

**INTERNATIONAL BURCH UNIVERSITY
FACULTY OF ENGINEERING AND NATURAL SCIENCES
CIVIL ENGINEERING STUDY PROGRAM**



FIRST CYCLE STUDY PROGRAM SPECIFICATION

SARAJEVO

2020

TABLE OF CONTENTS

CURRICULUM OF CIVIL ENGINEERING STUDY PROGRAM	3
<i>Study Track 1: Structural Engineering</i>	<i>4</i>
<i>Study Track 2: Environmental and Water Resources Engineering.....</i>	<i>5</i>
<i>Study Track 3: Transport Infrastructure Engineering</i>	<i>6</i>
<i>List of Elective Courses (University Level / Faculty Level / Study Program Level).....</i>	<i>7</i>

CURRICULUM OF CIVIL ENGINEERING STUDY PROGRAM

1. Semester				
CODE	COURSE NAME	T	P	ECTS
MTH 101	Calculus I	3	2	6
CE 101	Mechanics	2	3	6
CE 102	Computer Aided Drafted Design (CADD)	0	3	3
CE 107	Elements of Buildings	1	3	5
CE 104	Building Materials I	3	0	3
ELT 117	Advanced Reading and Vocabulary I	2	2	5
XXX xxx	University Level Elective I	0	2	2
Total		11	15	30

2. Semester				
CODE	COURSE NAME	T	P	ECTS
MTH 102	Calculus II	3	2	6
CE 105	Statics I	3	3	6
CE 106	Building Materials II	3	0	3
CE 103	Constructive Geometry	1	3	4
CE 108	Engineering Geology	2	0	2
CE 109	Building Information Modelling (BIM)	0	3	2
ELT 118	Advanced Reading and Vocabulary II	2	2	5
XXX xxx	University Level Elective II	0	2	2
Total		14	15	30

3. Semester				
CODE	COURSE NAME	T	P	ECTS
CE 201	Strength of Materials I	3	3	5
CE 202	Statics II	2	3	5
CE 203	Surveying	2	1	4
CE 204	Road Construction	2	2	4
CE 205	Fluid Mechanics	2	2	4
CE 206	Soil Mechanics	2	1	3
CE 207	Project Management and construction codes	2	0	2
CE 2xx	Study Program Level Elective I	2	1	3
Total		17	13	30

4. Semester				
CODE	COURSE NAME	T	P	ECTS
CE 208	Strength of Materials II	2	3	4
CE 209	Steel Structures I	2	2	4
CE 210	Timber Structures I	2	2	4
CE 211	Concrete Structures I	2	3	4
CE 212	Hydrology I	2	2	4
CE 213	Land Surveying	1	2	4
CE 214	Building Construction Machinery and Equipment and Construction Site Planning	2	0	2
CE 2xx	Study Program Level Elective II	2	1	4
Total		15	15	30

Study Track 1: Structural Engineering

5. Semester / S.E.S.T.				
CODE	COURSE NAME	T	P	ECTS
CE 301	Steel Structures II	2	2	5
CE 302	Foundation Engineering	2	2	5
CE 303	Structural Analysis I	2	2	4
CE 304	Modelling of Structural Systems I	1	3	5
CE 305	Concrete Structures II	3	4	7
CE 3xx	Study Program Level Elective III	2	2	4
Total		12	15	30

6. Semester / S.E.S.T.				
CODE	COURSE NAME	T	P	ECTS
CE 306	Timber Structures II	2	2	4
CE 307	Modelling of Structural Systems II	1	3	5
CE 308	Masonry Structures	2	2	4
CE 309	Structural Analysis II	2	2	5
CE 310	Seismic Design of Structures	2	2	4
CE 311	Professional Field Practice	0	0	4
CE 3xx	Study Program Level Elective IV	2	2	4
Total		11	13	30

7. Semester / S.E.S.T.				
CODE	COURSE NAME	T	P	ECTS
CE 401	Fire resistance of Structures	2	2	4
CE 402	Composite Structures	2	3	5
CE 403	Pre-stressed Structures	2	3	5
CE 404	Building Codes and Design Guidelines	2	0	2
CE 405	Retaining Structures	2	3	6
CE 406	Professional Practice in Design Office	0	0	4
CE 4xx	Study Program Level Elective V	2	2	4
Total		12	13	30

8. Semester / S.E.S.T.				
CODE	COURSE NAME	T	P	ECTS
CE 407	Bridge Design	3	3	5
CE 408	Tunnel Design	2	2	4
CE 409	Structural Design with– Detailing and Bill of Quantities	1	4	6
CE 410	Rock and Soil Reinforcement	2	2	4
CE 4xx	Study Program Level Elective VI	2	2	4
CE 450	Graduation Project	4	0	7
Total		14	13	30

