Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Computer Application in Structural Engineering (CASE Lab)

IV-B.Tech – I Semester

Mr. C . Vivek Kumar / Mr.V Ramesh

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

CASE LAB

Course File Check List

S.No.	Name of the Format	Page No.
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Gokaraju Rangaraju Institute of Engineering and Technology (Autonomous)

Bachupally, Kukatpally, Hyderabad – 500 090. (040) 6686 4440

Time table

	1	2	3	4	5	6	7
Monday	CASELAB(A2)11.00-1.30				CASELAB(B2)02.30-5.00		
Tuesday							
Wednesday	CASELAB(A1)11.00-1.30				CASELAB(B1)02.30-5.00		
Thursday	CASELAB(B1)11.00-1.30						
Friday					CASELAB(A1)02.30-5.00		
Saturday	CASELAB(B2)02.30-5.00				CASELAB(A2)02.30-5.00		

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Programme Educational Objectives (PEO's)

1. Graduates of the programme will be successful career in technical and professional career.
2. Graduates of the programme will have proficiency in solving real time Civil Engineering projects.
3. Graduates of the programme will continue to engage in lifelong learning with ethical and social responsibility.

Program Outcomes (PO's)

Graduates of the Civil Engineering programme will be able to

a. apply knowledge of mathematics, science and fundamentals of Civil Engineering.
b. analyse problem and interpret the data.
c. design a system component, or process to meet desired needs in Civil Engineering within realistic constraints.
d. identify, formulate, analyse and interpret data to solve Civil Engineering problems.
e. use modern engineering tools such as CAD and GIS for the Civil Engineering practice.
f. understand the impact of engineering solutions in a global, economic and societal context.
g. understand the effect of Civil Engineering solutions on environment and to demonstrate the need for sustainable development.
h. understanding of professional and ethical responsibility.
i. work effectively as an individual or in a team and to function on multi-disciplinary context.
j. communicate effectively with engineering community and society.
k. demonstrate the management principles in Civil Engineering projects.
l. recognize the need for and an ability to engage in life-long learning.

Program Specific Outcomes (PSO's)

PSO1: Recognize the need for a sustainable environment and design smart infrastructure considering the global challenges.

PSO2: Create and develop innovative designs with new era materials through research and development.

Signature of HOD

Date:

Signature of faculty

Date:

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(Autonomous)

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COURSE OBJECTIVES

Academic **Y**ear : 2021-22

Semester : I

Name of the Program: B.Tech Civil Engg. Year: III Section: A & B

Course/Subject: Design of Concrete Structures-I Course Code: GR18A3003

Name of the Faculty: Dr.T. Srinivas / Mr.K. VEERA BABU Dept.: Civil Engineering

Designation: Professor / Assistant Professor

On completion of this Subject/Course the student shall be able to:

S.No	Objectives
1	Analyze and Design the RCC beams with different supports and loads.
2	Analyze and Design the RCC multi- storied buildings with different load combinations
3	Analyze and Design the RCC water tanks of different shapes
4	Analyze and Design the Steel beams of different sections with various load combinations
5	Analyze and Design the trusses of different sections with various load combinations

Signature of HOD Signature of faculty

Date: Date:

Gokaraju Rangaraju Institute of Engineering and Technology (Autonomous)

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COURSE OUTCOMES

Academic **Y**ear : 2021-2022

Semester : I

Name of the Program: B.Tech Year: IV Section: A1

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

On completion of this Subject/Course the student should be able to:

S.No	Outcomes
1	Analyze and Design the RCC beams with different supports and loads.
2	Analyze and Design the RCC multi- storied buildings with different load combinations
3	Analyze and Design the RCC water tanks of different shapes
4	Analyze and Design the Steel beams of different sections with various load combinations
5	Analyze and Design the trusses of different sections with various load combinations

Signature of HOD Signature of faculty

Date: Date:

GOKARAJU RANGARAJU

INSTITUTE OF ENGINEERING AND TECHNOLOGY

IV Year B.Tech. CE – I Semester

T	L	P	C
0	0	2	2

(GR18A4011) COMPUTER APPLICATIONS IN STRUCTURAL ENGINEERING (CASE) LAB

Task1: Introduction to STAAD Pro Software

Task2: Design of beams for various supports (SSB,OHB,CT and FX) with PL and UDL

Task3: Design of beams for various supports (SSB,OHB,CT and FX) with UVL and ML

Task4: Analysis and Design of multi-storied building (2D frame)

Task5: Analysis and Design of multi-storied building (3D frame) with DL and LL

Task6: Analysis and Design of multi-storied building (3D frame) with DL LL and WL

Task7: Analysis and Design of multi-storied building (3D frame) with DL LL and EL

Task8: Analysis and Design of multi-storied building (3D frame) with plates

Task9: Analysis and Design of multi-storied building (3D frame) and Result analysis

Task10: Analysis and Design of RCC Rectangular Over Head Tank

Task11: Analysis and Design of RCC Circular Over Head Tank

Task12: Analysis and Design of beams for various cross section (I, C, T, L and composite sections)

Task13: Analysis and Design of various Steel Tubular Trusses

Task14: Analysis and Design of Industrial buildings with various Trusses

Task15: Analysis and Design of Steel Over Head Tank

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SCHEDULE OF INSTRUCTIONS

COURSE PLAN

Academic **Y**ear : 2021-2022

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A1

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Ex. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcomes Nos.	References (Text Book, Journal…) Page Nos.: ____to ____
1.	20-08-2021	3	Introduction to STAAD Pro Software	COB's:1,2 ,3,4 & 5 CO's:3	Manual
2.	27-08-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with PL and UDL	COB's:1 CO's:1	
3.	03-09-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with UVL and ML	COB's:1 CO's:1	
4.	17-09-2021	3	Analysis and Design of multi-storied building (2D frame)	COB's:1 CO's:1	
5.	29-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL and LL	COB's:1 CO's:1	
6.	01-10-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and WL	COB's:2 CO's:2	
7.	08-10-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and EL	COB's:2 CO's:2	
8.	09-10-2021	3	Analysis and Design of multi-storied building (3D frame) with	COB's:2 CO's:3	

			plates		
9.	22-10-2021	3	Analysis and Design of multi-storied building (3D frame) and Result analysis	COB's:2 CO's:3	
10.	29-10-2021	3	Analysis and Design of RCC Rectangular Over Head Tank	COB's:2 CO's:3	
11.	05-11-2021	3	Analysis and Design of RCC Circular Over Head Tank	COB's:2 CO's:3	
12.	12-11-2021	3	Analysis and Design of beams for various cross section (I, C, T, L and composite sections)	COB's:2 CO's:3	
13.	19-11-2021	3	Analysis and Design of various Steel Tubular Trusses	COB's:2 CO's:3	
14.	26-11-2021	3	Analysis and Design of Industrial buildings with various Trusses	COB's:2 CO's:3	
15.	27-11-2021	3	Analysis and Design of Steel Over Head Tank	COB's:2 CO's:3	
16.	03-12-2021	3	Revision	COB's:2 CO's:3	

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Signature of faculty

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3. MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

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SCHEDULE OF INSTRUCTIONS
COURSE PLAN

Academic **Y**ear : 2021-2022

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A2

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Ex No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcomes Nos.	References (Text Book, Journal…) Page Nos.: ____to ____
1.	21-08-2021	3	Introduction to STAAD Pro Software	COB's:1,2 ,3,4 & 5 CO's:3	Manual
2.	28-08-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with PL and UDL	COB's:1 CO's:1	
3.	04-09-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with UVL and ML	COB's:1 CO's:1	
4.	11-09-2021	3	Analysis and Design of multi-storied building (2D frame)	COB's:1 CO's:1	
5.	18-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL and LL	COB's:1 CO's:1	
6.	25-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and WL	COB's:2 CO's:2	
7.	08-10-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and EL	COB's:2 CO's:2	
8.	09-10-2021	3	Analysis and Design of multi-storied building (3D frame) with plates	COB's:2 CO's:3	

