

**School of Engineering Technology**

**Department of Electrical Engineering**

**Bachelor Degree – Electrical Engineering: 166 Credit Hours**

Specialization Pathways:

- Communications and Networking Engineering
- Electronics Engineering
- Control Engineering

**Summary:**

Classification	Credit Hours		
	Compulsory	Elective	Total
University Requirements	24	3	27
School Requirements	16	0	16
HTU Department Requirements	21	20	41
HNC Department Requirements	20	12	32
HND Department Requirements	24	8	32
Placement in Industry Requirements	18	0	18
<b>Total</b>	<b>123</b>	<b>43</b>	<b>166</b>

**0. English Language Prerequisites:**

Depends on the results of English language placement test

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10301099	Foundation English Pre-Intermediate Intensive + Lab	4	8	1	Placement Test <30

**1. University Requirements: 27 Credit Hours (Mandatory: 24, Elective: 3)****1.1. Mandatory: 24 Credit hours**

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10301100	Foundation English Intermediate Intensive + Lab	4	8	1	Placement Test 30-42 or 10301099
OR 10301110	Foundation English Intermediate Intensive + Lab				Placement Test 43-58
10301120	English Intermediate + Lab	3	4	1	Placement Test 10301100
10301130	English Upper-Intermediate + Lab	3	4	1	Placement Test 59-66 or 10301110 /10301120
10301140	English Advanced	3	4	1	Placement Test 67-75 or 10301130
10303101	Soft Skills I	2	0	2	-
10303102	Soft Skills II	2	0	2	10301101
10303202	Entrepreneurship Boot Camp	6	3	3	-
	Leadership Camp*	1	0	1	10301101
	<b>Total</b>	<b>24</b>			

\* This course includes 10-days intensive training bootcamp held off-campus.

**1.2. Electives: 3 Credit hours**

Students should choose 3 courses (3 credit hours) from the following list:

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

## 2. School Requirements – Mandatory: 16 Credit Hours

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
010303100	Functional Math	3	3	0	-
010303110	Functional Physics	3	3	0	-
010201100	Fundamentals of Computing	4	3	1	-
010303130	STEM Lab I	1	0	1	-
010101100	Workshop I	2	0	2	-
020101102	Workshop II	1	0	1	010101100
010303131	STEM Lab II	1	0	1	010303130
010401199	Introduction to Engineering Drawing	1	0	1	
<b>Total</b>		<b>16</b>			

## 3. Department Requirements: 41 Credit Hours:

### 3.1. Mandatory: 21 Credit Hours

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
010103233	Analogue Electronic Systems	4	3	1	10103130
010103240	Fundamentals of Control Systems	4	3	1	10103128
	Data analysis and Signal Processing	4	3	1	010101221
101010410	Financial Principles and Techniques for Non-specialists	4	3	1	10303202
010101101	Advanced Workshop	1	0	1	020101102
10103493	Major Project	4	1	3	
<b>Total</b>		<b>21</b>			

### 3.2. Electives: 20 Credit Hours

The student should choose to study five courses from the following list depending on the specialization pathway\*:

#### 1) Control: 20 Credit Hours

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10103232	Further PLCs	4	3	1	10103132
10103440	Control Engineering Design	4	3	1	10103240
10103182	Computer Aided Design and Manufacture (CAD/CAM)	4	3	1	10103130
10103183	Electro, Pneumatic and Hydraulic Systems	4	3	1	10103123
10103243	Distributed Control Systems	4	3	1	10103128
010103132	Automation, Robotics and PLC	4	3	1	010103130
010103133	Instrumentation and Control Systems	4	3	1	010103130
10103231	Industrial Systems	4	3	1	10103230
010103141	Electrical Systems and Fault Finding	4	3	1	010103123
<b>Total Taken</b>		<b>20</b>			

2) *Electronics: 20 Credit Hours*

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
010103234	Further Electrical, Electronic and Digital Principles	4	3	1	10103130
010103430	Power Electronics and Drives	4	3	1	10103234
010103433	Microelectronics	4	3	1	10103123
010103450	Data Communication and Sensor Networks	4	3	1	10103234
010103451	Modelling and Simulation for Engineers	4	3	1	10103221
010103141	Electrical Systems and Fault Finding	4	3	1	010103123
<b>Total Taken</b>		<b>20</b>			

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

4.1. **HNC Mandatory Requirements (20 Credit Hours):**

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10103121	Engineering Math	4	3	1	010303100
10103120	Engineering Design	4	3	1	010303110
10103123	Engineering Science	4	3	1	010303110
10103194	Managing A Professional Engineering Project (Pearson-set)	4	3	1	010101120
10103130	Electrical and Electronic Principles	4	3	1	-
<b>Total</b>		<b>20</b>			

4.2. **HNC Elective Requirements (12 Credit Hours):**

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
010103160	Digital Principles	4	3	1	010103130
010103134	Electronic Circuits and Devices*	4	3	1	010103130
010103133	Instrumentation and Control Systems	4	3	1	010103130
<b>Total Taken</b>		<b>12</b>			

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

5.1. **HND Mandatory Requirement (24 Credit Hours):**

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10103221	Further Mathematics	4	3	1	10103121
10103194	Professional Engineering Management (Pearson-set)	4	3	1	10103120
10103230	Industrial Power, Electronics and Storage	4	3	1	10103130

10103231	Industrial Systems	4	3	1	10103230
10103293	Research Project	8	0	8	10103291
<b>Total</b>		<b>24</b>			

**5.2. HND Elective Requirements (8 Credit Hours):**

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
010103234	Further Electrical, Electronic and Digital	4	3	1	010103130
010103240	Fundamentals of Control Systems	4	3	1	010103128
<b>Total Taken</b>		<b>8</b>			

**6. Placement in Industry Requirements (18 Credit hours)**

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10103393	Practical Training	18	0	40	Department Approval
<b>Total</b>		<b>18</b>			