

*Course Template*

**1. Basic information**

- Course Name: Electronic Engineering (Telecommunications)
- Course Code: CE027V
- Level (UG, PG): Undergraduate
- Academic Period: 2014
- Faculty: Faculty of Technology
- Department: Engineering
- PMB: ENGT
- Offered at: DM - DMU Leicester
- Type (single, joint.): SI
- Highest Award : Bachelor of Engineering
- All possible exit awards : Bachelor of Engineering (Honours); Certificate of Higher Education; Diploma of Higher Education; Institutional Undergraduate Credit
- Award notes :

Professional Body Recognition

- Accreditation by Professional/Statutory body:
- Exemption by Professional/Statutory body:
- Details
- Modes of attendance: Main MOA: Full-Time  
Other MOA:
- Mode Notes: Full time with optional placement year
- Course leader: John Gow

**2. Entry Requirements and Profile**

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| <p>Award: BEng(Hons) Electronic Engineering</p> <p>Standard Entry Requirements</p> <p>Applicants should normally be 18 years of age by the 1st of October in the year of entry and should normally hold the following qualifications:</p> <p>A minimum of two GCE 'A' Levels (A2), one of which should be mathematics (physics or another analytical subject may be accepted in lieu). AS levels may be considered on an individual basis as contributory to the entry qualifications. It is normally expected that the candidate presents with a minimum of 260 UCAS points</p> <p>An Advanced GNVQ, supported by an additional analytical subject, or a BTEC certificate or diploma in a relevant discipline with merit.</p> <p>Any qualification deemed equivalent to the above, including recognised access courses and compact arrangements.</p> <p>Applications are welcomed for individual consideration from candidates offering experience and prior learning in place of part or all of the formal entry qualifications.</p> <p>Direct entry to level two with advanced standing is permitted for applicants who can demonstrate their capability to undertake studies at degree level and have the prior knowledge/qualifications deemed equivalent to the level one studies.</p> |
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### 3. Course Description

#### Characteristics and Aims

Electronic Engineering provides an analytically rigorous general electronics course in which the fundamental technological skills essential for a modern engineering career are developed. Development of students as independent engineering professionals is fostered throughout the course via laboratory exercises and project work. Key transferrable skills are introduced by the inclusion of a design-based module in the first year.

The ubiquity of electronics has resulted in a very high employment rate for graduate electronics engineers, who can embark on careers ranging from control systems through microprocessor technology, electronic design and communications to management. This course enables graduates to fit into a wide range of possible industries. The Department has a very active Industrial Committee comprising senior industrial engineers; the course structure reflects the advice given by these representative employers. An opportunity to undertake an industrial placement year is available, normally between years 2 and 3.

There are three option streams within this course, BEng(Hons) Electronic Engineering (High Frequency), BEng(Hons) Electronic Engineering (Broadcast Systems), BEng(Hons) Electronic Engineering (Telecommunications) and BEng Electronic Engineering (Power Electronics and Systems Integration):

BEng (Hons) Electronic Engineering (High Frequency): High frequency electronics; particularly relevant with the widespread use of fast clock speeds and communication technologies operating in the gigahertz region.

BEng (Hons) Electronic Engineering (Telecommunications) extends the Year 1 communications theme to cover mobile communication and communication networks.

BEng (Hons) Electronic Engineering (Power Electronics and Systems Integration) focusses on power generation and conversion, and also explores the requirements of interfacing with transducers and electromechanical systems in order to control systems. Significant practical exposure to power conversion systems develops awareness of the need to design with efficiency in mind. Renewable energy systems are also covered.

#### *Teaching, Learning and Assessment Strategies*

The prime focus of the learning and teaching strategy is to enable the student to develop the knowledge base, skills and personal development essential to the formation of the Chartered Engineer. Therefore, the course has been designed with reference to UKSPEC and the Framework for Higher Education Qualifications (FHEQ) and conforms to the QAA Subject Benchmark Statements - Engineering.

The modules making up the course employ a range of learning and teaching strategies including:

Staff directed learning via lectures, tutorials, seminars and work-based exercises for the dissemination of knowledge, information and the demonstration of practical processes and techniques.

Student centred learning via research and presentation of findings, report writing, assignments, practice and practical work based exercises for the development of skills and understanding. Resource based learning for the development of skills, e.g. practical and measurement skills developed in the work place, the development of keyboard skills and skill in the use of computer based tools.

Collaborative based learning by group assignments and projects. Project based learning to develop research, presentation and communication skills.

### 4. Outcomes

| Generic outcome headings | What a student should know and be able to |
|--------------------------|---|
|--------------------------|---|

|  | <b>do upon completion of the course</b>  |
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| <ul style="list-style-type: none"> <li><b>Knowledge &amp; understanding</b></li> </ul> | Essential facts, concepts, principles and theories, both analytical and practical, associated with the design and analysis of electronic systems.  |
| <ul style="list-style-type: none"> <li><b>Cognitive skills</b></li> </ul>              | <p>Identification of the requirements to solve a problem. To research and assess this data, using it to develop an appropriate solution; whether as an individual or part of a team.</p> <p>Analysis and design of a system or subsystem, including working within a limited time frame and resource envelope.</p> <p>Understanding of risks incurred in the design or execution of a project.</p>   |
| <ul style="list-style-type: none"> <li><b>Subject specific skills</b></li> </ul>       | <p>Competent to work in the electronics industry.</p> <p>Confident use of common tools associated with electronic engineering.</p>   |
| <ul style="list-style-type: none"> <li><b>Key Skills</b></li> </ul>                    | <p>Numeracy: Experience at handling quantitative data. Collecting, interpreting, recording and reporting numerical information.</p> <p>Communication: Competence in communication using a variety of media, including verbally and in presentations.</p> <p>Self-directed study: Developed throughout the course. The student is encouraged to be active within the learning process.</p> <p>Information Technology: Computer based tools will be used throughout the course, including CAD and simulation software.</p> <p>Problem solving: Opportunity to develop efficient strategies for problem solving. Where possible, group projects will rely on interdisciplinary groups.</p> <p>Teamwork: this is an inherent part of the modern workplace. Frequent opportunities are provided to work in teams during projects, tutorial exercises and assignments.</p> |