9.	23-10-2021	3	Analysis and Design of multi-storied building (3D frame) and Result analysis	COB's:2 CO's:3	
10.	30-10-2021	3	Analysis and Design of RCC Rectangular Over Head Tank	COB's:2 CO's:3	
11.	06-11-2021	3	Analysis and Design of RCC Circular Over Head Tank	COB's:2 CO's:3	
12.	13-11-2021	3	Analysis and Design of beams for various cross section (I, C, T, L and composite sections)	COB's:2 CO's:3	
13.	20-11-2021	3	Analysis and Design of various Steel Tubular Trusses	COB's:2 CO's:3	
14.	26-11-2021	3	Analysis and Design of Industrial buildings with various Trusses	COB's:2 CO's:3	
15.	27-11-2021	3	Analysis and Design of Steel Over Head Tank	COB's:2 CO's:3	
16.	04-12-2021	3	Revision	COB's:2 CO's:3	

Signature of HOD

Signature of faculty

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SCHEDULE OF INSTRUCTIONS

COURSE PLAN

Academic **Y**ear : 2021-2022

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: B1

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Ex No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcomes Nos.	References (Text Book, Journal…) Page Nos.: ____to ____
1.	17-08-2021	3	Introduction to STAAD Pro Software	COB's:1,2 ,3,4 & 5 CO's:3	Manual
2.	24-08-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with PL and UDL	COB's:1 CO's:1	
3.	31-08-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with UVL and ML	COB's:1 CO's:1	
4.	07-09-2021	3	Analysis and Design of multi-storied building (2D frame)	COB's:1 CO's:1	
5.	14-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL and LL	COB's:1 CO's:1	
6.	21-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and WL	COB's:2 CO's:2	
7.	28-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and EL	COB's:2 CO's:2	
8.	05-10-2021	3	Analysis and Design of multi-storied building (3D frame) with	COB's:2 CO's:3	

			plates		
9.	12-10-2021	3	Analysis and Design of multi-storied building (3D frame) and Result analysis	COB's:2 CO's:3	
10.	19-10-2021	3	Analysis and Design of RCC Rectangular Over Head Tank	COB's:2 CO's:3	
11.	26-10-2021	3	Analysis and Design of RCC Circular Over Head Tank	COB's:2 CO's:3	
12.	02-11-2021	3	Analysis and Design of beams for various cross section (I, C, T, L and composite sections)	COB's:2 CO's:3	
13.	09-11-2021	3	Analysis and Design of various Steel Tubular Trusses	COB's:2 CO's:3	
14.	16-11-2021	3	Analysis and Design of Industrial buildings with various Trusses	COB's:2 CO's:3	
15.	23-11-2021	3	Analysis and Design of Steel Over Head Tank	COB's:2 CO's:3	
16.	30-11-2021	3	Revision	COB's:2 CO's:3	

Signature of HOD

Signature of faculty

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SCHEDULE OF INSTRUCTIONS

COURSE PLAN

Academic **Y**ear : 2021-2022

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: B2

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Ex No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcomes Nos.	References (Text Book, Journal…) Page Nos.: ____to ____
1.	18-08-2021	3	Introduction to STAAD Pro Software	COB's:1,2 ,3,4 & 5 CO's:3	Manual
2.	25-08-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with PL and UDL	COB's:1 CO's:1	
3.	01-09-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with UVL and ML	COB's:1 CO's:1	
4.	08-09-2021	3	Analysis and Design of multi-storied building (2D frame)	COB's:1 CO's:1	
5.	15-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL and LL	COB's:1 CO's:1	
6.	22-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and WL	COB's:2 CO's:2	
7.	29-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and EL	COB's:2 CO's:2	
8.	06-10-2021	3	Analysis and Design of multi-storied building (3D frame) with	COB's:2 CO's:3	

			plates		
9.	14-10-2021	3	Analysis and Design of multi-storied building (3D frame) and Result analysis	COB's:2 CO's:3	
10.	20-10-2021	3	Analysis and Design of RCC Rectangular Over Head Tank	COB's:2 CO's:3	
11.	27-10-2021	3	Analysis and Design of RCC Circular Over Head Tank	COB's:2 CO's:3	
12.	10-11-2021	3	Analysis and Design of beams for various cross section (I, C, T, L and composite sections)	COB's:2 CO's:3	
13.	17-11-2021	3	Analysis and Design of various Steel Tubular Trusses	COB's:2 CO's:3	
14.	01-12-2021	3	Analysis and Design of Industrial buildings with various Trusses	COB's:2 CO's:3	
15.	07-12-2021	3	Analysis and Design of Steel Over Head Tank	COB's:2 CO's:3	
16.	08-12-2021	3	Revision	COB's:2 CO's:3	
17.	07-12-2021	3	Revision	COB's:1,2 ,3,4 & 5 CO's:3	

Signature of HOD

Signature of faculty

Date:

Date:

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SCHEDULE OF INSTRUCTIONS

UNIT PLAN

Academic **Y**ear : 2021-2022

Semester : II

Name of the Program: B.Tech … …… Year: IV …….. Section: A1

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Ex. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcomes Nos.	References (Text Book, Journal…) Page Nos.: ____to ____
1.	20-08-2021	3	Introduction to STAAD Pro Software	COB's:1,2 ,3,4 & 5 CO's:3	Manual
2.	27-08-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with PL and UDL	COB's:1 CO's:1	
3.	03-09-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with UVL and ML	COB's:1 CO's:1	
4.	17-09-2021	3	Analysis and Design of multi-storied building (2D frame)	COB's:1 CO's:1	
5.	29-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL and LL	COB's:1 CO's:1	
6.	01-10-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and WL	COB's:2 CO's:2	
7.	08-10-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and EL	COB's:2 CO's:2	
8.	09-10-2021	3	Analysis and Design of multi-storied building (3D frame) with	COB's:2 CO's:3	

			plates		
9.	22-10-2021	3	Analysis and Design of multi-storied building (3D frame) and Result analysis	COB's:2 CO's:3	
10.	29-10-2021	3	Analysis and Design of RCC Rectangular Over Head Tank	COB's:2 CO's:3	
11.	05-11-2021	3	Analysis and Design of RCC Circular Over Head Tank	COB's:2 CO's:3	
12.	12-11-2021	3	Analysis and Design of beams for various cross section (I, C, T, L and composite sections)	COB's:2 CO's:3	
13.	19-11-2021	3	Analysis and Design of various Steel Tubular Trusses	COB's:2 CO's:3	
14.	26-11-2021	3	Analysis and Design of Industrial buildings with various Trusses	COB's:2 CO's:3	
15.	27-11-2021	3	Analysis and Design of Steel Over Head Tank	COB's:2 CO's:3	
16.	03-12-2021	3	Revision	COB's:2 CO's:3	

Signature of HOD

Signature of faculty

Date:

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SCHEDULE OF INSTRUCTIONS

UNIT PLAN

Academic **Y**ear : 2021-2022

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A2

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Ex No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcomes Nos.	References (Text Book, Journal…) Page Nos.: ____to ____
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4.	11-09-2021	3	Analysis and Design of multi-storied building (2D frame)	COB's:1 CO's:1	
5.	18-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL and LL	COB's:1 CO's:1	
6.	25-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and WL	COB's:2 CO's:2	
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9.	23-10-2021	3	Analysis and Design of multi-storied building (3D frame) and Result analysis	COB's:2 CO's:3	
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11.	06-11-2021	3	Analysis and Design of RCC Circular Over Head Tank	COB's:2 CO's:3	
12.	13-11-2021	3	Analysis and Design of beams for various cross section (I, C, T, L and composite sections)	COB's:2 CO's:3	
13.	20-11-2021	3	Analysis and Design of various Steel Tubular Trusses	COB's:2 CO's:3	
14.	26-11-2021	3	Analysis and Design of Industrial buildings with various Trusses	COB's:2 CO's:3	
15.	27-11-2021	3	Analysis and Design of Steel Over Head Tank	COB's:2 CO's:3	
16.	04-12-2021	3	Revision	COB's:2 CO's:3	

