



IPS ACADEMY

Institute of Engineering and Science, Indore (M.P.)

A UGC Autonomous Institute,

Affiliated to Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal, (M.P.)

Bachelor of Technology (B.Tech.) Civil Engineering

Semester III [Second Year]



Third Semester

w.e.f. July 2023

S.No.	Course Type	Course Code	Course Title	Maximum Marks Allotted					Total Marks	Hrs./Week			Total Credits
				Theory			Practical			L	T	P	
				End Sem.	Mid Sem. Exam.	Quiz/ Assignment	End Sem	Term work Lab Work & Sessional					
1	BSC	MA04	Program Specific Mathematics	60	25	15	-	-	100	2	1	-	3
2	PCC	CE01	Building Design and Drawing	60	25	15	-	-	100	3	-	-	3
3	PCC	CE02	Engineering Geology and Remote Sensing	60	25	15	-	-	100	3	-	-	3
4	PCC	CE03	Surveying and Geomatics	60	25	15	-	-	100	2	1	-	3
5	PCC	CE04	Strength of Materials	60	25	15	-	-	100	2	1	-	3
6	HSMC	HS03	Innovation and Creativity	-	-	-	-	100	100	1	-	-	1
7	LC	CE01(P)	Building Design and Drawing Lab	-	-	-	60	40	100	-	-	2	1
8	LC	CE02(P)	Engineering Geology and Remote Sensing Lab	-	-	-	60	40	100	-	-	2	1
9	LC	CE03(P)	Surveying and Geomatics Lab	-	-	-	60	40	100	-	-	2	1
10	LC	CE04(P)	Strength of Materials Lab	-	-	-	60	40	100	-	-	2	1
11	MLC	MLC01	Professional Laws, Ethics, Gender, Human Values and Harmony (Internal Assessment)	60	25	15	-	-	100	1	-	-	Audit
			Total	300	125	75	240	360	1100	Total Credit			20

<ul style="list-style-type: none"> Basic Science Course (BSC), Program Specific Mathematics, (MA04) (Any One Course) <ul style="list-style-type: none"> (a) Numerical Method and Laplace Transforms (b) Differential Equations (c) Continuous and Discrete Transforms (d) Laplace Transforms and Complex Analysis 	<ul style="list-style-type: none"> Liberal Learning Course-II, LLC02 (Any One Course from NCC/NSO/NCA) <ul style="list-style-type: none"> A. NCC B. NSO <ul style="list-style-type: none"> Any one Sports at State Level C. NCA <ul style="list-style-type: none"> (a) Music (b) Dance (c) Photography (d) Cinematography (e) Podcasting (f) Theatre (g) Painting
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Semester IV [Second Year]



Fourth Semester

S.No.	Course Type	Course Code	Course Title	Maximum Marks Allotted					Total Marks	Hrs./Week			Total Credits
				Theory			Practical			L	T	P	
				End Sem.	Mid Sem. Exam.	Quiz/ Assignment	End Sem	Term work Lab Work & Sessional					
1	BSC	MA03	Probability and Statistics	60	25	15	-	-	100	2	1	-	3
2	PCC	CE05	Fluid Mechanics	60	25	15	-	-	100	2	1	-	3
3	PCC	CE06	Material Technology and Mix Design	60	25	15	-	-	100	3	-	-	3
4	PCC	CE07	Structural Analysis	60	25	15	-	-	100	2	1	-	3
5	PCC	CE08	Railway and Bridge Engineering	60	25	15	-	-	100	2	-	-	2
6	HSMC	HS04	Entrepreneurship and Principles of Management	60	25	15	-	-	100	1	-	-	1
7	IFC	EC01	Interdisciplinary Foundation Course-I	60	25	15	-	-	100	2	-	-	2
8	LC	CE05(P)	Fluid Mechanics Lab	-	-	-	60	40	100	-	-	2	1
9	LC	CE06(P)	Material Technology and Mix Design Lab	-	-	-	60	40	100	-	-	2	1
10	SBC	CE01(P)	Digital Surveying Skills	-	-	-	60	40	100	-	-	4	2
11	SBC	CE02(P)	Design Studio-I	-	-	-	60	40	100	-	-	2	1
12	LLC	LLC02	Liberal Learning Course –II	-	-	-	-	100	100	-	-	2	1
13	MLC	MLC02	Constitution of India	60	25	15	-	-	100	1	-	-	Audit
			Total	420	175	105	240	160	1100	Total Credit			23

- **Skill Based Courses, Design Studio (SBC) –I, CE02(P)**
 - Drafting Tool, Auto CAD (2D and 3D)

- **Interdisciplinary Foundation Course (IFC)–I, EC01**
(Offered by Electronics and Communication Department.)
 - Sensors and Automation



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Semester V [Third Year]



