RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE		FORMAT-**3**	Sheet No. 1/4
Branch	**CIVIL ENGINEERING**		**Semester**	**6th**
Course Code		**Course Name**	**Design of Steel Structures**	

Course Outcome 1	**Illustrate design philosophies, analyze and design riveted connection in steel structures.**	Teach Hrs	Marks
Learning Outcome 1	Describe details of structural steel and explain design philosophies.	5	5
Content	Introduction, advantages and disadvantages of steel as structural material, properties of structural steel, types of structural steel, grades of steel (IS: 2062), rolled steel sections, use of steel table, types of loads on steel and load combinations, philosophy of working stress and limit state method, characteristic actions(loads), partial safety factors for loads and materials.		
Method of Assessment	External Theory Exam – Pen Paper Test		
Learning Outcome 2	Describe types of rivets, calculate strength and design riveted connections applying the principles of WSM.	10	10
Content	Riveted Connections: types of rivets, definition of terms used in rivets – Pitch, Gauge distance, Edge distance, End distance, permissible stresses in rivets, types of riveted joints, failure of riveted joints, assumptions in design of riveted joints, specifications as per IS: 800 – 1984, strength and efficiency of riveted connection, design of riveted connection for axially loaded members only, simple numerical problems on riveted connections.		
Method of Assessment	Internal Theory Exam – Mid Semester Test I		

Course Outcome 2	**Analyze and design connections in steel structures.**	Teach Hrs	Marks
Learning Outcome 1	Describe types of bolts, calculate strength and design bolted connections applying the principles of LSM.	10	10
Content	Bolted Connections: types of bolts, permissible stresses in bolts, types of bolted joints, failure of bolted joints, assumptions in design of bolted joints, specifications as per IS: 800 – 2007, strength and efficiency of bolted connection as per IS: 800 – 2007, Simple eccentric connections (Simple numerical problems), design of bolted connection for axially loaded members as per IS: 800 – 2007, simple numerical problems on bolted connections.		
Method of Assessment	External Theory Exam – Pen Paper Test		
Learning Outcome 2	Describe advantages and disadvantages of welds, their types, calculate strength and design welded connections applying principles of LSM.	10	10
Content	Welded Connection: advantages and disadvantages of welded joints over riveted or bolted joints, types of welds and welded joints, assumption in analysis of welded joints, strength of fillet and butt welded joints as per IS: 800 – 2007, design of fillet and butt welded joints for axially loaded members		

	only as per IS: 800 – 2007, eccentric connections, simple numerical problems on welded connections.
Method of Assessment	External Theory Exam – Pen Paper Test
Learning Outcome 3	Prepare drawings of rolled steel sections and connections. 06
Content	1. Draw various rolled steel sections. 2. Draw types of welds, types of bolted and welded joints.
Method of Assessment	Practical Exam : Both Internal and External

		Teach Hrs	Marks
Course Outcome 3	**Analyze and design tension members, compression members and column bases and prepare drawings of laced and battened columns and column bases applying principles of LSM.**	**Teach Hrs**	**Marks**
Learning Outcome 1	Explain types of failures of tension members and analyse and design tension members applying principles of LSM.	**13**	**15**
Content	Tension members: Introduction, types of sections used, net sectional area, types of failures, design strength of members- gross section yielding, net section fracture, block shear, slenderness ratio, design of single and double angle tension member with bolted and welded connection for axial load only, introduction to lug angle, splice and gusset plate.		
Method of Assessment	External Theory Exam – Pen Paper Test		
Learning Outcome 2	Explain terminologies of compression members and analyze and design single and double angles struts and compression members applying principles of LSM.	**15**	**15**
Content	Compression members: Introduction, types of sections used, effective length, radius of gyration, slenderness ratio, design compressive stress, Analysis and design of axially loaded single and double angle strut, Analysis and design of axially loaded simple and built up column, Design of lacing angles and introduction to battens. (No numerical problem on battening)		
Method of Assessment	External Theory Exam – Pen Paper Test		
Learning Outcome 3	Identify column base and design slab base applying principles of LSM.	**08**	**10**
Content	Column Bases: Introduction, types of column bases – slab base, gusseted base, analysis and design of slab base subjected to axial loads only and concrete block, introduction to gusseted base (no numerical problem on gusseted base),		
Method of Assessment	Internal Theory Exam – Mid Semester Test II		
Learning Outcome 4	Prepare drawings of laced and battened built up column, slab base and gusseted base.	**12**	
Content	1. Draw plan and elevation of single and double laced built up column. 2. Draw plan and elevation of battened built up column. 3. Draw plan, elevation and section of slab base. 4. Draw plan, elevation and section of gusseted base.		
Method of Assessment	Practical Exam : Both Internal and External		