Signature of HOD

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SCHEDULE OF INSTRUCTIONS

UNIT PLAN

Academic **Y**ear : 2021-2022

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: B1

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

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2.	24-08-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with PL and UDL	COB's:1 CO's:1	
3.	31-08-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with UVL and ML	COB's:1 CO's:1	
4.	07-09-2021	3	Analysis and Design of multi-storied building (2D frame)	COB's:1 CO's:1	
5.	14-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL and LL	COB's:1 CO's:1	
6.	21-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and WL	COB's:2 CO's:2	
7.	28-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and EL	COB's:2 CO's:2	
8.	05-10-2021	3	Analysis and Design of multi-storied building (3D frame) with	COB's:2 CO's:3	

			plates		
9.	12-10-2021	3	Analysis and Design of multi-storied building (3D frame) and Result analysis	COB's:2 CO's:3	
10.	19-10-2021	3	Analysis and Design of RCC Rectangular Over Head Tank	COB's:2 CO's:3	
11.	26-10-2021	3	Analysis and Design of RCC Circular Over Head Tank	COB's:2 CO's:3	
12.	02-11-2021	3	Analysis and Design of beams for various cross section (I, C, T, L and composite sections)	COB's:2 CO's:3	
13.	09-11-2021	3	Analysis and Design of various Steel Tubular Trusses	COB's:2 CO's:3	
14.	16-11-2021	3	Analysis and Design of Industrial buildings with various Trusses	COB's:2 CO's:3	
15.	23-11-2021	3	Analysis and Design of Steel Over Head Tank	COB's:2 CO's:3	
16.	30-11-2021	3	Revision	COB's:2 CO's:3	

Signature of HOD

Signature of faculty

Date:

Date:

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICSCOVERED, IF ANY, MAY ALSO BE SPECIFIED IN BOLD
3. MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

Gokaraju Rangaraju Institute of Engineering and Technology
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SCHEDULE OF INSTRUCTIONS

UNIT PLAN

Academic **Y**ear : 2021-2022

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: B2

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Ex No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcomes Nos.	References (Text Book, Journal…) Page Nos.: ____to ____
1.	18-08-2021	3	Introduction to STAAD Pro Software	COB's:1,2 ,3,4 & 5 CO's:3	Manual
2.	25-08-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with PL and UDL	COB's:1 CO's:1	
3.	01-09-2021	3	Design of beams for various supports (SSB,OHB,CT and FX) with UVL and ML	COB's:1 CO's:1	
4.	08-09-2021	3	Analysis and Design of multi-storied building (2D frame)	COB's:1 CO's:1	
5.	15-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL and LL	COB's:1 CO's:1	
6.	22-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and WL	COB's:2 CO's:2	
7.	29-09-2021	3	Analysis and Design of multi-storied building (3D frame) with DL LL and EL	COB's:2 CO's:2	

8.	06-10-2021	3	Analysis and Design of multi-storied building (3D frame) with plates	COB's:2 CO's:3	
9.	14-10-2021	3	Analysis and Design of multi-storied building (3D frame) and Result analysis	COB's:2 CO's:3	
10.	20-10-2021	3	Analysis and Design of RCC Rectangular Over Head Tank	COB's:2 CO's:3	
11.	27-10-2021	3	Analysis and Design of RCC Circular Over Head Tank	COB's:2 CO's:3	
12.	10-11-2021	3	Analysis and Design of beams for various cross section (I, C, T, L and composite sections)	COB's:2 CO's:3	
13.	17-11-2021	3	Analysis and Design of various Steel Tubular Trusses	COB's:2 CO's:3	
14.	01-12-2021	3	Analysis and Design of Industrial buildings with various Trusses	COB's:2 CO's:3	
15.	07-12-2021	3	Analysis and Design of Steel Over Head Tank	COB's:2 CO's:3	
16.	08-12-2021	3	Revision	COB's:2 CO's:3	
17.	07-12-2021	3	Revision	COB's:1,2 ,3,4 & 5 CO's:3	

Signature of HOD

Signature of faculty

Date:

Date:

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICSCOVERED, IF ANY, MAY ALSO BE SPECIFIED IN BOLD
3. MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

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LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 05/07/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A1

Course/Subject: Case Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 1 Duration of Lesson: 3hrs …….

Lesson Title: Introduction to STAAD Pro Software

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Explain, why Staad Lab software can be used?.

TEACHING AIDS : White board and Laptop
TEACHING POINTS :

GUI, Co-ordinates system and types of structures.

Assignment / Questions:

1. What is the difference between GUI and co ordinate system? (COB's:1 & CO's:1)
2. Classify the types of structures? (COB's:1 & CO's:1)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos..

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 07/07/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A1

Course/Subject: Staad Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 2 Duration of Lesson: 3hrs …….

Lesson Title: Design of beams for various supports (SSB,OHB,CT and FX) with PL and UDL

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Analyze the various beams like SSB, OHB for the different support conditions.
2. Design the various beams like SSB, OHB for the different support conditions.

TEACHING AIDS : White board and Laptop

TEACHING POINTS :

SSB and OHB with simple, hinged and fixed supports.

Assignment / Questions:

1. Analyze and design the simply supported beam with different loading? (COB's:1 & CO's:1)
2. Analyze and design the overhanging beam with different loading? (COB's:1 & CO's:1)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos..

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 12/07/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 3 Duration of Lesson: 3hrs …….

Lesson Title: Design of beams for various supports (SSB,OHB,CT and FX) with UVL and ML

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1 Analyze the various beams like CT and Fixed for the different support conditions.

2 Design the various beams like CT and Fixed for the different support conditions.

TEACHING AIDS : White board and Laptop

TEACHING POINTS :

CT and Fixed with simple, hinged and fixed supports.

Assignment / Questions:

1 Analyze and design the continuous beam with different loading? (COB's:1 & CO's:1)

2 Analyze and design the fixed beam with different loading? (COB's:1 & CO's:1)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos..

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 14/07/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A1

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 4 Duration of Lesson: 3hrs …….

Lesson Title: Analysis and Design of multi-storied building (2D frame)

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1 Analyze 2D frame with load combination of DL+LL.

2 Design 2D frame with load combination of DL+LL.

TEACHING AIDS : White board and Laptop
TEACHING POINTS :

2D frame with load combination of DL+LL.

Assignment / Questions:

1 Analyze and design the 2D frame with load combination of DL+LL? (COB's:2 & CO's:2)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos..

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 19/07/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A1

Course/Subject: Staad Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 5 Duration of Lesson: 3hrs …….

Lesson Title: Analysis and Design of multi-storied building (3D frame) with DL and LL

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1 Analyze 3D frame with load combination of DL+LL.

2 Design 3D frame with load combination of DL+LL.

TEACHING AIDS : White board and Laptop
TEACHING POINTS :

3D frame with load combination of DL+LL.

Assignment / Questions:

1 Analyze and design the 3D frame with load combination of DL+LL? (COB's:2 & CO's:3)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos..

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 21/07/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A1

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 6 Duration of Lesson: 3hrs …….

Lesson Title: Analysis and Design of multi-storied building (3D frame) with DL, LL and WL

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1 Analyze 3D frame with load combination of DL+LL+WL.

2 Design 3D frame with load combination of DL+LL+WL.

TEACHING AIDS : White board and Laptop
TEACHING POINTS :

3D frame with load combination of DL+LL+WL.

Assignment / Questions:

1 Analyze and design the 3D frame with load combination of DL+LL+WL? (COB's:2 & CO's:3)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos..

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 26/07/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A1

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 7 Duration of Lesson: 3hrs …….

Lesson Title: Analysis and Design of multi-storied building (3D frame) with DL, LL and EL

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1 Analyze 3D frame with load combination of DL+LL+EL.