Fifth Semester

S.No.	Course Type	Course Code	Course Title	Maximum Marks Allotted					Total Marks	Hrs./Week			Total Credits
				Theory			Practical			L	T	P	
				End Sem.	Mid Sem. Exam.	Quiz/ Assignment	End Sem	Term work Lab Work & Sessional					
1	PCC	CE09	Advanced Structural Analysis	60	25	15	-	-	100	2	1	-	3
2	PCC	CE10	Design of RCC Structures	60	25	15	-	-	100	2	1	-	3
3	PCC	CE11	Transportation Engineering	60	25	15	-	-	100	3	-	-	3
4	PCC	CE12	Water Resources Engineering	60	25	15	-	-	100	2	1	-	3
5	HSMC	HS05	Humanities and Social Sciences Open Courses - I	60	25	15	-	-	100	2	-	-	2
6	IFC	CS01	Interdisciplinary Foundation Course-II	60	25	15	60	40	200	1	-	2	2
7	LC	CE09(P)	Advanced Structural Analysis Lab				60	40	100	-	-	2	1
8	LC	CE10(P)	Design of RCC Structures Lab				60	40	100	-	-	2	1
9	LC	CE11(P)	Transportation Engineering Lab				60	40	100	-	-	2	1
10	SBC	CE03(P)	Design Studio-II				60	40	100	-	-	4	2
11	MLC	MLC03	Environmental Studies (Internal Assessment)	60	25	15	-	-	100	1	-	-	Audit
			Total	360	150	90	300	200	1100	Total Credit			21

- **Skill Based Courses (SBC), Design Studio –II, CE03(P)**
 - Structural Design Tool, STAAD Pro

- **Humanities and Social Sciences Open Courses (HSMC) – I, HS05**
(Any One Course)
 - (a) English Language Proficiency
 - (b) German Language
 - (c) French Language
 - (d) Japanese Language
 - (e) Soft Skills and Interpersonal Communication

- **Interdisciplinary Foundation Course (IFC)- II, CS01**
(Offered by Computer Science and Engg. Deptt.)
 - IoT in Civil Engineering



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Semester VI [Third Year]



Sixth Semester

S.No.	Course Type	Course Code	Course Title	Maximum Marks Allotted					Total Marks	Hrs./Week			Total Credits
				Theory			Practical			L	T	P	
				End Sem.	Mid Sem. Exam.	Quiz/ Assignment	End Sem	Term work Lab Work & Sessional					
1	PCC	CE13	Design of Steel Structures	60	25	15	-	-	100	2	1	-	3
2	PCC	CE14	Geotechnical Engineering	60	25	15	-	-	100	2	1	-	3
3	PCC	CE15	Water Supply and Waste Water Engineering	60	25	15	-	-	100	3	-	-	3
4	PCC	CE16	Estimating and Costing in Civil Engineering	60	25	15	-	-	100	2	1	-	3
5	HSMC	HS06	Humanities and Social Sciences Open Courses - II	60	25	15	-	-	100	2	-	-	2
6	IOC	Code*	Interdisciplinary Open Course-I	60	25	15	-	-	100	3	-	-	3
7	LC	CE13(P)	Design of Steel Structures Lab	-	-	-	60	40	100	-	-	2	1
8	LC	CE14(P)	Geotechnical Engineering Lab	-	-	-	60	40	100	-	-	2	1
9	LC	CE15(P)	Water Supply and Waste Water Engineering Lab	-	-	-	60	40	100	-	-	2	1
10	SBC	CE04(P)	Design Studio-III	-	-	-	60	40	100	-	-	4	2
11	LLC	LLC03	Liberal Learning Course -III	-	-	-	-	100	100	-	-	2	1
12	MLC	MLC04	Intellectual Property Rights	60	25	15	-	-	100	1	-	-	Audit
13	PROJ	CE01	Internship-To be completed anytime during Fifth/Sixth semester (Minimum 15Days/90Hrs.)Its evaluation/credit to be added in Seventh Semester.										
			Total	360	150	90	240	260	1100	Total Credit			23

<ul style="list-style-type: none"> • Skill Based Courses (SBC), Design Studio –III, CE04(P) <ul style="list-style-type: none"> ➤ Software Based Field Project Skills (Drafting, Analysis, Design and Layout of a Structure) 	<ul style="list-style-type: none"> • Humanities and Social Sciences Open Courses (HSMC) – III, HS06 (Any One Course) <ul style="list-style-type: none"> (a) Industrial Psychology (b) Engineering Psychology (c) Engineering Economics (d) Finance for Engineers (e) Stress Management (f) Business Communication 	<ul style="list-style-type: none"> • Interdisciplinary Open Course (IOC)-I, (Code* as per below subjects) (Any One Course) <ul style="list-style-type: none"> ➤ Metro System and Engineering (EC03) ➤ JAVA (CS02) ➤ Data Science (DS01) ➤ Basics of Python (CI02) ➤ Artificial Intelligence and Machine Learning (CL01) ➤ Higher Mathematics (Operation Research) (MA01) 	<ul style="list-style-type: none"> • Liberal learning Course (LLC)-III, LLC03 (Any One Course) <ul style="list-style-type: none"> (a) Sociology (b) Interior Design (c) Graphic Design (d) Animation (e) Corporate Culture
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Semester VII [Fourth Year]



