Course Specification

BEng (Hons) Electronic and Electrical Engineering

Course Code: BENEE

2024/25

BEng (Hons) Electronic and Electrical Engineering (BENEE)

Applicant Facing Course Specification for 2024/25 Undergraduate Entrants

Confirmed at <u>11/2023</u>

General Information

Award	Bachelor of Engineering with Honours Electronic and Electrical Engineering
Contained Awards	Bachelor of Science Electronic and Electrical Engineering (Level 6)
	Diploma of Higher Education Electronic and Electrical Engineering (Level 5)
	Certificate of Higher Education Electronic and Electrical Engineering (Level 4)
Awarding Body	Leeds Beckett University
Level of Qualification and Credits	Level 6 of the Framework for Higher Education Qualifications, with 120 credit points at each of Levels 4, 5 and 6 of the UK Credit Framework for Higher Education (360 credits in total).
Course Lengths and Standard Timescales	Start dates will be notified to students via their offer letter. The length and mode of delivery of the course is confirmed below:
	• 3 years (full time, campus based)
	• 4 years (full time with sandwich year, campus based)
	• 6 years (part time, campus based)
Part Time Study	PT delivery is usually at half the intensity of the FT equivalent course, although there may be flexibility to increase your pace of study to shorten the overall course duration. Some modules may be delivered in a different sequence to that defined within this information set but the modules offered within each level are consistent. Please note that the work placement option is not generally available to PT students.
Location(s) of Delivery	The majority of teaching will be at Headingley campus but on occasion may be at City campus.
	Students are responsible for obtaining their own placement, with assistance from the University. The locations will vary, dependant on the opportunity.

Entry Requirements	Admissions criteria are confirmed in your offer letter. Details of how the University recognises prior learning and supports credit transfer are located here: https://www.leedsbeckett.ac.uk/student-information/course-information/recognition-of-prior-learning/
	Admissions enquiries may be directed to: AdmissionsEnquiries@leedsbeckett.ac.uk.
Course Fees	Course fees and any additional course costs are confirmed in your offer letter. Fees enquiries may be directed to Fees@leedsbeckett.ac.uk.

Timetable Information

Timetables for Semester 1 will be made available to students during induction week via:

i)   The Student Portal (MyBeckett)
ii)   The Leeds Beckett app

Any difficulties relating to timetabled sessions may be discussed with your Course Administrator.

Policies, Standards and Regulations (www.leedsbeckett.ac.uk/academicregulations)

1. In line with a recent Engineering Council directive, a Regulation Exemption has been approved by the University which states that:

"Students must pass all modules which are mapped to Accreditation of Higher Education Programme (AHEP) learning outcomes with an overall mark of not less than 40% in the combined assessments, with a submission in each component for each module.

If students do not achieve these marks at the first attempt they will have the chance to undergo a re-sit in that particular area; if they still fail to achieve the marks at this attempt they will not be allowed to progress onto the following year until they have completed the module again and achieved the above mark.

Failure at the second attempt at a module will result in a student's withdrawal from the course."

2. For this award, there is an Admissions exemption for this course, which was agreed on the 2018-11-14

[The Level 3 tariff] must include 40 points from a Maths or Science related subject. If you are studying Biology, Chemistry or Physics to meet this requirement you must also achieve a `Pass' in the practical assessment, where that practical assessment is separated (from 2017)

Note: The correct title for the Level 6 contained award of the ordinary degree is *BSc Electronics and Electrical Engineering*. This Level 6 contained award **does not** satisfy the PSRB requirements for an accredited degree programme as it does not fully meet the Engineering Council's guidance on the assessed learning outcomes for IEng under the *Accreditation of Higher Educational Programmes* version 3.0. The

change in the title of the award is therefore necessary to differentiate between the main award and the contained award.

Specifically, the title of any contained award **must** adhere to the Accreditation Policy R1, *Programme Title*, of the IET (Academic Accreditation Information Pack for Higher Education Institutions, Academic Accreditors and Professional Engineering Institution Staff. The Institution of Engineering and Technology, July 2018), which states:

The title of the accredited degree programme must not be identical to an unaccredited programme awarded by the same Higher Education Institution.