1 Design 3D frame with load combination of DL+LL+EL.

TEACHING AIDS : White board and Laptop
TEACHING POINTS :

3D frame with load combination of DL+LL+EL.

Assignment / Questions:

1 Analyze and design the 3D frame with load combination of DL+LL+EL? (COB's:2 & CO's:3)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos..

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 28/07/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A1

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 8 Duration of Lesson: 3hrs …….

Lesson Title: Analysis and Design of multi-storied building (3D frame) with plates

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1 Analyze 3D frame with plates with load combination of DL+LL.

2 Design 3D frame with plates with load combination of DL+LL.

TEACHING AIDS : White board and Laptop
TEACHING POINTS :

3D frame with plates with load combination of DL+LL.

Assignment / Questions:

1 Analyze and design the 3D frame with plates with load combination of DL+LL? (COB's:2 & CO's:3)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos..

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 2/08/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A

Course/Subject: Staad Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 9 Duration of Lesson: 3hrs …….

Lesson Title: Analysis and Design of multi-storied building (3D frame) and Result analysis

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1 Organize the results in systematic manner.

2 Justify the results compared to manual design.

TEACHING AIDS : White board and Laptop
TEACHING POINTS :

3D frame with plates with load combination of DL+LL.

Assignment / Questions:

1 Analyze and design the 3D frame with plates with load combination of DL+LL and also show the results of different members? (COB's:2 & CO's:3)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos..

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 4/08/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 10 Duration of Lesson: 3hrs …….

Lesson Title: Analysis and Design of RCC Rectangular Over Head Tank

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1 Analyze rectangular water tank with load combination of DL+LL

2 Design rectangular water tank with load combination of DL+LL

TEACHING AIDS : White board and Laptop
TEACHING POINTS :

Rectangular water tank with load combination of DL+LL

Assignment / Questions:

1 Analyze and design the rectangular water tank with load combination of DL+LL+WL? (COB's:3& CO's:4)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos..

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 9/08/17
Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A

Course/Subject: CASE Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 11 Duration of Lesson: 3hrs …….

Lesson Title: Analysis and Design of RCC Circular Over Head Tank

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1 Analyze circular water tank with load combination of DL+LL+WL.

2 Design circular water tank with load combination of DL+LL+WL.

TEACHING AIDS : White board and Laptop
TEACHING POINTS :

Circular water tank with load combination of DL+LL+WL.

Assignment / Questions:

1 Analyze and design the circular water tank with load combination of DL+LL+WL? (COB's:3& CO's:4)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 11/08/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A

Course/Subject: Staad Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 12 Duration of Lesson: 3hrs …….

Lesson Title: Analysis and Design of beams for various cross section (I, C, T, L and composite sections)

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Design I, C and T Steel beams with different load combinations
.
2. Design L and Composite Steel sections with different load combinations

TEACHING AIDS : White board and Laptop
TEACHING POINTS :

I,C, T, L-Sections & Composite section

Assignment / Questions:

1. Analyze and design the I,C, T, L & Composite sections with load combination of DL+LL? (COB's:4& CO's:5)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 16/08/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A

Course/Subject: Staad Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 13 Duration of Lesson: 3hrs …….

Lesson Title: Analysis and Design of various Steel Tubular Trusses

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1 Analyze of Steel Tubular Truss

.

2 Design of Steel Tubular Truss

TEACHING AIDS : White board and Laptop
TEACHING POINTS :

Steel Tubular Truss

Assignment / Questions:

1 Analyze & Design the Steel Tubular Truss? (COB's:4& CO's:5)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 18/08/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A

Course/Subject: Staad Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 14 Duration of Lesson: 3hrs …….

Lesson Title: Analysis and Design of Industrial buildings with various Trusses

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1 Analyze of Steel Tubular Truss for different industries.

.

2 Design of Steel Tubular Truss for different industries.

TEACHING AIDS : White board and Laptop
TEACHING POINTS :

Steel Tubular Truss

Assignment / Questions:

1 Analyze & Design the Steel Tubular Truss? (COB's:4& CO's:5)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

LESSON PLAN

Academic **Y**ear : 2021-2022 Date: 18/08/17

Semester : I

Name of the Program: B.Tech … …… Year: IV …….. Section: A

Course/Subject: Staad Lab Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept: Civil Engineering

Designation: ASSISTANT PROFESSOR

Exercise No: 15 Duration of Lesson: 3hrs …….

Lesson Title: Analysis and Design of Steel Over Head Tank

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1 Analyze Steel over head water tank with load combination of DL+LL

2 Design Steel over head water tank with load combination of DL+LL

TEACHING AIDS : White board and Laptop
TEACHING POINTS :

Steel over head water tank with load combination of DL+LL

Assignment / Questions:

1 Analyze and design the circular water tank with load combination of DL+LL? (COB's:3& CO's:4)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos

Gokaraju Rangaraju Institute of Engineering and Technology (Autonomous)

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Programme Educational Objectives

1. Graduates of the programme will be successful in technical and professional career.
2. Graduates of the programme will have proficiency in solving real time Civil Engineering projects.
3. Graduates of the programme will continue to engage in life-long learning with ethical and social responsibility.

Programme Outcomes

Graduates of the Civil Engineering programme will be able to

a. Apply knowledge of mathematics, science and fundamentals of Civil Engineering.

b. Analyses problem and interpret the data.

c. Design a system component, or process to meet desired needs in Civil Engineering within realistic constraints.

d. Identify, formulate, analyze and interpret data to solve Civil Engineering problems.

e. Use modern engineering tools such as CAD and GIS for the Civil Engineering practice.

f. Understand the impact of engineering solutions in a global, economic and societal context.

g. Understand the effect of Civil Engineering solutions on environment and to demonstrate the need for sustainable development.

h. Understanding of professional and ethical responsibility.

i. Work effectively as an individual or in a team and to function on multi-disciplinary context.

j. Communicate effectively with engineering community and society.

k. Demonstrate the management principles in Civil Engineering projects.

l. Recognize the need for and an ability to engage in life-long learning.

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COURSE OBJECTIVES

Academic Year : 2021-2022 **Semester** : I

Name of the Program : B.Tech **Year:** IV Year **Section:** A & B

Course/Subject : Computer application in structural engineering

Course Code : **GR18A4011**

Name of the Faculty : Mr. C . Vivek Kumar / Mr.V Ramesh

Designation: Assistant Professor **Dept.:** Civil Engineering

On completion of this Subject/Course the student shall be able to:

S.No	Objectives
1	**Analyze and Design the RCC beams with different supports and loads.**
2	**Analyze and Design the RCC multi- storied buildings with different load combinations.**
3	**Analyze and Design the RCC water tanks of different shapes.**
4	**Analyze and Design the Steel beams and trusses of different sections with various load combinations.**
5	**Analyze and Design the Steel Towers and Deck bridge of different sections with various load combinations.**

Signature of HOD Signature of faculty

Date: Date:

Note: Please refer to Bloom's Taxonomy, to know the illustrative verbs that can be used to state the objectives.