Seventh Semester

S.No.	Course Type	Course Code	Course Title	Maximum Marks Allotted					Total Marks	Hrs./Week			Total Credits
				Theory			Practical			L	T	P	
				End Sem.	Mid Sem. Exam.	Quiz/ Assignment	End Sem	Term work Lab Work & Sessional					
1	PCC	CE17	Foundation Engineering	60	25	15	-	-	100	2	1	-	3
2	PCC	CE18	Design of Advanced RCC Structures	60	25	15	-	-	100	2	1	-	3
3	PCC	CE19	Design of Hydraulic Structures	60	25	15	-	-	100	2	1	-	3
4	PEC	CE01	Professional Elective Course-I	60	25	15	-	-	100	3	-	-	3
5	PEC	CE02	Professional Elective Course-II	60	25	15	-	-	100	3	-	-	3
6	LC	CE17(P)	Foundation Engineering Lab	-	-	-	60	40	100	-	-	2	1
7	LC	CE18(P)	Design of Advanced RCC Structures Lab	-	-	-	60	40	100	-	-	2	1
8	PROJ	CE02	Project Phase -I	-	-	-	60	40	100	-	-	8	4
Evaluation of Internship- Completed in Fifth/Sixth Semester				-	-	-	-	100	100	-	-	4	2
			Total	300	125	75	180	220	900	Total Credit			23

- Professional Elective Course (PEC) -I, CE01 (Any One Course)**

- (a) Advanced Water resources Engineering
- (b) Traffic Engineering
- (c) Advanced Fluid Mechanics
- (d) Urban and Town Planning
- (e) Building Services

- Program Elective Course (PEC)-II, CE02 (Any One Course)**

- (a) Construction Planning and Management
- (b) Air and Noise Pollution Control
- (c) Integrated Waste Management
- (d) Geo-Informatics Engineering
- (e) Marine Construction



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Semester VIII [Fourth Year]



Eighth Semester (Scheme A)

S.No.	Course Type	Course Code	Course Title	Maximum Marks Allotted					Total Marks	Hrs./Week			Total Credits
				Theory			Practical			L	T	P	
				End Sem.	Mid Sem. Exam.	Quiz/ Assignment	End Sem	Term work Lab Work & Sessional					
1	PEC	CE03	Professional Elective Course-III	60	25	15	-	-	100	3	-	-	3
2	IOC	Code*	Interdisciplinary Open Course-II	60	25	15	-	-	100	3	-	-	3
3	SBC	CE05(P)	Structural Health Monitoring Skills	-	-	-	60	40	100	-	-	4	2
4	PRO	CE03(A)	Project Phase -II	-	-	-	120	80	200	-	-	16	8
			Total	120	50	30	180	120	500	Total Credit			16

Eighth Semester (Scheme B)

S.No.	Course Type	Course Code	Course Title	Maximum Marks Allotted					Total Marks	Hrs./Week			Total Credits
				Theory			Practical			L	T	P	
				End Sem.	Mid Sem. Exam.	Quiz/ Assignment	End Sem	Term work Lab Work & Sessional					
1	PEC	CE03	Professional Elective Course-III	60	25	15	-	-	100	3	-	-	3
2	IOC	Code*	Interdisciplinary Open Course-II	60	25	15	-	-	100	3	-	-	3
3	SBC	CE05(P)	Structural Health Monitoring Skills	-	-	-	60	40	100	-	-	4	2
4	PRO	CE03(B)	Internship and Project (Industry/Corporate/Academia)	-	-	-	120	80	200	-	-	16	8
			Total	120	50	30	180	120	500	Total Credit			16

Note:

➤ In Eighth Semester, students may opt for 'SCHEME A' or 'SCHEME B'.

<ul style="list-style-type: none"> Professional Elective Course (PEC)-III, CE03 (Any One Course) <ul style="list-style-type: none"> (a) Design of Advanced Steel Structures (b) Structural Dynamics (c) Design of Prestressed Structures (d) Ground Improvement Techniques (e) Pavement Design 	<ul style="list-style-type: none"> Interdisciplinary Open Course (IOC)-II, (Code* as per below subjects) (Any One Course) <ul style="list-style-type: none"> ➤ Disaster Management- Forecasting and Mitigation (FT01) ➤ Disaster Management- Legislation (FT02) ➤ Occupation Health and First Aid (FT03) ➤ Principles of Safety Management (FT05) ➤ Any MOOC Course, Minimum 12 Weeks, (AICTE/SWAYAM/ Other Relevant Online Learning Platform) 	<ul style="list-style-type: none"> Skill Based Courses (SBC), Structural Health Monitoring Skills, CE05(P) <ul style="list-style-type: none"> ➤ Health monitoring of existing structures through "Non Destructive Testing Skills".
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