

**School of Construction Technology and Built Environment**

**Department of Civil Engineering**

**Bachelor Degree – Civil Engineer: 166 Credit Hours**

Specialization Pathways:

- Structural Engineering
- Construction Engineering
- Infrastructure Engineering

**Summary:**

Classification	Credit Hours		
	Compulsory	Elective	Total
University Requirements	24	3	27
School Requirements	18	0	18
HTU Department Requirements	36	3	39
HNC Department Requirements	28	4	32
HND Department Requirements	20	12	32
Placement in Industry Requirements	18	0	18
Total =	<b>144</b>	<b>22</b>	<b>166</b>

Practical Hours: Labs, Workshops, Studios, Seminars, Tutorials, Training, Fieldwork, Boot Camps, & Excursions.

1 Practical Hour = 2-3 contact hours.

**0. English Language Prerequisites:**

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10301099	Pre-Foundation English Intensive + Lab	4	8	1	Placement Test 0-29

**1. University Requirements: 27 Credit Hours**

**1.1. Compulsory University Requirements: 24 Credit Hours**

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Contact Hours	Prerequisite
10301100	Foundation English Pre-Intermediate Intensive + Lab	4	8	1	10	Placement Test 30-42 or 10301099
OR 10301110	Foundation English Intermediate Intensive + Lab				10	Placement Test 43-58
10301120	English Intermediate + Lab	3	4	1	6	Placement Test 43-50 10301100
OR 10301130	English Upper-Intermediate + Lab	3			6	Placement Test 59-66 or 10301110 /10301120
10303140	English Advanced	3	4	1	6	Placement Test 67-75 or 10301130
10301101	Soft Skills I	2	0	2	4	-
10301102	Soft Skills II	2	0	2	4	10301101
10303202	Entrepreneurship Boot Camp	6	3	3	12	-
10303201	Leadership Camp*	1	0	1	3	10301101
<b>Total</b>		<b>24</b>				

\* the course includes a 10-day intensive training boot camp held off-campus.

**1.2. Elective University Requirements: 3 Credit Hours**

Students should choose to study 3 Credit Hours from the following List:

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Contact Hours	Prerequisite
10302191	Science & Society Seminar I: Arab Contributions to Science and Arts	1	0	1	2	-
10303199	Science & Society Seminar II: Philosophy of Science	1	0	1	2	-
10303196	Art Appreciation and Techniques	1	0	1	2	-
	Strategies for Industry Competitiveness: Tools & Techniques	1	0	1	2	10301101
<b>Total Taken</b>		<b>3</b>				

## 2. School Requirements: (18 Credit Hours)

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10303101	Functional Math	3	3	0	-
10303100	Functional Physics	3	3	0	-
10201100	Fundamentals of Computing	4	3	1	-
10303130	STEM Lab I	1	0	1	-
10303131	STEM Lab II	1	0	1	10303130
10101100	Workshop I	2	0	2	-
10101102	Workshop II	1	0	1	10101100
10400120	Construction Workshop	1	0	1	10101112
10401111	Introduction to Construction Information	2	0	2	-
<b>Total</b>		<b>18</b>			

## 1. Al-Hussein Technical University (HTU) Department Requirements (39 Credit Hours):

### 1.1. HTU Compulsory Requirements (36 Credit Hours):

#### 1.1.1. HTU Compulsory Core Units (18 Credit Hours):

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10402141	Structural Mechanics	4	3	1	10303100
10402201	Concrete Technology	4	3	1	10402141
10402221	Civil Engineering Technology	4	3	1	10401121
10402430	Major Project (Civil)	4	3	1	10402330
10402112	Civil Engineering Drawing	2	0	2	10401111
10402290	Civil Engineering Excursion*	0	0	0	
<b>Total</b>		<b>18</b>			

\* the course is a supervised specialized excursion for 7-10-days.

#### 1.1.2. HTU Compulsory Specialist Units (18 Credit Hours)

Students should study one of the following lists depending on the specialization pathway:

##### 1) Structural Engineering Specialist Units – 18 Credit Hours

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10402242	Structural Analysis	4	3	1	10402141
10402441	Further Advanced Structural Design	3	2	1	10402341, 10402242
10402442	Foundation Engineering	2	1	1	10402341, 10402242
10402443	Design of Steel Structures	3	2	1	10402341, 10402242
10402444	Pre-stressed Concrete Design	3	2	1	10402341, 10402242
10402445	Introduction to Earthquake Engineering	3	2	1	10402341, 10402242
<b>Total</b>		<b>18</b>			

2) *Infrastructure Specialist Units – 18 Credit Hours*

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10402472	Advanced Highway Engineering	3	2	1	10402371
10402473	Traffic Engineering	3	2	1	10402371
10400471	Sanitary Engineering	3	2	1	10402362
10402477	Treatment of liquid and waste management	3	2	1	10402362
10402474	Pavement Design and Rehabilitation	3	2	1	10402371
10402470	Engineering Hydrology	3	2	1	10402362
<b>Total</b>		<b>18</b>			

3) *Construction Engineering Specialist Units – 18 Credit Hours*

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10400454	Construction Project Management	4	3	1	10400151
10400455	Construction Contracts	4	3	1	10400151
10400456	Construction Planning & Scheduling	3	2	1	10400151
10400457	Cost Estimate and Pricing in Construction	3	2	1	10400151
10400453	Risk and financial management	4	3	1	10400454
<b>Total</b>		<b>18</b>			