Gokaraju Rangaraju Institute of Engineering and Technology
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COURSE OUTCOMES

Academic Year : 2021-2022 **Semester** :

Name of the Program: B.Tech **Year:** IV Year **Section:** A & B

Course/Subject: Computer applications in structural engineering **Course Code** : **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh **Designation:** Assistant Professor

Dept.: Civil Engineering

On completion of this Subject/Course the student shall be able to

S.No	Outcomes
1	Analyze and Design the various types of Beams for the different loads.
2	Analyze and Design a 2D frame of Multi-Storied Building.
3	Analyze and Design a 3D frame of Multi-Storied Building.
4	Analyze and Design a RCC Over Head tank.
5	Analyze and Design the different types of Steel Trusses.
6	Analyze and Design the various types of Steel Beams for the different loads.
7	Analyze and Design an Industrial Steel Truss

Signature of HOD Signature of faculty

Date: Date:

Note: Please refer to Bloom's Taxonomy, to know the illustrative verbs that can be used to state the objectives

Gokaraju Rangaraju Institute of Engineering and Technology (Autonomous)

Bachupally, Kukatpally, Hyderabad – 500 090

Mappings of CO's, COB's Vs PO's, POB's

Course Objectives - Course Outcomes Relationship Matrix

Course Outcomes / Course Objectives	1	2	3	4	5	6	7
1	X						
2		X	X				
3	X			X			
4					X	X	
5							X

Course Outcomes - Program Outcomes relations (Contributions: High, Medium and Low)

GR18A4011 CASE Lab	**Program Outcomes**													
Course Objectives	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**	**k**	**l**	**Pso1**	**Pso 2**
1	X	X	X		X						X	X	X	X
2	X	X	X		X						X	X	X	X
3	X	X	X		X						X	X		
4	X	X	X		X						X	X	X	X
5	X	X	X		X						X	X		

GR18A4011 CASE Lab	**Program Outcomes**												**Pso1**	**Pso 2**
Course Outcomes	**a**	**b**	**c**	**d**	**e**	**F**	**g**	**h**	**i**	**j**	**k**	**l**		
1	**M**	**H**	**H**		**M**						**H**	**H**	H	M
2	**M**	**H**	**H**		**M**						**H**	**H**	H	M
3	**M**	**H**	**H**		**M**						**H**	**H**		
4	**M**	**H**	**H**		**M**						**H**	**H**	H	M
5	**M**	**H**	**H**		**M**						**H**	**H**		

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COURSE SCHEDULE

Academic Year : 2021-2022
Semester : I
Name of the Program: B.Tech **Year:** IV **Section:** A1
Course/Subject: CASE LAB **Course Code: GR18A4011**
Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh **Dept.:** Civil Engineering
Designation: Assistant Professor
The Schedule for the whole Course / Subject is:

S. No.	Description	Duration (Date)		Total No. Of Periods
		From	To	
1.	Experiment 1-15	20-8-2021	3-12-2021	48
Total Periods				48

Total No. of Instructional periods available for the course: 48 Hours / Periods

Gokaraju Rangaraju Institute of Engineering and Technology (Autonomous)

Bachupally, Kukatpally, Hyderabad – 500 090. (040) 6686 444

COURSE SCHEDULE

Academic Year : 2021-2022
Semester : I
Name of the Program: B.Tech **Year:** IV **Section:** A1
Course/Subject: CASE LAB **Course Code: GR18A4011**
Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh **Dept.:** Civil Engineering
Designation: Assistant Professor

The Schedule for the whole Course / Subject is:

S. No.	Description	Duration (Date)		Total No. Of Periods
		From	To	
1.	Experiment 1-15	21-8-2021	4-12-2021	48
Total Periods				48

Total No. of Instructional periods available for the course: 48 Hours / Periods

Gokaraju Rangaraju Institute of Engineering and Technology (Autonomous)

Bachupally, Kukatpally, Hyderabad – 500 090. (040) 6686 444

COURSE SCHEDULE

Academic Year : 2021-2022
Semester : I
Name of the Program: B.Tech **Year:** IV **Section:** B1
Course/Subject: CASE LAB **Course Code: GR18A4011**
Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh **Dept.:** Civil Engineering
Designation: Assistant Professor
The Schedule for the whole Course / Subject is:

S. No.	Description	Duration (Date)		Total No. Of Periods
		From	To	
1.	Experiment 1-15	17-8-2021	8-12-2021	51
Total Periods				51

Total No. of Instructional periods available for the course: 51 Hours / Periods

Gokaraju Rangaraju Institute of Engineering and Technology (Autonomous)

Bachupally, Kukatpally, Hyderabad – 500 090. (040) 6686 444

COURSE SCHEDULE

Academic Year : 2021-2022
Semester : I
Name of the Program: B.Tech **Year:** IV **Section:** B2
Course/Subject: CASE LAB **Course Code: GR18A4011**
Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh **Dept.:** Civil Engineering
Designation: Assistant Professor

The Schedule for the whole Course / Subject is:

S. No.	Description	Duration (Date)		Total No. Of Periods
		From	To	
1.	Experiment 1-15	18-8-2021	8-12-2021	51
Total Periods				51

Total No. of Instructional periods available for the course: 51 Hours / Periods

Gokaraju Rangaraju Institute of Engineering and Technology (Autonomous)

Bachupally, Kukatpally, Hyderabad – 500 090. (040) 6686 4440

Assessment in relation to CO's and COB's

Assessment:

1. Internal Examination
2. External Examination
3. Viva

Course Outcomes / Assessments	1	2	3	4	5	6	7
1	X	X	X	X	X	X	X
2	X	X	X	X	X	X	X
3	X	X			X		

Course Objectives / Assessments	1	2	3	4	5
1	X	X	X	X	X
2	X	X	X	X	X
3	X			X	X

Gokaraju Rangaraju Institute of Engineering and Technology (Autonomous)

Bachupally, Kukatpally, Hyderabad – 500 090. (040) 6686 4440

EVALUATION STRATEGY

Academic Year : 2021-2022

Semester : I

Name of the Program: B.Tech **Year:** IV **Section:** A1

Course/Subject: Computer applications in structural engineering **Course Code: GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh **Dept.:** Civil Engineering

Designation: Assistant Professor

1. TARGET:

A) Percentage to pass: 95%

b) Percentage of class:

Total strength of the class (A & B): 123

Sl. No.	Class/Division	No. of Students
1	First class with distinction	
2	First class	
3	Pass class	

2. COURSE PLAN& CONTENT DELIVERY

Sl.No.	Plan	Brief Description
1	Practice classes	105 practical classes for A and B section each
2	Presentations	Presentations of videos on analysis and design of all the exercises

3. METHOD OF EVALUATION

3.1 ☐ Continuous Assessment Examinations (CAE-I, CAE-II)

A). **Assignments:** Assignments to assess the knowledge of students on Staad lab basics, analysis and design of RCC, Steel beams, 2D, 3D frames and water tanks.

B) **Quiz:** To assess the knowledge of students on Staad lab basics, analysis and design of RCC, Steel beams, 2D, 3D frames and water tanks.

C) **Internal Examination**: Internal Examination to assess the overall knowledge on Staad lab on whole syllabus.

3.2 Semester End Examinations: To test their abilities in Staad lab and to approve their abilities learnt during the course.

4. List out any new topic(s) or any innovation you would like to introduce in teaching the subjects in this Semester.

Better to eliminate Deck Bridge and towers from the syllabus because the schedules time is not sufficient to complete the syllabus.

Signature of HOD

Signature of faculty

Date:

Date:

Gokaraju Rangaraju Institute of Engineering and Technology
(Autonomous)

Bachupally, Kukatpally, Hyderabad – 500 090. (040) 6686 4440

GUIDELINES TO STUDY THE COURSE/SUBJECT

Academic Year : 2021-2022

Semester : I

Name of the Program: B.Tech **Year:** IV **Section:** A1

Course/Subject: Computer applications in structural engineering **Course Code: GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh **Dept.:** Civil Engineering

Designation: Assistant Professor

Guidelines to study the Course/ Subject: Concrete Technology

This course helps the students to learn how to analyze and design the different structures like buildings, water tanks, steel trusses, industrial trusses, towers and bridges etc; with different loads and load combinations such as dead loads, live loads, wind load and earthquake loads.

Students should have the following prerequisites

1. Knowledge on Structural Analysis.
2. Depth knowledge on Design of Reinforced Concrete Structures.
3. Knowledge on AutoCAD.
4. Knowledge on MS Office
5. Knowledge on IS Codes such as IS 456, IS 800, IS 1893 Part 1 and IS 875 Part 1 to 5 etc.

Why will this subject help?

1. This course will help the students to analyse the different structures.
2. This course will help the students to design the different structures.

