

Course Articulation Matrix of Basic Civil Engineering (RCI5C003)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C RCI5C003.1	Understand and apply various Civil Engineering terminologies, and study various building materials, their use, and properties.	3	-	-	-	2	2	-	-	-	-	-	2	2		
C RCI5C003.2	Study the basic Surveying and use of different modern surveying instruments.	3	2	3	1	3	2	3	1	2	-	2	2	1	1	
C RCI5C003.3	Understand fundamental of soil and its classification, foundations, and fundamentals of Irrigation Engineering.	3	3	-	-	3	2	3	1	-	-	-	2	2		1
C RCI5C003.4	Study the concept of Transport, Traffic and Urban Engineering.	3	3	1	-	3	3	3	1	-	-	2	2	1		
Average		3.0 0	2.6 7	2.0 0	1.0 0	2.7 5	2.2 5	3.0 0	1.0 0	2.0 0	0.0 0	2.0 0	2.00	1.50	1.00	1.0 0

Course Articulation Matrix of Mechanics of Solids (RME3C001)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C RME3C001.1	Able to understand the concept of stress, strain and strain energy and Analyze Various structural members subjected to Thermal Stress.	3	3	2	3	-	3	-	-	2	-	-	3	3	2	-
C RME3C001.2	Understand plane stress and strain & Draw Mohr's Circle diagram. Apply thin pressure vessel formulas to determine various stress and strain.	3	3	2	2	-	-	-	-	2	-	-	3	3	2	1
C RME3C001.3	Evaluate Shear force and bending moment of various beam subjected to different loading conditions.	3	3	2	2	-	-	-	-	2	-	-	3	3	2	1
CRME3C001.4	Calculate slope and deflection of a beam by various methods, understand the behaviour of columns and circular shaft subjected to different loading conditions.	3	2	2	2	-	-	-	-	2	-	-	3	3	2	-
Average		3.00	2.75	2.00	2.25	0.00	3.00	0.00	0.00	2.00	0.00	0.00	3.00	3.00	2.00	1.00

Course Articulation Fluid Mechanics & Hydraulics Machines (RME3C002)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C RME3C002.1	Define fluid and Understand Fluid properties, Buoyancy, stability of submerged and floating bodies, Manometry, and static fluid forces on different surfaces.	3	2	3	2	3	2	2	3	3	2	2	3	-	-	-
C RME3C002.2	Understand various types of flow, Mass Momentum and energy conservation and related equations.	3	2	2	1	-	2	3	2	2	3	1	2	1	3	1
C RME3C002.3	Understand Bernoulli's equation and its applications and Determine major and minor losses in case of pipes and its power transmission.	3	3	3	3	3	2	-	2	3	2	2	2	-	-	1
C RME3C002.4	Understand and classify different Turbines and pump, plot curves for various efficiencies and draw velocity triangles for the same.	3	2	3	3	3	3	3	3	3	2	3	3	-	3	-
Average		3.00	2.25	2.75	2.25	3.00	2.25	2.67	2.50	2.75	2.25	2.00	2.50	1.00	3.00	1.00

Course Articulation Matrix of Transportation Engineering (RCI4C002) (Fourth Semester)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C RCI4C002.1	To learn the importance of highway transportation and Principle of highway planning.	3	2	1	-	3	3	3	3	3	3	-	3	3	2	1
C RCI4C002.2	Understand the Highway Materials and introduction to Traffic Engineering.	3	3	-	-	3	3	3	3	3	3	-	3	2	3	-
CRCI4C002.3	Learn the basics design of highway pavements.	3	3	3	2	3	3	3	2	3	3	3	3	3	3	-
CRCI4C002.4	Understand the concept of highway construction and maintenance.	3	2	3	-		3	3	2	3	2	3	3	2	3	1
Average		3.00	2.50	2.33	2.00	3.00	3.00	3.00	2.50	3.00	2.75	3.00	3.00	2.50	2.75	1.00

