



# DETAIL TEACHING SCHEME

SCHOOL OF ENGINEERING	PROGRAM: M.TECH – STRUCTURAL ENGINEERING
ACADEMIC YEAR - 2021-22	SEMESTER – III (BATCH: 2020-22)
DEFINITION OF ONE CREDIT: <b>1. Lecture(L):</b> 1 hour / week / semester, <b>2. Practical(P):</b> 2 hours / week / semester, <b>3. Tutorial(T):</b> 2 hours / week / semester	

TEACHING SCHEME										
Course Code	Course Name	Teaching Hours			SSH	Credits	Audit course	CIE	PSEE	Remarks if any
		Lecture	Tutorial	Practical						
SE301	Computer Aided Structural Analysis & Design Lab	0	0	4	6	2	N	Y	Y	
SE302	Seminar	0	0	0	0	3	N	Y	Y	
SEDP1	Dissertation Phase - I	0	0	0	0	20	N	Y	Y	
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>6</b>	<b>25</b>				
	<b>Total Teaching Hours</b>	<b>25</b>								

N- No	CIE – Continuous internal evaluation
Y – Yes	PSEE – Practical semester end examination including ITD, Dissertation, Industrial project, Industrial training etc..
	SSH – Self Study Hours

<b>Course Title</b>	<b>COMPUTER AIDED STRUCTURAL ANALYSIS AND DESIGN LAB</b>
<b>Course Code</b>	<b>SE301</b>
<b>Course Credits</b>	Theory :00
	Practical :02
	Tutorial :00
	Credits :02

### Course Learning Outcomes:

On the completion of the course, students will be able to:

- **Use** industry standard software in a professional set up.
- **Understand** the elements of finite element modeling, specification of loads and boundary condition, performing analysis and interpretation of results for final design.
- **Perform** analysis and interpretation of results for final design.
- **Develop** customized design automation tools.

### Detailed Syllabus

Sr. No.	Name of chapter & details	Hours Allotted
<b>SECTION-I</b>		
1.	<b>Application:</b> Excel spread sheets for the design of (1) Structural elements like slabs, beams, columns, isolated, combined and raft footings, steel connections and members (2) Structures like water tank, retaining walls, Portal frame, Gantry girder, Plate girder etc.	<b>06</b>
2.	<b>Software Usage:</b> Modelling, analysis and design using professional software like STAAD, SAP, ETABS.	<b>10</b>
3.	<b>Drafting:</b> Application of Drafting software like AutoCAD.	<b>05</b>
<b>Total</b>		<b>21</b>
<b>SECTION-II</b>		
4.	Structural Analysis of 2D and 3D Trusses, Portal Frames.	<b>08</b>
5.	Structural Analysis of Continuous Beams using for different types of loadings and support conditions and Relief Measures.	<b>06</b>

6.	FE Analysis of Framed structures due to Seismic forces using modal dynamics concept, FE Analysis of Slab panel resting on column supports- Drop Panels, Capitals.	05
<b>Total</b>		<b>21</b>

**Term Work:** Term work shall be based on the above-mentioned course content.

### Instructional method and Pedagogy:

- Lectures will be conducted with the aid of multi-media projector, black board, OHP etc.
- Assignments based on course content will be given to the students at the end of each unit/topic and will be evaluated at regular interval.
- Surprise tests/Quizzes/Seminar/Tutorials will be conducted.
- The course includes tutorials, where students have an opportunity to build an appreciation for the concepts being taught in lectures.

### Reference Books:

- AutoCAD 2012 & AutoCAD Lt 2012, Wiley India Pvt Ltd.
- Learn Yourself STAAD Pro V8i, LAP Lambert Academic Publishing.
- Etabs Manual CSI Berkeley.
- SAP Manual CSI Berkeley.
- Munir Ahmad “Working on STAAD Pro 2007”.

<b>Course Title</b>	<b>Dissertation Phase - I</b>
<b>Course Code</b>	<b>SEDP1</b>
<b>Course Credits</b>	Theory :00
	Practical :00
	Tutorial :00
	Credits :20

### Course Learning Outcomes:

On the completion of the course, students will be able to:

- **Recognize** various opportunities within the Civil Engineering field.
- **Solve** specific important problems on a level worthy of the academic master's degree.
- Practice management of individual research projects.
- **Write** reports & research papers and **Express** their work by audio/visual presentation.

### Instructional method and Pedagogy:

- The students need to prepare seminar report on a topic relevant to his course and it should be other than Dissertation Project.
- Students have to do Dissertation under guidance of faculty assigned based on preferences provided by student and have to submit their Dissertation definition and planning at the starting of the semester and mid evaluation is done before the end of the semester. Students have to submit status of work at the end of semester and Dissertation continuous.
- You will be required to make professional presentations of your work to diverse. Audiences. The goal of this class is for you to become better at doing so.
- The overall goal is broken down into three key objectives. The first is to introduce you to ideas, methods and techniques that you can use to improve the content and presentation of scientific seminars.
- The second objective is to practice these methods by developing and presenting a unique Seminar of your own.
- Finally, you will learn by example by providing feedback to each other.