Books/Material

TEXT BOOK:

1. STAAD Pro 2005 Tutorial by Munir M. Hamad SDC (Schroff Development Corporation) Publications.
2. STAAD.*Pro* 2007 Technical Reference Manual, Research Engineers International, A Bentley solution Centre

REFERENCES:

1. Limit State Theory and Design of Reinforced Concrete by Dr V.L Shah, Structure Publications.
2. Bentley Software Manual.
3. GRIET, Department of Civil Engineering Manual.

Websites

1. NPTEL Lecture Notes and videos: https://www.youtube.com/watch?v=bypvx608JmU
2. NPTEL Videos: https://www.youtube.com/watch?v=jWTm9UjvtT4

Course Design and Delivery System (CDD):

- The Course syllabus is written into number of learning objectives and outcomes.
- These learning objectives and outcomes will be achieved through lectures, assessments, assignments, experiments in the laboratory, projects, seminars, presentations, etc.
- Every student will be given an assessment plan, criteria for assessment, scheme of evaluation and grading method.
- The Learning Process will be carried out through assessments of Knowledge, Skills and Attitude by various methods and the students will be given guidance to refer to the text books, reference books, journals, etc.

The faculty be able to –

- Implement principles of Learning
- Comprehend the psychology of students
- Develop instructional objectives for a given topic
- Prepare course, unit and lesson plans
- Demonstrate different methods of teaching and learning
- Use appropriate teaching and learning aids
- Plan and deliver lectures effectively
- Provide feedback to students using various methods of Assessments and tools of Evaluation
- Act as a guide, advisor, counselor, facilitator, motivator and not just as a teacher alone

Signature of HOD

Signature of faculty

Date:

Date:

Gokaraju Rangaraju Institute of Engineering and Technology
(Autonomous)
Bachupally, Kukatpally, Hyderabad – 500 090. (040) 6686 4440

GUIDELINES TO STUDY THE COURSE / SUBJECT

Academic **Y**ear : 2021-2022

Semester : I

Name of the Program : B.Tech Year: IV Section: A & B

Course/Subject: Computer application in structural engineering

Course Code: **GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh Dept.: Civil Engineering

Designation: Asst.Professor

Guidelines to study the Course/ Subject: Concrete Technology

This course helps the students to learn how to analyze and design the different structures like buildings, water tanks, steel trusses, industrial trusses, towers and bridges etc; with different loads and load combinations such as dead loads, live loads, wind load and earthquake loads.

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2. STAAD.*Pro* 2007 Technical Reference Manual, Research Engineers International, A Bentley solution Centre

REFERENCES:

1. Limit State Theory and Design of Reinforced Concrete by Dr V.L Shah, Structure Publications.
2. Bentley Software Manual.
3. GRIET, Department of Civil Engineering Manual.

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2. NPTEL Videos: https://www.youtube.com/watch?v=jWTm9UjvtT4

Course Design and Delivery System (CDD):

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- Develop instructional objectives for a given topic
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- Demonstrate different methods of teaching and learning
- Use appropriate teaching and learning aids
- Plan and deliver lectures effectively
- Provide feedback to students using various methods of Assessments and tools of Evaluation
- Act as a guide, advisor, counselor, facilitator, motivator and not just as a teacher alone

Signature of HOD

Signature of faculty

Date:

Date:

2021-2022 Batch Students Roll List

S.No	Roll No	Name of the student
1.	17241A0153	Sujith Kumar Shinde
2.	17241A0157	Vuppula Mithunkumar Reddy
3.	18241A0101	Ajmeera Ganesh
4.	18241A0102	Anabotula Sravani
5.	18241A0103	Anumatla Manoj
6.	18241A0104	Byna Rishitha
7.	18241A0105	Bura Tharasri
8.	18241A0106	Pudari Badrinath Goud
9.	18241A0107	Balasani Rohith
10.	18241A0108	Bandari Veeraswamy
11.	18241A0109	Bandi Varun Kumar
12.	18241A0110	Bashipaka Pradeep
13.	18241A0111	Bathula Nikhil
14.	18241A0112	Batikiri Veerendra Swamy
15.	18241A0113	Bhukya Soujanya
16.	18241A0114	Bhukya Varun Naik
17.	18241A0115	Boddu Pavan
18.	18241A0116	Byagari Rangaraju
19.	18241A0117	Chada Ruchita
20.	18241A0118	Chinthakuntla Thriveen
21.	18241A0119	Cv Jaswanth Surya
22.	18241A0120	Dosapati Nishu
23.	18241A0121	G Prashanth
24.	18241A0122	Gaddipati Lohitha
25.	18241A0123	Gangam Rohit Reddy
26.	18241A0124	Gottemukkala Govardhan
27.	18241A0125	Hrishikesh Bansal
28.	18241A0126	Janapati Raju
29.	18241A0127	Jyothika Mannava
30.	18241A0128	K Harshitha Reddy
31.	18241A0129	Kolan Reshikesh Reddy
32.	18241A0130	Karri Bharath Chandra Reddy
33.	18241A0131	Kuppala Nihar
34.	18241A0132	Kurva Lavanya
35.	18241A0133	Maddimsetty Sri Charan
36.	18241A0134	Maganoor Manaswini
37.	18241A0135	Maloth Bhavsingh
38.	18241A0136	Malothu Naveena
39.	18241A0137	Manda Ithihas

40.	18241A0138	Mohammad Ashfaq Ahmed
41.	18241A0139	Mohammed Omer Shareef
42.	18241A0140	Mukundu Naveen
43.	18241A0141	Nalumasu Sahithi
44.	18241A0142	Nampelly Ravi Kumar
45.	18241A0143	Narra Shashidhar Reddy
46.	18241A0144	Patlola Vinay Reddy
47.	18241A0145	Pattambetty Pavankumar
48.	18241A0146	Pola Tharun
49.	18241A0147	Posani S V A Kalyan
50.	18241A0148	Pulle Manichadra
51.	18241A0149	Rajulapati Rohit Naga Sai
52.	18241A0150	Sura Subbaram Reddy
53.	18241A0153	Sunkari Vikas
54.	18241A0154	Thirupathi Rao Salla
55.	18241A0155	Trivikram Reddy
56.	18241A0156	Thrupti Shreya
57.	18241A0157	Vakamalla Bhavya Sree
58.	18241A0158	Vemula Manisha
59.	18241A0159	Vuppula Keerthana
60.	18241A0160	Yalla Anitha
61.	19245A0101	KANCHERLA BHARATH
62.	19245A0102	ELUPULA KUMARASWAMY
63.	19245A0103	BRAHMADEVARA BHAVITHA
64.	19245A0104	DASARI NAMRATHA
65.	19245A0105	T CHANDANA
66.	19245A0106	KOLA HARITHA
67.	16241A0161	Abdul Samad
68.	18241A0161	A Nachiketh
69.	18241A0162	Aleti Jagadish
70.	18241A0163	Amirneni Anusha
71.	18241A0164	Anireddy Avinash
72.	18241A0165	Ashitha Golla
73.	18241A0166	Animesh Baathuk
74.	18241A0167	Boppu Lokesh
75.	18241A0168	Budagam Harshith
76.	18241A0169	Chilumula Sridhar
77.	18241A0170	Dandre Vennela
78.	18241A0171	Doti Upender
79.	18241A0172	Eda Manasa
80.	18241A0173	Gonda Harshini
81.	18241A0174	Gore Kamalakar Sailesh
82.	18241A0175	Gore Kamalakar Sandeep