Course Outcome 4	Design beams, calculate load on roof truss and analyze roof truss by graphical method.	Teach Hrs	Marks
Learning Outcome 1	Classify beams and sections and analyze and design simple beams.	12	15
Content	Beams: Introduction, types of sections, classification of cross sections – plastic, compact, semi – compact, slender, types of beams – laterally supported beams, laterally unsupported beams, plastic modulus (No numerical problem on plastic modulus), web buckling, web crippling, deflection, Analysis and design of laterally supported beams subjected to uniformly distributed load, Introduction to plate girder. (No numerical problem on plate girder)		
Method of Assessment	External Theory Exam – Pen Paper Test		
Learning Outcome 2	Identify trusses, calculate loads on trusses and analyze roof truss by graphical method.	10	10
Content	Roof Truss: types of steel truss, loads on roof truss, load combinations, combination of loads, calculation of loads on roof truss, spacing of truss, analysis of roof truss using graphical method, connections, design procedure of purlin (No numerical problem)		
Method of Assessment	Internal Theory Exam – Assignments/Quiz/Seminars/Presentation		
Learning Outcome 3	Prepare drawings of beam to beam connections, beam to column connections, plate girder and roof truss.	09	
Content	1. Draw seated and framed beam to beam connections and seated and framed beam to column connections. 2. Draw plan and elevation of plate girder showing all details. 3. Draw a roof truss showing details of joints, purlins and roofing.		
Method of Assessment	Practical Exam : Both Internal and External		

Note: 1. Internal marks of practical exam is mentioned in Format 4.

   2. External practical exam will be of maximum 30 marks and any of the practical mentioned in LO's can be assessed.

List of Suggested Books: -

S. No.	Authors	Title	Publisher
1.	P. Dayarathnam	Design of Steel Structures	S. Chand and Company
2.	Prof. S. K. Duggal	Design of Steel Structures	McGraw Hill Education (India) Pvt. Ltd.
3.	Prof. S. K. Duggal	Limit State Design of Steel Structures	McGraw Hill Education (India) Pvt. Ltd.
4.	Prof. S. S. Bhavikatti	Design of Steel Structures (By Limit State Method As Per Is: 800-2007)	I. K. International Publishing house Pvt. Ltd.,
5.	Bureau of Indian Standard	IS-800 – 2007, General Construction in steel,	BIS, New Delhi.
6.	Bureau of Indian Standard	Handbook on Steel – SP-6	BIS, New Delhi.
7.	Bureau of Indian Standard	IS – 875, 1987, Part-1 to 5: Indian Standard Code for Loading Standards	BIS, New Delhi.
8	N. Subramanian	Design of Steel Structures: Theory And Practice	Oxford University Press (2010)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code		CO Code	LO Code	Format No. 4
		C	0	3			1	1	

COURSE NAME	Design of Steel Structure
CO Description	Illustrate design philosophies, analyze and design riveted connection in steel structures.
LO Description	Describe details of structural steel and explain design philosophies.

SCHEME OF STUDY

S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Introduction, advantages and disadvantages of steel as structural material, properties of structural steel, types of structural steel, grades of steel (IS: 2062), rolled steel sections, use of steel table, types of loads on steel and load combinations, philosophy of working stress and limit state method, characteristic actions(loads), partial safety factors for loads and materials.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	5	0	Text book, video lectures, chalk board.	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Theory exam	Student will be asked to explain different properties of structural steel and grade of steel, list types of loads.	05	Test Paper + Rating scale	Question paper + rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)
Part of end semester theory exam

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code		CO Code	LO Code	Format No. **4**
		C	**0**	**3**			**1**	**2**	

COURSE NAME	Design of Steel Structure
CO Description	Illustrate design philosophies, analyze and design riveted connection in steel structures.
LO Description	Describe types of rivets, calculate strength and design riveted connections applying the principles of WSM.

SCHEME OF STUDY

S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Riveted Connections: types of rivets, definition of terms used in rivets – Pitch, Gauge distance, Edge distance, End distance, permissible stresses in rivets, types of riveted joints, failure of riveted joints, assumptions in design of riveted joints, specifications as per IS: 800 – 1984, strength and efficiency of riveted connection, design of riveted connection for axially loaded members only, simple numerical problems on riveted connections.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	10	0	Text book, video lectures, chalk board.	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Theory exam	Student will be asked to define various terms used in riveting connections, explain failure of riveted connection, calculate efficiency of riveted connection.	10	Test Paper + Rating scale	Question paper + rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of Internal Exam – Mid Semester Test-I

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code		CO Code	LO Code	Format No. 4
		C	0	3			2	1	

COURSE NAME	Design of Steel Structure
CO Description	Analyze and design connections in steel structures.
LO Description	Describe types of bolts, calculate strength and design bolted connections applying the principles of LSM.

