

Bharath Institute of Higher Education and Research  
Department of Civil Engineering

Students Outcome Mapping

Subject Code	Course Title	Theory	Laboratory	SOs										
				(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
BEN101	English – I	✓				✓			✓	✓				
BMA101	Mathematics – I	✓		✓		✓		✓						
BPH101	Engineering Physics – I	✓				✓	✓					✓		
BCH101	Engineering Chemistry – I	✓		✓							✓	✓		
BCS101	Fundamentals of Computing and Programming	✓		✓										✓
BBA101	Personality Development	✓					✓		✓	✓				
BBT 102	Biology for Engineers	✓		✓		✓								
BME101	Engineering Graphics – E	✓		✓		✓								
BME103	Basic Mechanical Engineering	✓		✓				✓						✓
BCM1L1	Basic Civil and Mechanical Engineering Practices Laboratory		✓		✓			✓			✓			
BEN201	English – II	✓							✓	✓				
BMA201	Engineering Mathematics – II	✓		✓				✓						
BPH201	Engineering physics – II	✓		✓	✓			✓						
BCH201	Engineering Chemistry – II	✓		✓							✓	✓		
BFI 201	Foreign / Indian Language	✓							✓	✓				
BME202	Engineering Mechanics	✓		✓				✓						

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BEE201	Basics Electrical and Electronics Engineering	✓		✓		✓								✓
BCS2L2	Computer Practices Lab		✓		✓			✓						✓
BEE2L1	Basics Electrical and Electronics Engineering Practices Laboratory		✓		✓									✓
BPC2L1	Physics and Chemistry Laboratory		✓									✓		
BMA301	Engineering Mathematics – III	✓		✓				✓						
BCE301	Applied Mechanics	✓		✓				✓						
BCE302	Surveying – I	✓		✓				✓						✓
BCE303	Building Construction Technology	✓				✓	✓							
BCE304	Fluid Mechanics	✓		✓										
BCE305	Engineering Earth Science	✓		✓						✓				
BCE3L1	Surveying Practical – I		✓			✓						✓		✓
BCE3L2	Strength Of Materials Lab		✓		✓	✓		✓						
BMA402	Numerical Methods	✓		✓				✓						
BCE 401	Theory of Structures	✓		✓		✓		✓						
BCE 402	Surveying – II	✓		✓				✓						✓
BCE 403	Soil Mechanics	✓		✓	✓		✓							
BCE 404	Basic Structural Design	✓		✓		✓		✓						✓
BCE 405	Transportation Engineering	✓				✓	✓							

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BCE 406	Environmental Studies	✓				✓					✓		✓	
BCE4L1	Surveying Practical II		✓	✓				✓						✓
BCE4L2	Soil Mechanics Lab		✓		✓		✓							
BMA501	Probability and Statistics for Civil Engineers	✓		✓				✓						
BCE 501	Structural Analysis – I	✓		✓				✓						
BCE 502	Applied Hydraulic Engineering	✓		✓			✓	✓						
BCE 503	Foundation Engineering	✓		✓		✓	✓							✓
BCE 504	Reinforced Concrete Structures – I	✓		✓		✓		✓						
BCE 505	Environmental Engineering	✓				✓					✓			
BCE5L1	Construction Engineering Lab		✓		✓		✓					✓		
BCE5L2	Fluid Mechanics and Machinery Lab		✓	✓	✓									
BCE 601	Structural Analysis – II	✓		✓				✓						
BCE 602	Reinforced Concrete Structures – II	✓		✓		✓		✓						
BCE 603	Irrigation Engineering	✓				✓	✓							
BSS601	Value Education and Professional Ethics	✓					✓		✓	✓	✓			
BCE6L1	Computer Aided Building Drawing		✓			✓	✓							✓
BCE6L2	Environmental Engineering Lab		✓			✓					✓			

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BCE 701	Estimation and Costing	✓		✓				✓						
BCE 702	Computer Aided Design of Structures	✓				✓	✓	✓				✓		✓
BCE 703	Design of Steel Structures	✓		✓		✓		✓						
BCE 704	Management Concepts for Civil Engineers	✓					✓		✓					✓
BCE7L1	Computer Aided Design Of Structures Laboratory		✓			✓	✓							✓
BCE7L2	Computer Aided Design and Drafting Laboratory(R.C.C, Steel, Irrigation & Environment)		✓		✓	✓		✓						
BCE 8P1	Project Work and Viva Voce		✓	✓	✓	✓					✓		✓	✓
<b>CORE ELECTIVE I</b>														
BCE051	Concrete Technology	✓			✓		✓							
BCE052	Industrial Structures	✓			✓	✓		✓						
BCE053	Advanced Construction Techniques	✓				✓	✓							
BCE054	Construction Planning, Scheduling and Control	✓					✓		✓					✓
BCE055	Industrial Waste Treatment and Disposal	✓			✓						✓			
BCE056	Solid and Hazardous Waste Management	✓									✓		✓	

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<b>CORE ELECTIVE II</b>													
BCE057	Design of R.C. Framed Structures	✓		✓		✓		✓					
BCE058	Tall Structures	✓		✓		✓		✓					
BCE059	Safety Practices in Construction	✓					✓		✓				
BCE060	Modern Construction Materials	✓				✓	✓						
BCE061	Air and Noise Pollution	✓			✓						✓		
BCE062	Environmental Impact Assessment	✓									✓	✓	
<b>CORE ELECTIVE III</b>													
BCE063	Pre stressed Concrete Structures	✓		✓		✓		✓					
BCE064	Advanced Concrete Design	✓		✓	✓	✓							
BCE065	Construction Equipment	✓					✓						✓
BCE066	Prefabrication and Construction Techniques	✓					✓						✓
BCE067	Environmental Health Engineering	✓			✓						✓		
BCE068	Indore Air Quality	✓					✓				✓		
<b>Non Major Elective (NE) - I</b>													
BCE069	Matrix Methods of Structural Analysis	✓		✓		✓		✓					
BCE070	Concrete Structures	✓		✓		✓		✓					
BCE071	Shoring, Scaffolding and	✓					✓		✓				

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	Formwork													
BCE072	Construction Project Management	✓				✓	✓							
BCE073	Ground Water Contamination and Transport Modeling	✓			✓						✓		✓	
BCE074	Physical and Chemical Treatment of Water and Wastewater	✓			✓						✓		✓	
BCE075	Ground Water Engineering	✓				✓					✓			
BCE076	Coastal Engineering	✓		✓		✓	✓							
<b>Non Major Elective (NE) - II</b>														
BCE077	Finite Element Analysis	✓		✓		✓		✓						
BCE078	Structures on Expansive Soil	✓			✓	✓								
BCE079	Quality Control and Assurance in Construction	✓					✓		✓					
BCE080	Construction Personnel Management	✓				✓	✓							
BCE081	Water and Sewage Conveyance	✓		✓			✓		✓					
BCE082	Environmental Engineering Structures	✓			✓	✓		✓						
BCE083	Soil Dynamics and Machine Foundation	✓		✓		✓		✓						
BCE084	Hydrology	✓		✓	✓									
<b>Open Elective (OE) -I</b>														
BCE093	Remote Sensing and GIS	✓					✓							✓

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BBA008	Total Quality Management	✓					✓		✓				✓	
BCE094	Optimization Techniques	✓		✓			✓							✓
<b>Open Elective (OE) -II</b>														
BCE095	Geographic Information System	✓					✓							✓
BCE096	Engineering Economics	✓					✓		✓				✓	
BCE097	Renewable Sources of Energy	✓		✓	✓						✓			

### Student Outcome (SOs) Mapping