Study Track 2: Environmental and Water Resources Engineering

5. Semester / E.W.R.E.S.T.				
CODE	COURSE NAME	T	P	ECTS
CE 312	Hydraulics	2	3	5
CE 313	Hydrology II	2	3	5
CE 314	Water Supply	2	3	4
CE 302	Foundation Engineering	2	2	5
CE 315	Wastewater Collection and Networks	2	2	4
CE 316	Hydrogeology	3	0	3
CE 3xx	Study Program Level Elective III	2	2	4
Total		15	15	30

6. Semester / E.W.R.E.S.T.				
CODE	COURSE NAME	T	P	ECTS
CE 317	River Training Engineering	2	3	4
CE 318	Dams and Hydropower Engineering	3	3	5
CE 319	Road and Land Drainage Design	2	3	4
CE 320	Sewerage Drainage Systems Design	2	3	4
CE 321	Drinking Water Treatment Plant Design	2	0	3
CE 322	Modelling Water Supply and Wastewater Systems I	1	2	2
CE 311	Professional Field Practice	0	0	4
CE 3xx	Study Program Level Elective IV	2	2	4
Total		14	16	30

7. Semester / E.W.R.E.S.T.				
CODE	COURSE NAME	T	P	ECTS
CE 411	Hydrodynamic modelling of Ground water	2	2	4
CE 412	Wastewater Treatment Plants Design	2	2	4
CE 413	Hydrotechnical Irrigation Systems	2	3	4
CE 414	Flow in the Open Channels	3	3	5
CE 415	Modelling Water Supply and Wastewater Systems I	1	4	3
CE 404	Building Codes and Design Guidelines	2	0	2
CE 406	Professional Practice in Design Office	0	0	4
CE 4xx	Study Program Level Elective V	2	2	4
Total		14	16	30

8. Semester / E.W.R.E.S.T.				
CODE	COURSE NAME	T	P	ECTS
CE 416	GIS and Terrain Surveying in Infrastructure Engineering Projects	2	1	4
CE 417	Preparation and Development of Detailed Design with Bill of Quantities for Water Supply Project	1	4	4
CE 418	Preparation and Development of Detailed Design with Bill of Quantities for Wastewater System Project	1	4	4
CE 419	Preparation and Development of Detailed Design with Bill of Quantities for Roads Internal and External Drainage Project	1	4	4
CE 420	Flood Modelling and Management	2	2	3
CE 4xx	Study Program Level Elective VI	2	2	4
CE 450	Graduation Project	4	0	7
Total		13	17	30

Study Track 3: Transport Infrastructure Engineering

5. Semester / T.I.E.S.T.				
CODE	COURSE NAME	T	P	ECTS
CE 301	Steel Structures II	2	2	5
CE 303	Structural Analysis I	2	2	4
CE 305	Concrete Structures II	3	4	7
CE 323	Roads Design I	3	3	6
CE 324	Roads Modelling I	1	4	4
CE 3xx	Study Program Level Elective III	2	2	4
Total		13	17	30

6. Semester / T.I.E.S.T.				
CODE	COURSE NAME	T	P	ECTS
CE 306	Timber Structures II	2	2	4
CE 325	Road Subgrade Analysis and Design	2	2	3
CE 326	Roads Design II	3	3	5
CE 327	Railway Structures Design I	2	2	4
CE 328	Underground Structures	2	2	3
CE 329	Roads Pavement Design	2	1	3
CE 311	Professional Field Practice	0	0	4
CE 3xx	Study Program Level Elective IV	2	2	4
Total		15	14	30

7. Semester / T.I.E.S.T.				
CODE	COURSE NAME	T	P	ECTS
CE 421	Railway Structures Design II	2	2	3
CE 422	Urban Roads Design	3	3	5
CE 423	Roads Intersections and Interchanges Design	3	3	5
CE 424	Railway Track Bed Design	2	1	3
CE 425	Roads Modelling II	1	4	4
CE 404	Building Codes and Design Guidelines	2	0	2
CE 406	Professional Practice in Design Office	0	0	4
CE 4xx	Study Program Level Elective V	2	2	4
Total		15	15	30

8. Semester / T.I.E.S.T.				
CODE	COURSE NAME	T	P	ECTS
CE 416	GIS and Terrain Surveying in Infrastructure Engineering Projects	2	1	4
CE 426	Roads Design III - Preparation and Development of Detailed Design with Bill of Quantities	1	5	7
CE 427	Concrete and Metal Bridges	2	2	4
CE 428	Transport Planning and Traffic Management	3	3	4
CE 4xx	Study Program Level Elective VI	2	2	4
CE 450	Graduation Project	4	0	7
Total		14	13	30