## 5. Structure and Regulations

### Relationship Details

| <u>Module</u>   | <u>Credits</u> | <u>Level</u> | <u>Take/Pass</u> | <u>Semester</u> | <u>Locations</u> |
|-----------------|----------------|--------------|------------------|-----------------|------------------|
| <b>ENGD1001</b> | <b>30.00</b>   | <b>1</b>     | <b>Must Take</b> | <b>Y</b>        | <b>DM</b>        |
| <b>ENGD1002</b> | <b>30.00</b>   | <b>1</b>     | <b>Must Take</b> | <b>Y</b>        | <b>DM</b>        |
| <b>ENGD1003</b> | <b>30.00</b>   | <b>1</b>     | <b>Must Take</b> | <b>Y</b>        | <b>DM</b>        |
| <b>ENGD1008</b> | <b>15.00</b>   | <b>1</b>     | <b>Must Take</b> | <b>Y</b>        | <b>DM</b>        |
| <b>ENGD1009</b> | <b>15.00</b>   | <b>1</b>     | <b>Must Take</b> | <b>Y</b>        | <b>DM</b>        |
| <b>ENGD2001</b> | <b>15.00</b>   | <b>2</b>     | <b>Must Take</b> | <b>Y</b>        | <b>DM</b>        |
| <b>ENGD2009</b> | <b>15.00</b>   | <b>2</b>     | <b>Must Take</b> | <b>Y</b>        | <b>DM</b>        |

|                 |              |          |                  |                   |           |           |
|-----------------|--------------|----------|------------------|-------------------|-----------|-----------|
| <b>ENGD2010</b> | <b>15.00</b> | <b>2</b> | <b>Must Take</b> | <b>Y</b>          | <b>DM</b> |           |
| <b>ENGD2014</b> | <b>15.00</b> | <b>2</b> | <b>Must Take</b> | <b>Y</b>          | <b>DM</b> |           |
| <b>ENGD2031</b> | <b>30.00</b> | <b>2</b> | <b>Must Take</b> | <b>Y</b>          | <b>DM</b> |           |
| <b>ENGD2050</b> | <b>30.00</b> | <b>2</b> | <b>Must Take</b> | <b>Y</b>          | <b>DM</b> |           |
| <b>SAND2802</b> | <b>0.00</b>  | <b>2</b> | <b>Neither</b>   | <b>1, 2, X, Y</b> |           | <b>DM</b> |
| <b>ENGD3000</b> | <b>30.00</b> | <b>3</b> | <b>Must Take</b> | <b>Y</b>          | <b>DM</b> |           |
| <b>ENGD3001</b> | <b>30.00</b> | <b>3</b> | <b>Must Take</b> | <b>Y</b>          | <b>DM</b> |           |
| <b>ENGD3005</b> | <b>30.00</b> | <b>3</b> | <b>Must Take</b> | <b>Y</b>          | <b>DM</b> |           |
| <b>ENGD3021</b> | <b>30.00</b> | <b>3</b> | <b>Must Take</b> | <b>Y</b>          | <b>DM</b> |           |

## Structure

### Structure notes

#### 1 Course Info

#### Course Specific Differences or Regulations

1. The requirements to progress to placement are determined by Faculty Policy which requires that normally student must have passed a minimum of 60 credits at level 2.
2. In line with the guidelines for compensation in accredited programmes published by the Institute of Engineering and Technology (IET), no more than 20 credits may be compensated at levels 5 and 6 for the final award to be accredited.
3. Students accepted for direct entry to the final year of this programme will not be considered to be following an IET accredited programme.
4. Students must pass the ENGD3000 Individual Project at the first sitting in order for the final award to be accredited.
5. In order to pass a module, a minimum threshold of 30% must be achieved in all (Level 5 & 6) assessment components of the module. This is in keeping with IET accreditation requirements.
6. IET accredited programmes are exempt from the university 'best 210 credits' algorithm for the calculation of degree classifications.

#### Numbers at sites, including partner institutions

1

#### Relevant QAA Subject Benchmarking statement(s)

- 1 1 This programme has been informed by the QAA Subject Benchmark Statement(s) in Engineering, and the Engineering Council UKSPEC.

## 6. Quality Assurance Information

### QA of Workbased Learning

### Liaison with Collaborative Partners

### Procedures for Maintaining Standards

The Programme is managed by a programme leader together with a programme team. They are guided by the prevailing academic regulations and modular scheme handbooks produced by Registry.

An external examiner is attached to the programme who acts as a critical friend. The external examiner attends the assessment board, scrutinises student work and marking, and ensures that standards have been maintained at an appropriate level.

Each year the programme leader completes a Programme Enhancement Plan which is approved by the Programme Board/Subject Authority Board and Faculty Academic Committee.

The student voice is heard via student representatives on the Programme Board and the Staff Student Consultative Committee. Feedback from students is gathered by end of module questionnaires and programme questionnaires.

The programme is subject to a periodic review in line with University requirements.

#### **Course Handbook Descriptor**

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