For the ordinary degree, you will not have met the Course Learning Outcomes of the honours award; but instead you will expected to have demonstrated the Course Learning Outcomes stated in Section 3 below.

The Engineering Council defines compensation as: "*The practice of allowing marginal failure (i.e. not more than 10% below the nominal passmark) of one or more modules and awarding credit for them, often on the basis of good overall academic performance*", and condonement as: "*The practice of allowing students to fail and not receive credit for one or more modules within a degree programme, yet still qualify for the award of the degree*".

In line with these definitions, and for the listed awards

  a. No module mark may be condoned, and a pass award made for any module in the stated degree programmes
  b. A student who is enrolled on one of the stated degrees can be compensated for a maximum of **one** module of a maximum of 20 credits
  c. The individual and group project modules within the awards cannot considered for compensation under (b)
  d. The minimum mark for which compensation is allowed is 30%, given a normal pass mark of 40%

For instance, a student entering at Level 4 and leaving at Level 6 on an award of 360 credits could only be compensated in *one* 20 credit module, no matter how many modules are taken between the entry point at Level 4 and graduation at Level 6. Likewise, students on an Integrated Masters of 480 credits similarly can only be compensated in *one* 20 credit module within those 480 credits.

Students who fail to stay within the compensation limits above **must** be transferred to a suitable non-accredited award or withdrawn from the course at the students option.

Key Contacts

Your Course Director	Dr. David Love
Your Academic Advisor	Each Student will be allocated an Academic Advisor once they commence their studies at the University. The Academic Advisor will be a member of the Engineering Academic Staff.
Your Course Administrator	Lisa Halmshaw - L.D.Halmshaw@leedsbeckett.ac.uk

Sandwich or Other 'In Year' Work Placement Information

Summary

Should you decide to undertake a placement year, you will automatically be enrolled on the *Work Placement* module. You will then be supported during this placement by a named member of the Engineering teaching team and passing this *Work Placement* module enables the student to graduate with award title *BEng Electronics and Electrical Engineering (Sandwich)*. Failing the module, or withdrawing from the placement, has no consequences for your academic progression: all students who pass Level 5 are eligible to undertake study at Level 6. Similarly, if you choose not to take the placement year, then you will automatically resume studies at Level 6 in the following academic year.

Even if you elect *not* to undertake a full placement year, you will still be encouraged and supported to undertake a shorter placement over the summer months between Level 4 and Level 5, or between Level 5 and Level 6. You will prepare for the shorter summer placements in the same manner as for the longer placements and will be supported by the *Employability and Placement* lead to find and apply for those opportunities. However, whilst valuable, these shorter summer placements will not be captured by the *Work Placement* module and so you will be ineligible for the '*(Sandwich)*' appellation to your degree title.

The availability or type of placements with employers may be restricted. Students will be advised about any new information or required revisions to confirmed arrangements as soon as this information becomes available.

Length

The placement will be a minimum length of 32 weeks but can be longer by negotiation. All placement activity must be undertaken by the end of Level 4 and the September start date for the following year.

Location

You may be placed with various companies in the UK (or internationally if applicable). Further information on the placement process is provided by the course Employability Lead prior to option choices being made.

Professional Accreditation or Recognition Associated with the Course

Professional Body

Institution of Engineering and Technology (IET).

Accreditation/Recognition Summary

This course is accredited by the Institution of Engineering and Technology (IET). Students are eligible to apply for IET sponsored scholarships and bursaries, including the Future Talent award whilst studying; after graduation it improves employability by showing that the students have developed the appropriate skills and knowledge for an engineering career and professional registration.

Course Overview

Aims

The aims of the programme are to:

- To facilitate the provision of a quality learning experience for each student that fosters engagement with their programme of study and promotes independent study and life-long learning.