List of Elective Courses (University Level / Faculty Level / Study Program Level)

University Level Elective Courses				
CODE	COURSE NAME	T	P	ECTS
BOS 101	Bosnian/Croatian/Serbian Language I	0	2	2
TDE 101	Turkish Language I	0	2	2
GRM 101	German Language I	0	2	2
BOS 102	Bosnian/Croatian/Serbian Language II	0	2	2
TDE 102	Turkish Language II	0	2	2
GRM 102	German Language II	0	2	2
CE 113	Environment I	2	0	2
CE 114	Environment II	2	0	2
MAN 112	Business communication skills	0	2	2

Study Program Level Elective Courses				
CODE	COURSE NAME	T	P	ECTS
CE 110	Building Construction Economics (G)	2	0	2
CE 111	Building Chemistry (G)	2	0	2
CE 112	Fundamentals of Business Economics (G)	2	0	2
CE 215	Calculus III (G)	2	1	3
CE 216	Building Physics (G)	2	1	3
CE 217	Geotechnical Engineering (G)	2	1	4
CE 218	Mining and Preparation of Raw Materials (G)	2	1	3
CE 219	Diagnostics of Building Construction (G)	2	1	4
CE 220	Chemistry and Technology of Water (G)	2	1	3
CE 221	Binders – Theoretical Principles of the Structure of Silicate (G)	2	1	3
CE 222	Binders – Computational Principles of the Structure of Silicate (G)	2	1	4
CE 223	Hydroinformatics (G)	0	3	4
CE 224	Labor Engineering (G)	1	2	4
CE 330	Building Construction I (S + T)	2	2	4
CE 331	Building Construction II (S+T)	2	2	4
CE 332	Building Technology (S+T)	3	1	4
CE 333	Testing and Technology (S)	1	3	4
CE 334	Calculus IV (S+E+T)	2	2	4
CE 335	Building Services I (S+E)	1	3	4
CE 336	Building Services II (S+E)	1	3	4
CE 429	Building Services III (S+E)	1	3	4
CE 337	Construction Realization (S+E+T)	1	3	4
CE 416	GIS and Terrain Surveying in Infrastructure Engineering Projects (S)	2	1	4
CE 430	Automation of Building-Technological Design (S+E+T)	2	2	4
CE 431	Renewable and Alternative Sources of Energy (S+E+T)	3	1	4
CE 432	Urban Design and Town Planning (S+E+T)	2	2	4
CE 433	Acoustics and Daylighting (S)	2	2	4
CE 434	Energy Assessment of Buildings (S)	2	2	4
CE 315	Wastewater Collection and Networks (S+T)	2	2	4
CE 435	Quality Control and Management of Constructions (S+E+T)	2	2	4
CE 436	Electro-Technical Building Equipment (S+E+T)	2	2	4
CE 437	Cooling of Buildings (S+E+T)	2	2	4
CE 438	Failures and Reconstruction (S)	2	2	4
CE 338	Programming in Hydraulics (E)	1	3	4

CE 339	Reservoirs and Water Management Systems (E+S)	2	2	4
CE 340	Waste Management (S+E+T)	2	2	4
CE 439	Water and Environment Protection Systems (S+E+T)	3	1	4
CE 440	Hydropedology (E)	3	1	4
CE 441	Climatology (E)	3	1	4
CE 442	Rehabilitation of Water Infrastructure (E)	2	2	4
CE 443	Land Consolidation (S+E+T)	3	1	4
CE 444	Ponds and Purpose Reservoirs (S+E)	3	1	4
CE 302	Foundation Engineering (T)	2	2	5
CE 308	Masonry Structures (T)	2	2	4
CE 341	Testing and Quality Control (T)	2	2	4
CE 342	Applied Physics (S+E+T)	2	2	4
CE 343	Surveying and Processing of Geoinformation (S+E+T)	2	2	4
CE 344	Geoinformation Management (S+E+T)	2	2	4
CE 445	Theory of Elasticity and Plasticity (S+T)	2	2	4
CE 446	Rock Mechanics (S+E+T)	2	2	4
CE 403	Prestressed Structures (T)	2	3	5
CE 447	Mathematical Modelling of Geotechnical Constructions (S+E+T)	2	2	4
CE 448	Mechanization and Realization of Railway Structures (T)	2	2	4
CE 449	Practical Applications in Road Construction (T)	1	3	4
CE 451	Cartography (S+E+T)	3	0	4

G: General Courses for first and second year of the Study Program

S: Structural Engineering Study Track Course

E: Environmental and Water Resource Engineering Study Track Course

T: Transport Infrastructure Engineering Study Track Course