Course Articulation Matrix of Concrete Technology (RCI4D002)(Fourth Semester)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C RCI4D002.1	Understand the theoretical concept and the physical & chemical properties of Concrete material which includes Cement, Admixtures and Aggregates.	3	-	2	3	-	2	-	2	2	-	2	3	3	-	2
C RCI4D002.2	Study the behavior of concrete at its fresh and hardened state, describe and carry out tests of Fresh concrete.	3	-	2	3	-	2	-	2	2	-	2	2	3	-	2
C RCI4D002.3	Understand the properties & tests of hardened concrete, factors affecting Elasticity, creep & Shrinkage in concrete.	3	2	2	3	-	2	-	2	2	-	2	2	3	-	2
C RCI4D002.4	Learn about different types of Special & No fines concrete and their uses, as well as the concept and factors influencing concrete mix design utilising various methods.	3	2	3	3	3	2	3	2	2	-	2	2	3	-	2
Average		3.00	2.00	2.25	3.00	3.00	2.00	3.00	2.00	2.00	0.00	2.00	2.25	3.00	0.00	2.00

Course Articulation Matrix of Structural Analysis-I (RCI4C003)(Fourth Semester)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C RCI4C003.1	Ability to distinguish between determinate and indeterminate structures.	3	2	2	-	-	2	-	-	2	-	-	3	2	2	-
CRCI4C003.2	Learn different theorems and methods of analyzing a structure.	3	3	3	-	-	2	-	-	2	-	-	3	2	2	1
C RCI4C003.3	Ability to analyze indeterminate plane trusses.	3	3	2	-	-	2	-	-	2	-	-	3	2	2	1
CRCI4C003.4	Ability to use influence line diagrams as a valid tool for structural analysis.	3	3	3	-	-	2	-	-	2	-	-	3	2	2	-
Average		3.00	2.75	2.50	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	3.00	2.00	2.00	1.00

Course Articulation Matrix of Geotechnical Engineering (RCI5C003)(Fifth Semester)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C RCI5C003.1	Understand different types of soils, basic properties and their importance in geotechnical engineering.	3	-	2	1	-	1	-	1	2	-	1	3	2	-	-
C RCI5C003.2	The students will learn the fundamentals and be able to deal with practical problems involving calculation of soil stresses, permeability, and seepage, as well as flow net diagrams.	3	3	3	3	-	3	2	1	2	-	2	3	3	2	2
C RCI5C003.3	Understanding of the basic concepts of soil compaction, factors that influence soil compaction, and field testing techniques.	3	2	3	3	-	3	2	3	2	-	3	3	3	-	2
C RCI5C003.4	Evaluate the shear strength & stress distribution of soil also solve practical problems related to consolidation settlement.	3	3	3	3	3	2	3	1	2	-	3	3	3	2	2
Average		3.00	2.67	2.75	2.50	3.00	2.25	2.33	1.50	2.00	0.00	2.25	3.00	2.75	2.00	2.00

Course Articulation Matrix of Structural Analysis-II (RCI5D001)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C RCI5D001.1	To know about different displacement methods of analysis of structures.	3	2	2	2	2	2	3	-	-	-	3	-	2	3	-
C RCI5D001.2	Able to analyse two hinged and fixed arches and suspension cables.	3	3	3	3	3	3	-	3	-	-	-	-	3	3	-
C RCI5D001.3	Learn to apply matrix methods of analysis.	3	3	2	2	3	-	-	-	3	-	-	-	3	3	2
C RCI5D001.4	Understand the concept of Plastic Analysis.	3	3	3	3	-	-	-	-	-	3	-	3	3	2	2
Average		3.00	2.75	2.50	2.50	2.67	2.50	3.00	3.00	3.00	3.00	3.00	3.00	2.75	2.75	2.00

Course Articulation Matrix of Railway and Airport Engineering (RCI5D004)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C RCI5D004.1	To expose the students to Railway engineering.	3	3	-	-	-	-	-	-	2	2	2	2	2	2	-
C RCI5D004.2	Students will also know the planning and design of airport and its components in layout.	3	3	3	-	-	3	-	-	3	3	3	3	-	3	2
C RCI5D004.3	The planning of harbor and docks.	3	3	3	1	3	-	-	-	3	-	1	3	-	-	2
C RCI5D004.4	To understand various Inland waterways in India and their characteristics	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Average		3.00	3.00	3.00	1.00	3.00	3.00	0.00	0.00	2.67	2.50	2.00	2.67	2.00	2.50	2.00