83.	18241A0176	Guddati Arun
84.	18241A0177	Vijay Narasimha Reddy Kolagtla
85.	18241A0178	Kancharakuntla Deepika
86.	18241A0179	Kota Rashmitha
87.	18241A0180	Kothuri Pranay
88.	18241A0181	Kudala Rama
89.	18241A0182	Kummari Srilekha
90.	18241A0183	Kunchala Adarsh
91.	18241A0184	Kurra Neeraj Prasad
92.	18241A0185	Kyama Pavan
93.	18241A0186	M Shekhar
94.	18241A0187	Malraj Manvitha
95.	18241A0188	Matharasi Sai Kumar
96.	18241A0189	Md Ameer Sohail
97.	18241A0190	Md Amir
98.	18241A0191	Medari Vikram Aditya
99.	18241A0192	Mediga Karthik
100.	18241A0193	Moniesh Reddy Sunkara
101.	18241A0194	Kaushik Nadella
102.	18241A0195	Nikhitha Kasuvojula
103.	18241A0196	Nunavath Suman
104.	18241A0197	P Kishore
105.	18241A0198	Peesu Spandana Reddy
106.	18241A0199	Prathyusha Maddala
107.	18241A01A0	Bavanari Pratyush
108.	18241A01A1	Putta Rohith
109.	18241A01A2	Rahul Pradhan
110.	18241A01A3	Rampelli Pravalika
111.	18241A01A4	Rangu Soniya
112.	18241A01A5	Rentala Adarsh Reddy
113.	18241A01A6	Ritish J
114.	18241A01A7	Seelam Rahul Goud
115.	18241A01A8	Shaik Afeez
116.	18241A01A9	Shaik Shoaib
117.	18241A01B0	Shivarathri Sai Kumar
118.	18241A01B1	Shivarathri Tharun
119.	18241A01B2	Sowmika Boyapati
120.	18241A01B3	Vishruth Reddy T N
121.	18241A01B4	Tekula Prashanth Reddy
122.	18241A01B5	Teegala Someshwar Reddy
123.	18241A01B6	Thatipamula Vigna Sai
124.	18241A01B7	Thota Sri Sai
125.	18241A01B8	Vedati Manikanta Karthik

126.	18241A01B9	Vallapu Reddy Sushrutha
127.	18241A01C0	Yanala Rithish Reddy
128.	19245A0107	CHOUGONI SHIVASHANKAR
129.	19245A0108	KOTA ANVESH
130.	19245A0109	POLAGANI CHANDU GOUD
131.	19245A0110	SADGARI KARTHIK
132.	19245A0111	GUGULOTHU PAVAN
133.	19245A0112	A RAGHAVENDRA

GR18 2021-22 B.Tech CE 410, Section: A GR18A4011 Computer Applications in Structural Engineering Lab Sessional Marks

S.No	Roll No	Lab Internals	Assessment Marks	Record Marks	Lab Attendance Marks	Sessional Marks
1	17241A0153	8	7	3	3	21
2	17241A0157	9	7	3	3	22
3	18241A0101	9	7	5	3	24
4	18241A0102	9	8	5	3	25
5	18241A0103	9	7	4	3	23
6	18241A0104	8	7	5	3	23
7	18241A0105	10	8	5	3	26
8	18241A0106	6	7	4	3	20
9	18241A0107	7	7	4	3	21
10	18241A0108	9	7	5	3	24
11	18241A0109	5	7	5	3	20
12	18241A0110	8	8	4	3	23
13	18241A0111	8	9	5	3	25
14	18241A0112	8	8	5	3	24
15	18241A0113	10	8	5	3	26
16	18241A0114	10	7	5	3	25
17	18241A0115	9	7	5	3	24
18	18241A0116	9	7	4	3	23
19	18241A0117	9	9	5	3	26
20	18241A0118	8	8	4	3	23
21	18241A0119	8	7	3	2	20
22	18241A0120	10	8	5	4	27
23	18241A0121	8	7	4	3	22
24	18241A0122	8	8	4	3	23
25	18241A0123	8	7	4	3	22
26	18241A0124	8	7	4	2	21
27	18241A0125	8	7	3	3	21
28	18241A0126	8	7	3	3	21
29	18241A0127	8	7	5	4	24
30	18241A0128	8	8	5	4	25
31	18241A0129	7	8	4	3	22
32	18241A0130	7	6	4	3	20
33	18241A0131	8	8	4	3	23
34	18241A0132	8	9	5	3	25
35	18241A0133	8	7	5	3	23
36	18241A0134	9	8	3	3	23
37	18241A0135	7	7	4	3	21
38	18241A0136	9	9	5	3	26
39	18241A0137	8	7	5	3	23
40	18241A0138	8	7	3	3	21
41	18241A0139	6	7	4	3	20
42	18241A0140	AB	5	0	0	5
43	18241A0141	7	9	5	3	24
44	18241A0142	9	9	3	4	25
45	18241A0143	8	7	3	3	21
46	18241A0144	6	8	3	3	20
47	18241A0145	9	8	5	4	26
48	18241A0146	7	7	3	3	20
49	18241A0147	7	8	3	3	21
50	18241A0148	8	8	4	3	23
51	18241A0149	7	7	4	3	21
52	18241A0150	7	7	3	3	20
53	18241A0153	10	8	3	4	25
54	18241A0154	7	8	4	3	22
55	18241A0155	6	7	4	3	20
56	18241A0156	7	7	3	4	21
57	18241A0157	8	8	4	3	23
58	18241A0158	9	7	5	4	25
59	18241A0159	9	8	4	3	24
60	18241A0160	8	7	3	3	21
61	19245A0101	9	7	5	3	24
62	19245A0102	7	7	4	3	21
63	19245A0103	9	8	4	3	24
64	19245A0104	9	8	4	3	24
65	19245A0105	9	8	4	3	24
66	19245A0106	8	8	4	3	23

GR18 2021-22 B.Tech CE 410, Section: B GR18A4011 Computer Applications in Structural Engineering Lab Sessional Marks

S.No	Roll No	Lab Internals	Assessment Marks	Record Marks	Lab Attendance Marks	Sessional Marks
1	16241A0161	8	8	3	2	21
2	18241A0161	8	8	4	3	23
3	18241A0162	7	8	4	3	22
4	18241A0163	8	7	4	4	23
5	18241A0164	8	8	4	3	23
6	18241A0165	8	8	4	3	23
7	18241A0166	8	7	4	3	22
8	18241A0167	8	8	4	3	23
9	18241A0168	8	7	4	3	22
10	18241A0169	9	8	4	3	24
11	18241A0170	10	8	5	3	26
12	18241A0171	6	8	4	3	21
13	18241A0172	10	7	5	4	26
14	18241A0173	10	8	5	3	26
15	18241A0174	7	7	4	3	21
16	18241A0175	8	8	4	3	23
17	18241A0176	8	8	4	3	23
18	18241A0177	6	8	4	3	21
19	18241A0178	9	8	5	3	25
20	18241A0179	8	8	4	2	22
21	18241A0180	8	7	4	3	22
22	18241A0181	8	8	4	4	24
23	18241A0182	10	7	5	3	25
24	18241A0183	8	7	4	3	22
25	18241A0184	7	7	4	3	21
26	18241A0185	8	8	4	3	23
27	18241A0186	6	7	4	3	20
28	18241A0187	10	7	5	3	25
29	18241A0188	7	7	4	3	21
30	18241A0189	10	7	5	5	27
31	18241A0190	9	7	4	3	23
32	18241A0191	8	8	4	3	23
33	18241A0192	10	7	5	3	25
34	18241A0193	9	8	4	5	26
35	18241A0194	8	8	4	3	23
36	18241A0195	10	9	5	4	28
37	18241A0196	8	8	4	3	23
38	18241A0197	9	8	4	3	24
39	18241A0198	10	8	5	4	27
40	18241A0199	9	7	4	3	23
41	18241A01A0	9	8	4	3	24
42	18241A01A1	7	7	4	2	20
43	18241A01A2	10	9	5	3	27
44	18241A01A3	9	7	4	3	23
45	18241A01A4	10	9	4	3	26
46	18241A01A5	9	7	4	3	23
47	18241A01A6	9	8	4	4	25
48	18241A01A7	8	8	4	3	23
49	18241A01A8	9	7	4	3	23
50	18241A01A9	10	9	4	3	26
51	18241A01B0	6	8	4	3	21
52	18241A01B1	9	8	4	3	24
53	18241A01B2	9	8	4	5	26
54	18241A01B3	8	8	4	3	23
55	18241A01B4	9	8	4	5	26
56	18241A01B5	10	9	4	5	28
57	18241A01B6	8	8	4	3	23
58	18241A01B7	8	8	4	2	22
59	18241A01B8	10	9	4	3	26
60	18241A01B9	10	7	4	3	24
61	18241A01C0	10	8	4	3	25
62	19245A0107	9	7	4	3	23
63	19245A0108	8	7	4	2	21
64	19245A0109	8	8	4	3	23
65	19245A0110	8	8	4	3	23
66	19245A0111	8	8	4	3	23
67	19245A0112	8	7	4	3	22

