



Construction Engineering and Management Program

B.Sc. Program Specification

Bylaw 2023 according to NARS2018

Benha University – Benha Faculty of Engineering

2023-2024

Compulsory Courses

Level	Courses		Pr. Req.	Weekly Contact Hours					Assessment					
	Code	Course Title		Cr. Hrs	Lect.	Lab.	Tut.	Total	Mid 1	Mid 2	PE/OE	St. Act.	Final	
Level (0-1)	Fall Sem.	FRB001	Analytical geometry & Linear Algebra	.....	3	2	0	2	4	30	20		10	40
		FRB003	Statics	.....	3	2	0	2	4	30	20		10	40
		FRB005	Waves and Heat	.....	3	2	2	1	5	30		20	10	40
		FRB007	Chemistry for Engineers	.....	4	3	2	1	6	30		20	10	40
		FRM009	Engineering Graphics	.....	2	0	0	4	4	30	20		10	40
		UHS101	Foreign Language	.....	2	2	0	0	2	30	20		10	40
		UHS103	Social issues	.....	2	2	0	0	2	30	20		10	40
Level (0-2)	Spring Sem.	FFB002	Integration & Multivariable functions	FRB001	3	2	0	2	4	30	20		10	40
		FRB004	Dynamics	FRB003	3	2	0	2	4	30	20		10	40
		FRB006	Electricity and Magnetism	.....	3	2	2	1	5	30		20	10	40
		FRM008	Production Systems Engineering	.....	2	1	3	0	4	30		20	10	40
		FRM010	Computer Aided Drafting	FRM009	2	1	2	0	3	30	20	40	10	...
		UHS102	Information and Communication Technology	.....	2	2	0	0	2	30	20		10	40
		FRE012	Computer Programming Fundamentals	.....	2	0	2	2	4	30	20	40	10	...
Level (1-1)	Fall Sem.	FRB101	Engineering Differential Equations	FRB002	3	2	0	2	4	30	20		10	40
		CMC101	Structural Analysis-1	FRB003	3	2	0	2	4	30	20		10	40
		CMC103	Properties and Testing of Construction Materials	FRB003	2	2	1	0	3	30		20	10	40
		FRB103	Environmental Pollution and Industrial Safety	FRB007	2	2	1	0	3	30		20	10	40
		CMC105	Surveying for Engineers-1	FRB002	3	2	2	1	5	30		20	10	40
		CMA107	Basic Architectural Engineering	FRM009	2	1	0	2	3	30	20		10	40
		CMC109	Fluid Mechanics	FRB005	2	2	1	0	3	30		20	10	40

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Level (1-2)	Spring Sem.	FRB102	Water Chemistry	FRB007	3	2	2	0	4	30		20	10	40
		CMC102	Structural Analysis- 2	CMC101	3	2	0	2	4	30	20		10	40
		CMC104	Construction Materials and Concrete Technology	CMC103	3	2	2	1	5	30		20	10	40
		CMC106	Construction Engineers Drawing	FRM010	2	1	3	0	4	30	20	40	10	....
		CMC108	Surveying for engineers 2	CMC105	3	2	0	2	4	30	20		10	40
		CMA110	Building Construction	CMA107	2	2	0	1	3	30	20		10	40
		CMC112	Hydraulics for Construction	CMC109	2	2	1	0	3	30		20	10	40
Level (2-1)	Fall Sem.	FRB201	Applied Engineering Probability and Mathematical Statistics	.....	3	2	2	0	4	30		20	10	40
		CMC201	Hydrology and Water Resources	CMC112	3	2	0	2	4	30	20		10	40
		CMC203	Soil Mechanics	CMC103	3	2	2	1	5	30		20	10	40
		CMC205	Design of Metallic Structures-1	CMC102	3	2	0	2	4	30	20		10	40
		CMC207	Design of R.C. Structures-1	CMC102 + CMC104	3	2	0	2	4	30	20		10	40
		UHS XXX	Humanities Elective I	.....	2	2	0	0	2	30	20		10	40
Level (2-2)	Spring Sem.	FRB104	Engineering Numerical Analysis	FRB101	3	2	2	0	4	30		20	10	40
		CMC202	Transportation and Traffic Engineering	FRB201	3	2	1	2	5	30		20	10	40
		CMC204	Geotechnical Engineering & Foundations	CMC203	3	2	2	1	5	30		20	10	40
		CMC206	Construction Project Management	.....	3	2	0	2	4	30	20		10	40
		CMC208	Design of R.C. Structures-2	CMC207	3	2	0	2	4	30	20		10	40
		CMA210	Introduction to City Planning	.....	2	2	0	1	3	30	20		10	40
Level (3-1)	Fall Sem.	CMM301	Technical Installations in Buildings	.....	2	1	3	0	4	30		20	10	40
		CMC303	Methods and Equipment for Construction	CMC207	3	2	0	2	4	30	20		10	40
		CMC305	Design and Construction of Foundations & Earth Retaining Structures	CMC204	3	2	0	2	4	30	20		10	40
		CMC307	Cost Engineering & Quantity Surveying	CMC206	3	2	0	2	4	30	20		10	40