- To maintain a high quality, comprehensive and coherent electronic and electrical focussed curriculum which develops underpinning principles, management, entrepreneurship, digital literacy and offers a global appeal; informed by research, scholarly activity and practice to enhance each participant's career prospects.

- To develop professionals with a sound understanding of both electronic and electrical engineering in a holistic approach; and understanding the key features that link the two subject areas.

- To encourage the creative and appropriate application of technology to promote innovation and enterprise through the research project whilst enhancing students' employability skills.

- To promote ethical, social, legal and environmental awareness and professionalism in business development; supported by a strong appreciation of industry focussed skills and practice.

Course Learning Outcomes

At the end of the course, students will be able to:

1	Possess the core knowledge and understanding of scientific principles and methods necessary for electronic and electrical engineers; enabling their appreciation of its scientific and engineering context, and to support their understanding of historical, current, and future developments and technologies.
2	Be able to develop an ability to analyse a system through appropriate tools, methods and techniques, developing appropriate quantitative solutions and communicate the results of those analyses in a form appropriate to both specialist and non-specialist audiences.
3	Be able to creatively design innovative solutions to problems including an investigation and identification of the appropriate legal, economic, social, aesthetic and environmental constraints where applicable.
4	Have developed the skills to undertake projects to a professional standard by the consistent application and review of development, management and evaluation methods and techniques.
5	Have an understanding of the context of engineering knowledge; the characteristic tools, equipment, processes and products of the discipline of electronic and electrical engineering, and be able to use the technical literature

	and other information sources to develop that understanding over the course of their professional careers.

Teaching and Learning Activities

Summary

The delivery style will encourage independent and collaborative learning through team-based activities. This course enables many practical skills to be developed and students are encouraged to develop their personal interest through individual research. A number of delivery methods are used from guest lectures, group activities, online support and workshop activities.

Students are made aware of the goal of independence in learning and are given explicit guidance on those aspects of their learning for which they are responsible. Key opportunities for students in this regard include the *Engineering Skills* modules and guidance on the studying of individual modules.

Scheduled sessions will include the use of lectures, seminars and tutorials, and advantage will be taken of both technology and supportive activities to ensure that effective learning takes place. Some of those supportive activities strongly encourage the student to attend sessions that are not in themselves credit bearing, but which are designed to reinforce the concepts and skills introduced in the credit bearing modules.

These activities will include the use of simulations, role play, case studies, projects, practical work, work-based learning, workshops, peer tutoring, self-managed teams and learner managed learning.

The final research project has been designed around practice-centred product development, enabling students to focus their energies in developing future thinking and practical solutions to their sphere of work or career aspirations.

This course will feature a mix of blended learning, both online and in-person. Most lectures and all lab sessions will be live, with some online learning for specific modules.

Your Modules

This information is correct for students progressing through the programme within standard timescales. Option modules listed are indicative of a typical year. There may be some variance in the availability of option modules. Students who are required to undertake repeat study may be taught alternate modules which meet the overall course learning outcomes. Details of module delivery will be provided in your timetable.

Level 4			
Semester 1	**Core (Y/N)**	**Semester 2**	**Core (Y/N)**
Computers in Engineering (20 credits)	Y	Engineering Design Project 1 (20 credits)	Y

Level 4			
Electrical and Electronics Principles 1 (20 credits)	Y	Engineering Systems and Data Acquisition (20 credits)	Y

Double Modules (10 credits per semester)	
Digital Electronics (20 credits)	Y
Maths for Electronics and Electrical Engineering (20 credits)	Y

Non-Credit Support Modules (both semesters)	
Engineering Skills 1	Y

Level 5			
Semester 1	Core (Y/N)	Semester 2	Core (Y/N)
Advanced Maths for Electrical and Electronics Engineering (10 credits)	Y	Electrical and Electronics Principles 2 (20 credits)	Y
Analogue Electronics (20 credits)	Y	Embedded Systems (20 credits)	Y
Communication Systems (20 credits)	Y	Engineering Design Project 2 (10 credits)	Y

Double Modules (10 credits per semester)	
Instrumentation and Control (20 credits)	Y