**1.2. HTU Elective Requirements (3 Credit Hours):**

Students should choose to study one of the following lists depending on the specialization pathway:

1) *Structural Engineering - 3 Credit Hours:*

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10402471	Bridge Engineering	3	2	1	10402341, 10402242
10400321	Building Envelope and Structural Form	3	2	1	10402341, 10402242
10400322	Applicability and Limitations of 3D Printing for Civil Structures	3	2	1	10402341
10402421	Structural Retrofitting and Rehabilitation	3	2	1	10402341
10402446	Special Topics in Civil Engineering	3	2	1	TBD
<b>Total Taken</b>		<b>3</b>			

2) *Infrastructure- 3 Credit Hours:*

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10402475	Public Transportation Engineering	3	2	1	10402473
10402476	Dams and irrigation	3	2	1	10402470
10400472	Smart urban Infrastructure	3	2	1	10402473
10402446	Special Topics in Civil Engineering	3	2	1	TBD
<b>Total Taken</b>		<b>3</b>			

3) *Construction Engineering- 3 Credit Hours:*

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10400458	Value Management & Engineering	3	2	1	10400151
10400452	Lean and Offsite Production management	3	2	1	10400454
10400472	Smart urban Infrastructure	3	2	1	10402473
10402446	Special Topics in Civil Engineering	3	2	1	TBD
<b>Total Taken</b>		<b>3</b>			

**2. Higher National Certificate (HNC) Department Requirements (32 Credit Hours)**

**2.1. HNC Compulsory Requirements (28 Credit Hours)\*:**

\* Depending on the specialization pathway:

**2.1.1. Compulsory Core Units (12 Credit Hours):**

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10402230	Individual Project (Civil) – Pearson Set	4	2	2	10401121
10401121	Construction Technology	4	3	1	10401111
10400151	Construction Practice & Management	4	2	1	10401111
<b>Total</b>		<b>12</b>			

**2.1.2. Compulsory Specialist Units (16Credit Hours):**

- 1) *Structural Engineering Specialist Units - 16 Credit Hours:*
- 2) *Construction Engineering Specialist Units - 16 Credit Hours:*
- 3) *Infrastructure Specialist Units - 16 Credit Hours:*

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10402171	Science & Materials	4	3	1	10303100
10401112	Construction Information (Working Designs)	4	3	1	10401111
10402101	Mathematics for Construction	4	2	1	10303101
10402241	Principles of Structural Design	4	3	1	10402141
<b>Total</b>		<b>16</b>			

**2.2. HNC Elective Requirements (4 Credit Hours):**

Students should choose to study 4 Credit Hours from one of the following lists depending on the specialization pathway:

- 1) *Structural Engineering - 4 Credit Hours:*
- 2) *Construction Engineering – 4 Credit Hours:*
- 3) *Infrastructure – 4 Credit Hours:*

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10402111	Surveying, Measuring & Setting Out*	4	3	1	10401111
10400252	Tender & Procurement	4	3	1	10400151
10401221	Principles of Refurbishment	4	3	1	10401121
10409262	Principles of Public Health Engineering	4	3	1	-
10400253	Site Supervision & Operations	4	3	1	10400151
<b>Total Taken</b>		<b>4</b>			

- *Compulsory for Infrastructure Pathway*

**3. Higher National Diploma (HND) Requirements (32 Credit Hours):**

**3.1. HND Compulsory Requirement (20 Credit Hours):**

**5.1.1 Compulsory Core Units (8 Credit Hours):**

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10402330	Group Project (Civil) – Pearson Set	8	4	4	10402230
<b>Total</b>		<b>8</b>			

**5.1.2 Compulsory Specialist Units (12 Credit Hours):**

*Structural Engineering & Construction Engineering & Infrastructure Specialist Units - 12 Credit Hours:*

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10402301	Further Mathematics for Construction	4	3	1	10303101
10402361	Geotechnics & Soil Mechanics	4	3	1	10402141
10402341	Advanced Structural Design	4	3	1	10402241
<b>Total</b>		<b>12</b>			

### 3.2. HND Elective Requirements (12 Credit Hours):

Students should choose to study 12 Credit Hours from one of the following lists depending on the specialization pathway:

- 1) *Structural Engineering - 12 Credit Hours:*
- 2) *Construction Engineering – 12 Credit Hours:*
- 3) *Infrastructure – 12 Credit Hours:*

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10401322	Alternative Methods for Construction	4	3	1	10401121
10401312	Advanced Building Information Modelling	4	3	1	10401212
10409362	Environmental Assessment & Monitoring	4	3	1	10303100
10400354	Personal Professional Development	4	3	1	10400151
10409344	Transport Systems in Buildings	4	3	1	10401112
10409361	Alternative Energy Systems Design & Installation	4	3	1	10303100
10402371	Highway Engineering*	4	3	1	
10402362	Hydraulics*	4	3	1	
10402211	Advanced Surveying & Measurement	4	3	1	10402111
10400351	Maintenance & Operations	4	3	1	10400120
10402302	Advanced Materials	4	3	1	
10400354	Construction Data Management	4	3	1	10400151
	<b>Total Taken</b>	<b>12</b>			

\* compulsory for infrastructure pathway

### 4. Placement in Industry Requirements (18 Credit hours)

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Prerequisite
10400999	On-Job Training	18	0	40	3 <sup>rd</sup> year
	<b>Total</b>	<b>18</b>			