

Engineering Economics 3  
 Engineering Analysis 3  
 Instrumentation Systems 3  
 Digital Systems Design 3  
**TOTAL 17**

**SEMESTER 2**

University Elective 3  
 Industrial Work Experience 3  
 Control Systems 3  
 Communication Theory 3  
 Electric Drives & Machines 1 3  
 Software Engineering 3  
**TOTAL 17**

**COMPULSORY MODULES**

**LEVEL 4: SEMESTER 1**

<b>Module Title</b>	<b>Credit</b>
Management for Engineers	3
Major Project 1: Research Methods	3
Electrical Power Systems	3
<b>TOTAL</b>	<b>9</b>

**ENGINEERING ELECTIVES**  
**(CHOOSE ANY 2)**

Transmission Lines & Antennas 4  
 Microwave Communications 4  
 Computer Networks 4

Operating Systems for Engineers 4  
 Telephony Systems & Networks 4  
 Electric Drives & Machines 2 4  
 Alt. & Ren. Energy & Power Systems 4  
 Industrial Electronics 4  
 Computer-Based Control Systems 4  
 Network Security 4  
 Power Electronics 4  
 VLSI Design 4  
 Maintenance Engineering & Mngt. 3

**COMPULSORY MODULES**

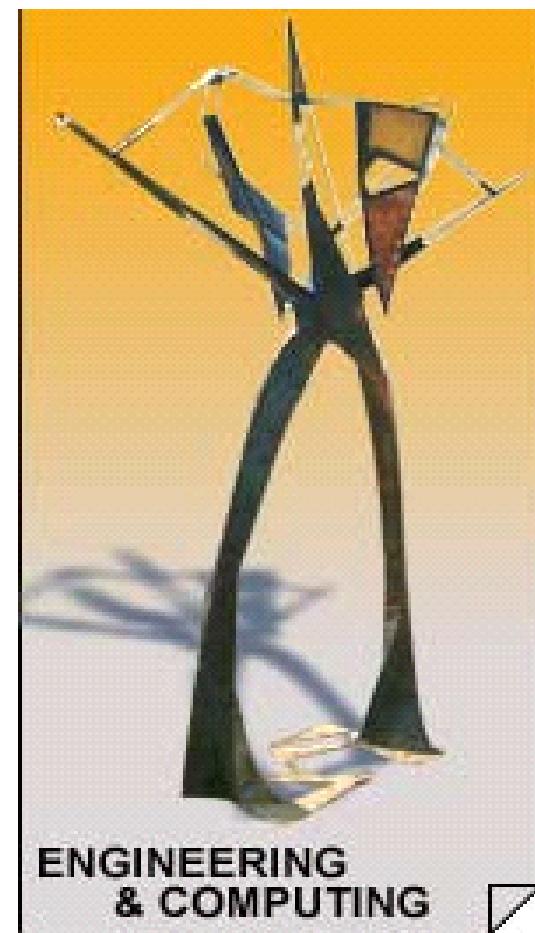
**LEVEL 4: SEMESTER 2**

Electrical Facilities and Safety 3  
 Major Project: Design & Build 3  
 Digital Signal Processing 3  
**TOTAL 9**

**ENGINEERING ELECTIVES**  
**(CHOOSE ANY 2)**

<b>Module Title</b>	<b>Credit</b>
Digital Communication	4
Computer-Based Control Systems	4
Real-Time Systems	4
Mechatronic Systems	4
Modern Control Systems	4
Power System Protection	4
Computer Networks	4

Alt. & Ren. Energy & Power Systems 4  
 Telephony Systems & Networks 4  
 Project Management 3



**Contact Information**  
**Programme Secretary:** 970-5236/68  
**Programme Director:** 970-5222  
**Student Admissions:** 970-2287/2115  
**Website:** www.utech.edu.jm



**BACHELOR OF ENGINEERING  
 IN  
 ELECTRICAL & COMPUTER  
 ENGINEERING**



The Bachelor of Electrical and Computer Engineering aims to develop graduates with the requisite competencies and skills in analytical and creative design, to work with systems that:

1. Produce, process and propagate signals in electromagnetic forms and
2. Generate, transmit, distribute and apply electrical energy.
3. Develop automation solutions for varied industry applications

More importantly, the B.Eng. programme seeks to provide a cost-effective practice-oriented Engineering Education. This degree targets the industrial needs and opportunities in the emerging Information and Communication Technology arena and seeks to exploit the power of the Mechatronics paradigm for engineering design practice.