SCHEME OF STUDY

S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Bolted Connections: types of bolts, permissible stresses in bolts, types of bolted joints, failure of bolted joints, assumptions in design of bolted joints, specifications as per IS: 800 – 2007, strength and efficiency of bolted connection as per IS: 800 – 2007, Simple eccentric connections (Simple numerical problems), design of bolted connection for axially loaded members as per IS: 800 – 2007, simple numerical problems on bolted connections.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	10	0	Text book, video lectures, chalk board.	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Theory exam	Student will be asked to explain assumptions in design of bolted connections, check safety of bolt for the given loading condition.	10	Test Paper + Rating scale	Question paper + rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of end semester theory exam

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code		Course Code		CO Code	LO Code	Format No. **4**
		C **0** **3**				**2**	**2**	

COURSE NAME	Design of Steel Structure
CO Description	Analyze and design connections in steel structures.
LO Description	Describe advantages and disadvantages of welds, their types, calculate strength and design welded connections applying principles of LSM.

SCHEME OF STUDY

S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Welded Connection: advantages and disadvantages of welded joints over riveted or bolted joints, types of welds and welded joints, assumption in analysis of welded joints, strength of fillet and butt welded joints as per IS: 800 – 2007, design of fillet and butt welded joints for axially loaded members only as per IS: 800 – 2007, eccentric connections, simple numerical problems on welded connections.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	10	0	Text book, video lectures, chalk board.	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Theory exam	Student will be asked to list advantages and disadvantages of welding over bolting, design weld for the given load.	10	Test Paper + Rating scale	Question paper + rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of end semester theory exam

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code		Course Code		CO Code	LO Code	Format No. 4
				C	0	3			2	3	

COURSE NAME	Design of Steel Structure
CO Description	Analyze and design connections in steel structures.
LO Description	**Prepare drawings of rolled steel sections and connections.**

SCHEME OF STUDY

S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	1. Draw various rolled steel sections. 2. Draw types of welds, types of bolted and welded joints.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	0	06	Text book, video lectures, chalk board.	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Practical exam	Student will be asked to draw bolted and welded joints.		Rating scale/ Rubrics	Question paper + rating scale	External/Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of Practical Exam : Internal Marks for Practical : 5 Marks

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code		CO Code	LO Code	Format No. 4
		C	0	3			3	1	

COURSE NAME	Design of Steel Structure
CO Description	Analyze and design tension members, compression members and column bases and prepare drawings of laced and battened columns and column bases applying principles of LSM.
LO Description	Explain types of failures of tension members and analyze and design tension members applying principles of LSM.

SCHEME OF STUDY

S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Tension members: Introduction, types of sections used, net sectional area, types of failures, design strength of members- gross section yielding, net section fracture, block shear, slenderness ratio, design of single and double angle tension member with bolted and welded connection for axial load only, introduction to lug angle, splice and gusset plate.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	13	0	Text book, video lectures, chalk board.	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Theory exam	Student will be asked to explain failures in tension member, design of tension member with bolted and welded connection for axial load	15	Test Paper + Rating scale	Question paper + rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of end semester theory exam

<table>
<tr><td rowspan="2">RGPV (Diploma Wing) Bhopal</td><td rowspan="2">SCHEME FOR LEARNING OUTCOME</td><td colspan="2">Branch Code</td><td colspan="2">Course Code</td><td>CO Code</td><td>LO Code</td><td rowspan="2">Format No. 4</td></tr>
<tr><td>C</td><td>0</td><td>3</td><td></td><td></td><td>3</td><td>1</td></tr>
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COURSE NAME	Design of Steel Structure
CO Description	Analyze and design tension members, compression members and column bases and prepare drawings of laced and battened columns and column bases applying principles of LSM.
LO Description	Explain terminologies of compression members and analyse and design single and double angles struts and compression members applying principles of LSM.

SCHEME OF STUDY

S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Compression members: Introduction, types of sections used, effective length, radius of gyration, slenderness ratio, design compressive stress, Analysis and design of axially loaded single and double angle strut, Analysis and design of axially loaded simple and built up column, Design of lacing angles and introduction to battens. (No numerical problem on battening)	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	15	0	Text book, video lectures, chalk board.	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Theory exam	Student will be asked to define terms, calculate load carrying capacity of column, design column for the given data.	15	Test Paper + Rating scale	Question paper + rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of end semester theory exam

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code		Course Code		CO Code	LO Code	Format No. 4
		C	0	3		3	3	

COURSE NAME	Design of Steel Structure
CO Description	Analyze and design tension members, compression members and column bases and prepare drawings of laced and battened columns and column bases applying principles of LSM.
LO Description	Identify column base and design slab base applying principles of LSM.