Course Articulation Matrix of Design of Steel Structures (RCI6C001)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C RCI6C001.1	Gain knowledge about basic properties of steel and know about different connections.	3	3	3	-	-	-	-	-	2	-	2	3	3	2	3
C RCI6C001.2	Learn about tension and compression members and their design in steel structures.	3	3	3	2	-	-	-	-	2	-	2	3	3	2	-
C RCI6C001.3	Design of beams.	3	3	3	2	-	-	-	-	2	-	2	3	3	2	3
C (RCI6C001.4	Learn about plate girders and roof trusses.	3	3	3	-	-	-	-	-	2	-	2	3	3	2	-
Average		3.00	3.00	3.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	3.00	3.00	2.00	3.00

Course Articulation Matrix of : Hydrology & Irrigation Engineering (RCI6C002)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C RCI6C002.1	Understand the basic concepts of hydrology and integrate the physical hydrological processes.	3	-	-	-	-	-	-	-	-	3	-	3	1		-
C RCI6C002.2	Study the various process, measurement and estimation of hydrological components: evaporation, infiltration, stream flow etc.	3	1	-	-	-	-	3	-	-	3	-	2		1	1
C RCI6C002.3	Understand the basics of irrigation and apply them to design irrigation canals.	3	3	2	2	3	3	3	-	-	3	3	2		1	1
C RCI6C002.4	Study various types of Cross-Drainage Works and dams.	3	3	2	2	3	3	3	-		3	3	2	2		-
Average		3.00	2.33	2.00	2.00	3.00	3.00	3.00	0.00	0.00	3.00	3.00	2.25	1.50	1.00	1.00

Course Articulation Matrix of Environment Geo Technique (RCI6D003)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
RCI6D003.1	Understand the concept of scope and importance waste generation.	3	2	-	-	3	-	-	2	-	2	-	3	-	-	-
RCI6D003.2	Learn various forms of waste and their properties.	3	3	-	2	2	3	-	2	-	2	-	2	-	-	2
RCI6D003.3	Learn selection of waste disposal sites and components of landfills.	3	3	-	2	3	3	-	2	-	2	-	2	-	2	2
RCI6D003.4	Learn the basics of slurry deposition, soil washing and bio-remediation.	3	2	-	2	3	-	-	2	-	-	-	3	-	2	-
Average		3.00	2.50	0.00	2.00	2.75	3.00	0.00	2.00	0.00	2.00	0.00	2.50	0.00	2.00	2.00

Course Articulation Matrix of Prestressed Concrete (RCI7D001)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C RCI7D001.1	The student will be able to understand the basic concepts about prestressed concrete and analyse the same.	3	3	2	2	-	-	-	-	2	-	1	2	3	2	2
C RCI7D001.2	The student will be able to design prestressed beams.	3	3	3	-	-	3	-	-	2	-	1	2	3	2	2
C RCI7D001.3	The student will be able to select the prestress concrete members and calculate the deflections.	3	3	2	-	-	-	-	-	2	-	1	2	3	2	-
C RCI7D001.4	Learn about different prestressed concrete sections.	3	3	2	-	-	-	-	-	2	-	1	2	3	2	-
Average		3.00	3.00	2.25	2.00	0.00	3.00	0.00	0.00	2.00	0.00	1.00	2.00	3.00	2.00	2.00

Course Articulation Matrix of Water Resource Engineering (RCI7D006)

COs	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C RCI7D006.1	Understand hydrologic cycle and methods to prepare different data related to water resources.	3	1	2	-	-		3	-	3	3	-	3	3	-	2
C RCI7D006.2	Learn various methods to estimate rainfall.	3	3	3		3	-	3	-	3	3	-	3	3	-	3
C RCI7D006.3	Learn the basics of drought.	3	3	3	2	3	-	2	-	3	3	-	3	2	-	3
C RCI7D006.4	Use concepts of Open Channel Flow to identify the most economical section of a channel.	3	3	2	-	1	-	2	-	3	3	2	3	3	3	-
Average		3.00	2.50	2.50	2.00	2.33	0.00	2.50	0.00	3.00	3.00	2.00	3.00	2.75	3.00	2.67