## CAREER OPPORTUNITIES

Graduates typically gain employment in the following areas: power utility companies, communications facilities (satellite, cable, mobile 2-way radio, military, aeronautical and marine), hotel engineering, radio and TV broadcasting, public and private telephone services, computer networking and internet services, electronic security systems services, bauxite companies, food processing plants and other manufacturing operations, building services industry

## ENTRY REQUIREMENTS

Students are admitted to the programme on the basis of CXC achievements and approved CSEC/A-Level studies beyond fifth form level. Students will be admitted to the Bachelor of Electrical Engineering programme on the basis of **one** of the following:

- Successful completion of the School of Engineering's Prerequisite Course of Study with a minimum GPA of 2.7,
- UTech Diploma in Engineering with a GPA of 2.7, or equivalent field of study (for advanced placement i.e. can start at second year). An interview may be required.
- Success in six (6) CXC Caribbean Advanced Proficiency Examinations Units including Mathematics Units I & II, Physics Units I & 11 and two (2) units in science or technology related courses with a minimum Grade 3 average,
- Success in GCE Advanced Level Examinations in Mathematics, Physics and one other subject with at least a C average.

## PROGRAMME OBJECTIVES

These statements describe expected accomplishments of **graduates** during the first few years after graduation. For Electrical Engineering these are the objectives. An ability to:

1. Apply knowledge of science, mathematics and economics to solve electrical and computer engineering problems that confront society.
2. Design and conduct experiments and analyze and interpret data collected so as to validate electrical and computer engineering theories and optimise processes.
3. Function on multidisciplinary teams.
4. Communicate effectively at all levels using graphical, written and oral methods.
5. Have an understanding of the professional and ethical responsibilities of an Engineer.
6. Critically assess the impact (environmental and otherwise) of engineering solutions in a global and societal context.
7. Use techniques, skills, computers and other modern engineering tools necessary for engineering practice.
8. Perform management functions (planning, organizing, coordinating, controlling, and supervising) during project execution, and to work with multidisciplinary teams.
9. Fulfil the academic requirements for engineering accreditation for membership in professional engineering organisations in Jamaica, the Caribbean region and internationally.

## COURSE STRUCTURE

A breakdown of the programme offerings per semester is shown below.

### LEVEL 1 SEMESTER 1

#### Module Title Credits

Academic Writing 1	3
B. Eng. Mathematics I	3
Fundamentals of Electrical & Computer Engineering	3
Engineering Physics 1	4
Engineering Computing	3
Library Fundamentals	1

**TOTAL 16**

### SEMESTER 2

B. Eng. Mathematics II	3
Programming for Engineers	3
Engineering Tools	3
General Chemistry 1	3
General Chemistry Laboratory 1	1
Community Service Project	1

Electrical Networks 1 3

**TOTAL 17**

### LEVEL 2 SEMESTER 1

#### Module Title Credit

Digital Electronics	3
Electronic Devices & Circuits I	3
B. Eng. Mathematics III	3
Electrical Networks II	3
Academic Writing 2	3
Electrical Lab Course 1	2

**TOTAL 17**

### SEMESTER 2

Entrepreneurship	3
Engineering Statistics	3
Data Communication Networks	3
Microprocessor & Microcontroller	3
Signal & Systems	3
Electronic Devices & Circuits 2	3

**TOTAL 18**

### LEVEL 3 SEMESTER 1

#### Module Title Credit

Engineering Seminar	1
Electromagnetics I	3