<div align="center">SCHEME OF STUDY</div>

S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Column Bases: Introduction, types of column bases – slab base, gusseted base, analysis and design of slab base subjected to axial loads only and concrete block, introduction to gusseted base (no numerical problem on gusseted base),	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	08	0	Text book, video lectures, chalk board.	NIL

<div align="center">SCHEME OF ASSESSMENT</div>

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Theory exam	Student will be asked to list and explain types of column base, design of slab base subjected to axial loads only.	10	Test Paper + Rating scale	Question paper + rating scale	External

<div align="center">ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</div>

<div align="center">Part of Internal Exam – Mid Semester Test-II</div>

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<tr><td colspan="2">C   0   3</td><td colspan="2"></td><td>3</td><td>4</td></tr>
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COURSE NAME	**Design of Steel Structure**
CO Description	**Analyze and design tension members, compression members and column bases and prepare drawings of laced and battened columns and column bases.**
LO Description	**Prepare drawings of laced and battened built up column, slab base and gusseted base.**

<div align="center">SCHEME OF STUDY</div>

S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	1. Draw plan and elevation of single and double laced built up column. 2. Draw plan and elevation of battened built up column. 3. Draw plan, elevation and section of slab base. 4. Draw plan, elevation and section of gusseted base.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	0	12	Text book, video lectures, chalk board.	NIL

<div align="center">SCHEME OF ASSESSMENT</div>

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Practical exam	Student will be asked to write design steps, draw plan, section and elevation of lace and battened built up column, slab base and gusseted base.		Rating scale/ Rubrics	Question paper + rating scale	Both

<div align="center">ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</div>

<div align="center">Part of Practical Exam : Internal Marks for Practical : 9 Marks</div>

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME		Branch Code		Course Code		CO Code	LO Code	Format No. **4**
			C	0	3			4	1	

COURSE NAME	Design of Steel Structure
CO Description	Design beams, calculate load on roof truss and analyse roof truss by graphical method.
LO Description	Classify beams and sections and analyse and design simple beams.

SCHEME OF STUDY

S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Beams: Introduction, types of sections, classification of cross sections – plastic, compact, semi – compact, slender, types of beams – laterally supported beams, laterally unsupported beams, plastic modulus (No numerical problem on plastic modulus), web buckling, web crippling, deflection, Analysis and design of laterally supported beams subjected to uniformly distributed load, Introduction to plate girder. (No numerical problem on plate girder)	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	12	0	Text book, video lectures, chalk board.	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Theory exam	Student will be asked to explain plastic modulus, classify beam and section, design simple beams.	15	Test Paper + Rating scale	Question paper + rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of end semester theory exam

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code		Course Code		CO Code	LO Code	Format No. 4
		C	0	3		4	2	

COURSE NAME	Design of Steel Structure
CO Description	Design beams, calculate load on roof truss and analyse roof truss by graphical method.
LO Description	Identify trusses, calculate loads on trusses and analyze roof truss by graphical method.

SCHEME OF STUDY

S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Roof Truss: types of steel truss, loads on roof truss, load combinations, combination of loads, calculation of loads on roof truss, spacing of truss, analysis of roof truss using graphical method, connections, design procedure of purlin (No numerical problem)	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	10	0	Text book, video lectures, chalk board.	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Theory exam	Student will be asked to calculate loads on trusses, analyze roof truss by graphical method for the given loading condition.	10	Test Paper + Rating scale	Question paper + rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Internal Theory Exam – Assignments/Quiz/Seminars/Presentation

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code		Course Code		CO Code	LO Code	Format No. **4**
				C	**0**	**3**		**4**	**3**	

COURSE NAME	Design of Steel Structure
CO Description	Design beams, calculate load on roof truss and analyze roof truss by graphical method.
LO Description	**Prepare drawings of beam to beam connections, beam to column connections, plate girder and roof truss.**

SCHEME OF STUDY

S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	1. Draw seated and framed beam to beam connections and seated and framed beam to column connections. 2. Draw plan and elevation of plate girder showing all details. 3. Draw a roof truss showing details of joints, purlins and roofing.	Interactive classroom teaching, assignments, quiz, presentation.	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	0	09	Text book, video lectures, chalk board.	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Practical exam	Student will be asked to explain design steps of beam, draw beam to beam connections, beam to column connection, plate girder and roof truss.		Rating scale/ Rubrics	Question paper + rating scale	Both

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of Practical Exam : Internal Marks for Practical : 06 Marks

Note: 1. Internal marks of practical exam is mentioned in Format 4.

2. External practical exam will be of maximum 30 marks and any of the practical mentioned in LO's can be assessed.