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	Code	Course Title		Cr. Hrs	Lect.	Lab.	Tut.	Total	Mid 1	Mid 2	PE/OE	St. Act.	Final	
	CMC 3XX	Elective I	*	3	2	0	2	4	30	20		10	40	
	CMC309	Quality Control & Inspection of Structures	CMC207	2	2	0	1	3	30	20		10	40	
	UHS XXX	Humanities Elective II	.....	2	2	0	0	2	30	20		10	40	
Level (3-2)	Spring Sem.	CMC 302	Sanitary Engineering	CMC112	3	2	2	1	5	30		20	10	40
		CMC 304	Construction and Site Safety	CMC303	2	2	0	1	3	30	20		10	40
		CMC 3XX	Elective II	*	3	2	0	2	4	30	20		10	40
		CMC 306	Project Planning, Scheduling, and Control	CMC206	3	2	1	2	5	30		20	10	40
		CMC 3XX	Elective III	*	3	2	0	2	4	30	20		10	40
		UHS 104	Professional Ethics	.....	2	2	0	0	2	30	20		10	40
		CMC 308	Senior Design Project I	**	2	0	4	0	4				50	50
Level (4-1)	Fall Sem.	CMC 401	Project Finance & Management	CMC307	3	2	1	2	5	30		20	10	40
		CMC 4XX	Elective IV	*	3	2	0	2	4	30	20		10	40
		CMC 4XX	Elective V	*	3	2	0	2	4	30	20		10	40
		CMC 403	Construction Project Specifications, Bids, and Contracts	CMC307	2	2	0	1	3	30	20		10	40
		CMC 4XX	Elective VI	*	3	2	2	0	4	30		20	10	40
		CMC 405	Senior Design Project II	CMC308	3	1	4	0	5				50	50
		UHS XXX	Humanities Elective III	.....	2	2	0	0	2	30	20		10	40
FT	FT 1	Field Training I	***										Pass	
	FT 2	Field Training II	****										Pass	

** The student can register for the Senior Design Project course after passing 70% of the program cr. hr_s, 112 hr_s

*** Completion of 65 Credit Hours

**** Completion of 96 Credit Hours

List of Elective Courses

Level	Courses		Pr. Req.	Weekly Contact Hours					Assessment					
	Code	Course Title		Cr.Hrs	Lect.	Lab.	Tut.	Total	Mid 1	Mid 2	PE/OE	St. Act.	Final	
Elective Course-1	3-1	CMA311	Building Technology	.....	3	2	0	2	4	30	20		10	40
		CMC313	Highway Facilities	CMC202	3	2	0	2	4	30	20		10	40
		CMC315	Bridge Building Technology	CMC208	3	2	0	2	4	30	20		10	40
Elective Course-2	3-2	CMC310	Value Engineering in the Construction Industry	....	3	2	0	2	4	30	20		10	40
		CMC312	Engineering Economy	.....	3	2	0	2	4	30	20		10	40
		CMC314	Construction Quality Management	....	3	2	0	2	4	30	20		10	40
Elective Course-3	3-2	CMC316	Dynamic of Structures	CMC102	3	2	0	2	4	30	20		10	40
		CMC318	Design of Metallic Structures-2	CMC205	3	2	0	2	4	30	20		10	40
		CMC320	Prefabricated Water and Prestressed Concrete Structures	CMC208	3	2	0	2	4	30	20		10	40
Elective Course-4	4-1	CMC407	Engineering for a Sustainable Environment	....	3	2	0	2	4	30	20		10	40
		CMC409	Environmental Engineering	FRB102	3	2	0	2	4	30	20		10	40
		CMC411	Special Topics in Structural Analysis	CMC102	3	2	0	2	4	30	20		10	40
Elective Course-5	4-1	CMC413	Advanced Engineering Materials	CMC104	3	2	0	2	4	30	20		10	40
		CMA415	Finishing Materials Technology	.....	3	2	0	2	4	30	20		10	40
		CMA417	Principles and Approaches of Smart Cities	CMA210	3	2	0	2	4	30	20		10	40
Elective Course-6	4-1	CMC419	Modeling and Simulation of Construction Systems	CMC306	3	2	2	0	4	30		20	10	40
		CMC421	Geographic Information System GIS	CMC108	3	2	2	0	4	30		20	10	40
		CMC423	Modeling of structures	CMC102	3	2	2	0	4	30		20	10	40

List of Humanities Elective Courses

Courses		Weekly Contact Hours					Assessment				
Code	Course Title	Cr.Hrs	Lect.	Lab.	Tut.	Total	Mid 1	Mid 2	PE/OE	St. Act.	Final
UHS 201	Principles of Entrepreneurship and Project Management	2	2	0	0	2	30	20	0	10	40
UHS 203	Human Resources Management	2	2	0	0	2	30	20	0	10	40
UHS 301	Communication and Presentation Skills	2	2	0	0	2	30	20	0	10	40
UHS 302	Leadership Skills	2	2	0	0	2	30	20	0	10	40
UHS 801	Research Methodologies	2	2	0	0	2	30	20	0	10	40
UHS 803	Thinking Skills	2	2	0	0	2	30	20	0	10	40