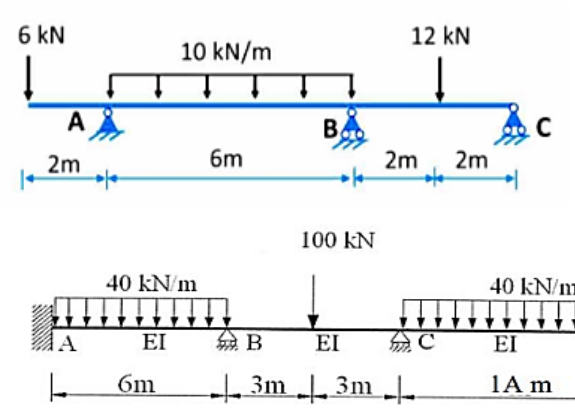
Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

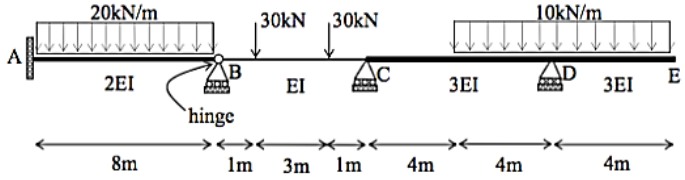
CASE LAB

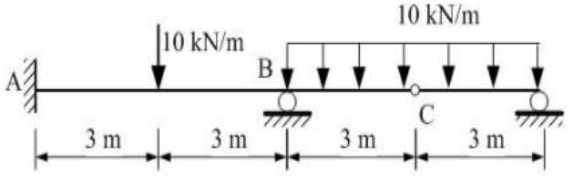
Internal Examination Model Question Paper

1. Analyse and design the RCC beam for the following support and load conditions. Show SFD and BMD.

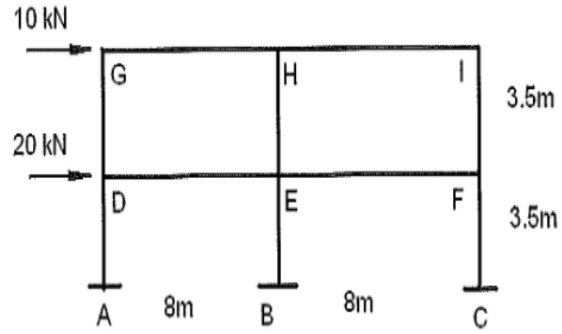


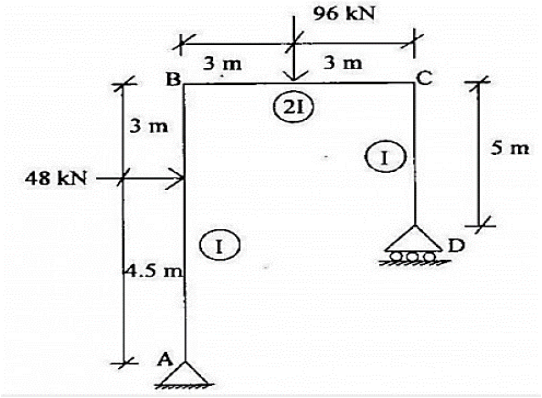
2. Analyse and design the RCC beam for the following support and load conditions. Show SFD and BMD.





3. Analyse and Design the RCC 2D frame





4. Analyse and Design the 3D frame (G+5) with a size of 15 m x 20 m consists of 3 m x 4 m Bay size with DL, LL with their load combinations. Assume whichever data necessary.

5. Analyse and Design the 3D frame (G+5) with a size of 20 m x 25 m consists of 3 m x 5 m Bay size with DL, LL and WL (Hyderabad) with their load combinations. Assume whichever data necessary.

6. Analyse and Design the 3D frame (G+6) with a size of 20 m x 25 m consists of 4 m x 5 m Bay size with DL, LL and WL (Tirupati) with their load combinations. Assume whichever data necessary.

7. Analyse and Design the 3D frame (G+4) with a size of 20 m x 25 m consists of 3 m x 5 m Bay size with DL, LL and WL (New Delhi) with their load combinations. Assume whichever data necessary.

8. Analyse and Design the 3D frame (G+6) with a size of 15 m x 20 m consists of 3 m x 4 m Bay size with DL, LL and EQ (Zone III) with their load combinations. Assume whichever data necessary.

9. Analyse and Design the 3D frame (G+7) with a size of 25 m x 20 m consists of 5 m x 4 m Bay size with DL, LL and EQ (Zone IV) with their load combinations. Assume whichever data necessary.

10. Analyse and Design the 3D frame (G+7) with a size of 25 m x 20 m consists of 5 m x 4 m Bay size with DL, LL and EQ (Zone V) with their load combinations. Assume whichever data necessary

11. Analyse and Design the 3D frame (G+5) with a size of 15 m x 20 m consists of 3 m x 4 m Bay size with DL, LL with their load combinations. Assume whichever data necessary.

12. Analyse and Design the 3D frame (G+5) with a size of 25 m x 20 m consists of 5 m x 4 m Bay size with DL, LL and EQ (Zone IV) with their load combinations. Assume whichever data necessary.

13. Analyse and Design the RCC Rectangular Overhead Water Tank with 2 Stages with a size of 5 m x 4 m consists of height of 3m size with DL, LL with their load combinations. Assume whichever data necessary.

14. Analyse and Design the RCC Rectangular Overhead Water Tank with single stage with a size of 5 m x 4 m consists of height of 3m size with DL, LL with their load combinations. Assume whichever data necessary.

15. Analyse and Design the 3D frame (G+5) with a size of 20 m x 20 m consists of 4 m x 5 m Bay size with DL, LL with EQ load in Chennai Location with their load combinations. Assume whichever data necessary.

16. Analyse and Design the RCC Rectangular Overhead Water Tank with 2 Stages with a size of 4 m x 6 m consists of height of 4 m size with DL, LL with their load combinations. Assume whichever data necessary.

17. Analyse and Design the RCC Rectangular Overhead Water Tank with 2 Stages with a size of 5 m x 4 m consists of height of 3m size with DL, LL with their load combinations. Assume whichever data necessary.

18. Analyse and Design the RCC Circular Overhead Water Tank with 2 Stages with a size of 5 m x 4 m consists of height of 3m size with DL, LL with their load combinations. Assume whichever data necessary.

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COMPLETION STATUS

Academic Year : 2021-2022

Semester : I

Name of the Program: B.Tech **Year:** IV **Section:** A & B

Course/Subject: Computer applications in structural engineering **Course Code: GR18A4011**

Name of the Faculty: Mr. C . Vivek Kumar / Mr.V Ramesh **Dept.:** Civil Engineering

Designation: Assistant Professor

Actual Date of Completion & Remarks, if any

Exercise	Remarks	No. of Objectives Achieved	No. of Outcomes Achieved
Exercise 1	Covered on time	1	#5
Exercise 2	Covered on time	3	1-5
Exercise 3	Covered on time	3	1-5
Exercise 4	Covered on time	3	1-5
Exercise 5	Covered late	2	1-5
Exercise 6	Covered late	2	1-5
Exercise 7	Covered late	2	1-5

Signature of HOD

Date:

Signature of faculty

Date: