---------|------|--------------------------|
| 1. | PECMTCM 111 | Management of Infrastructure Services |
| 2. | PECMTCM 112 | Advanced Construction Techniques |
| 3. | PECMTCM 113 | Construction Marketing |

| Sr. No. | Code | Programme Elective –III |
|---------|------|--------------------------|
| 1. | MTCMPEC 121 | Repair, Rehabilitation and Retrofitting Techniques |
| 2. | MTCMPEC 122 | Appraisal & Implementation of Infrastructure Projects |
| 3. | MTCMPEC 123 | Management of Housing Projects |

| Sr. No. | Code | Audit -I Courses |
|---------|------|-------------------|
| 1 | AU-PG 01 | Project Planning and Management |
| 2 | AU-PG 02 | English for Research Paper Writing |

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**Year: 2022-23**

**Scheme for M.Tech. (Civil) with Construction Management Courses (Semester – II) Academic year 2022-23**

| Sr. No | Course Type | Code | Course Name | Course Plan for Each Week (Hrs) | | | Credits | Test 1 | Test 2 | Evaluation (Marks) | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Lectures | Laboratory | Tutorial | | | | End Semester | | End Semester Weightage (%) | In Semester Evaluation | |
| | | | | | | | | | | Marks | Duration | | | |
| 1 | Core - 3 | PC-MTCM201 | Project Monitoring and Control | 3 | -- | 01 | 4 | 20 | 20 | 100 | 3 | 60 | $25^{\#}$ | 125 |
| 2 | Core -4 | PC-MTCM202 | Project Appraisal, Planning and Scheduling | 3 | -- | 01 | 4 | 20 | 20 | 100 | 3 | 60 | $25^{\#}$ | 125 |
| 3 | Program Elective - IV | PEC-MTCM 201-204 | Programme Elective - IV | 3 | -- | --- | 3 | 20 | 20 | 100 | 3 | 60 | | 100 |
| 4 | Program Elective - V | PEC-MTCM 211-214 | Programme Elective - V | 3 | -- | --- | 3 | 20 | 20 | 100 | 3 | 60 | | 100 |
| 5 | Open Elective - I | OE-PG01-07 | Elective - VI | 3 | -- | --- | 3 | 20 | 20 | 100 | 3 | 60 | | 100 |
| 6 | Core Lab III | PC-MTCML 503 | Building Information Modeling Lab | -- | 02 | --- | 1 | | | | | | 50 | 50 # |
| 7 | Core Lab IV | PC-MTCML 504 | Project Management Lab | -- | 02 | --- | 1 | -- | -- | -- | -- | -- | 50 | 50 # |
| 8 | Core - 5 | PC-MTCM171 | Mini Project | 2 | | | 2 | | | | | | $100^{*}$ | $100^{*}$ |
| 9 | Audit-II | AU-PG03-04 | Audit | 2 | -- | --- | AU | 20 | 20 | 100 | 3 | 60 | | 100 |
| | **Total** | | | **19** | **04** | **02** | **21** | **100** | **100** | | | **300** | **250** | **750** |

**NOTE - Test 1, Test 2 and end semester weightage marks will be added and shown as the theory marks in the mark sheet. Duration of Test 1, Test 2 is of 1 hour. For passing, Student must secure minimum 50% marks in each course with all heads of passing taken together and minimum 50% marks in the end semester examination.**

# Assessment criteria for laboratory/Tutorial work. i.e. weightage for assessment shall be as follows:

* 50 marks for report and 50 marks for presentation, Examined by supervisor and at least one internal examiner.

    (i)      Attendance in Laboratory/Tutorial = 20%,

    (ii)     Journal/Drawing sheet/Sketch book = 40%,

    (iii)    MCQ/Oral/Test = 40%.

** Evaluation as per Swayam/NPTEL Re-examination as per institute guidelines. Department will offer online course as Program Elective or Open Elective courses subject to availability of a course on https://swayam.gov.in/, and NPTEL and availability of internal resources. Course will be offered for enrollment of at least 5 students opting for the course and maximum online courses can be 20% of total credit. The assesement criteria for these courses will be as per swayam / NPTEL.After evalauation grades will be awarded as per institute criteria. 2, 3 Credits will be assigned for online courses of 8 and 12 weeks respectively.

| Sr. No. | Code | Elective -IV |
|---------|------|--------------|
| 1. | MTCMPEC 201 | Legal Aspects in Construction |
| 2. | MTCMPEC 202 | Risk and Value Management |
| 3. | MTCMPEC 203 | International Construction Business |
| 4. | MTCMPEC 204** | Infrastructure Planning and Managements (Online Course) |

| Sr. No. | Code | Elective – V |
|---------|------|--------------|
| 1. | MTCMPEC 211 | Management of Construction Resources |
| 2. | MTCMPEC 212 | Total Quality Management in Construction |
| 3. | MTCMPEC 213 | International Contracting |
| 4. | MTCMPEC 214** | Modern Construction Materials (Online Course) |

| Sr. No. | Code | Open Elective Courses, Elective-VI |
|---------|------|-----------------------------------|
| 1. | OE-PG01 | Business Analytics |
| 2 | OE-PG02* | Industrial Safety Engineering (Online Course) |
| 3 | OE-PG03 | Operations Research |
| 4 | OE-PG04 | Cost Management of Engineering Projects |

| Sr. No. | Code | Audit -II Courses |
|---------|------|-------------------|
| 1 | AU-PG 03 | Disaster Management |
| 2 | AU-PG 04 | Stress Management by Yoga |

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**Year: 2022-23**

**Scheme for M. Tech. (Civil) with Construction Management Courses (Semester – III) Academic year 2022-23**

| Sr. No | Course Type | Code | Course Name | Course Plan for Each Week (Hrs) | | | Credits | Test 1 | Test 2 | Evaluation (Marks) | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Lectures | Laboratory | Tutorial | | | | End Semester | | End Semester Weightage (%) | In Semester Evaluation | | | |
| | | | | | | | | | | Marks | Duration | | Report | Seminar | | |
| 1 | Dissertation Phase 1 | PC-MTCM311 | Seminar on Literature Review | | | 4 + 12$^\$$ | 6 | | | Seminar on Literature Review | | | | 50 | 50 | 100* |
| 2 | | | | | | | 6 | | | Seminar Stage-I | | | | 50 | 50 | 100* |
| | **Total** | | | **--** | **--** | **16** | **12** | | | | | | | **100** | **100** | **200** |

\* Examined by supervisor and at least one internal examiner. $^\$$Contact hours with mentor/supervisor/guide=4, Self learning hours=12

**For passing, Student must secure minimum 50% marks in each Course with all head of passing taken together and minimum 50% marks in the end semester examination.**

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**Year: 2022-23**

**Scheme for M. Tech. (Civil) with Construction Management Courses (Semester – IV) Academic year 2022-23**

| Sr. No | Course Type | Code | Course Name | Course Plan for Each Week (Hrs) | | | Credits | Test 1 | Test 2 | End Semester | | End Semester Weightage (%) | In Semester Evaluation | | Total |
| | | | | Lectures | Laboratory | Tutorial | | | | Marks | Duration | | Report | Seminar | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dissertation Phase 2 | PC-MTCM411 | Seminar Stage – II Dissertation Viva-Voce | --- | --- | 4 + 12$^\$$ | 6 | | | Seminar (Pre-Synopsis) | | | 50* | 50* | 100 |
| 2 | | | | | | | 10 | | | Dissertation & Viva-voce | | | 100** | 50** | 150 |
| | **Total** | | | **---** | **---** | **16** | **16** | | | | | | **150** | **100** | **250** |

\*      Examined by supervisor and at least one internal examiner
\*\*     Examined by supervisor and one approved external examiner. $^\$$Contact hours with mentor/supervisor/guide=4, Self learning hours=12

**For passing, Student must secure minimum 50% marks in each Course with all head of passing taken together and minimum 50% marks in the end semester examination.**