Non-Credit Support Modules (both semesters)	
Engineering Skills 2	Y

Level 6			
Semester 1	Core (Y/N)	Semester 2	Core (Y/N)
Digital Signal Processing (20 credits)	Y	Engineering Cost and Management Accounting (20 credits)	Y

Level 6			
Advanced Manufacturing Technology (20 credits)	N	Power Electronics (20 credits)	Y
Engineering Control (20 credits)	N		
Project Management (20 credits)	N		

Double Modules (20 credits per semester)	
Production Project (40 credits)	Y

The option modules listed are indicative of a typical year. There may be some variance in the availability of option modules.

Part Time Study

Level 4 (Year 1)			
Semester 1	**Core (Y/N)**	**Semester 2**	**Core (Y/N)**
Maths for Electronics and Electrical Engineering (20 credits)	Y	Maths for Electronics and Electrical Engineering (20 credits)	Y
Electrical and Electronics Principles (20 credits)	Y	Engineering Systems and Data Acquisition (20 credits)	Y

Level 4 (Year 2)			
Semester 1	**Core (Y/N)**	**Semester 2**	**Core (Y/N)**
Digital Electronics (20 credits)	Y	Digital Electronics (20 credits)	Y
Computers in Engineering (20 credits)	Y	Engineering Design Project 1 (20 credits)	Y

Non-Credit Support Modules (both semesters, Year 1 and Year 2)	
Engineering Skills 1	Y

Level 5 (Year 3)			
Semester 1	**Core (Y/N)**	**Semester 2**	**Core (Y/N)**

Level 5 (Year 3)			
Advanced Maths for Electrical and Electronics Engineering (10 credits)	Y	Embedded Systems (20 credits)	Y
Analogue Electronics (20 credits)	Y	Engineering Design Project (10 credits)	Y

Level 5 (Year 4)			
Semester 1	Core (Y/N)	Semester 2	Core (Y/N)
Instrumentation and Control (20 credits)	Y	Instrumentation and Control (20 credits)	Y
Communication Systems (20 credits)	Y	Electronic and Electrical Principles 2 (20 credits)	Y

Level 6 (Year 5)			
Semester 1	Core (Y/N)	Semester 2	Core (Y/N)
Digital Signals Processing (20 credits)	Y	Engineering Cost and Management Accounting (20 credits)	Y
Digital Signals Processing (20 credits)	Y	Power Electronics (20 credits)	Y

Non-Credit Support Modules (both semesters, Year 1 and Year 2)	
Engineering Skills 2	Y

Level 6 (Year 6)			
Semester 1	Core (Y/N)	Semester 2	Core (Y/N)
Production Project (40 credits total)	Y	Production Project (40 credits total)	Y
Students will select one of the following:	N		

Level 6 (Year 6)			
Advanced Manufacturing Technology (20 credits) Engineering Control (20 credits) Project Management (20 credits)			

The option modules listed are indicative of a typical year. There may be some variance in the availability of option modules.

Assessment Balance and Scheduled Learning and Teaching Activities by Level

The assessment balance and overall workload associated with this course are calculated from core modules and typical option module choices undertaken by students on the course. They have been reviewed and confirmed as representative by the Course Director but applicants should note that the specific option choices students make may influence both assessment and workload balance.

A standard module equates to 200 notional learning hours, which may be comprised of teaching, learning and assessment, any embedded placement activities and independent study. Modules may have more than one component of assessment.

Assessment

Levels 4, 5 and 6 are assessed by a broadly even mix of coursework and examinations, with some practical assessments.

Workload

Overall Workload	Level 4	Level 5	Level 6
Teaching, Learning and Assessment	288 hours	216 hours	228 hours
Independent Study	912 hours	984 hours	972 hours
Placement (optional)		1,200 hours	

Learning Support

If you have a question or a problem relating to your course, your Course Administrator is there to help you. Course Administrators work closely with academic staff and can make referrals to teaching staff or to specialist professional services as appropriate. They can give you a confirmation of attendance letter, and a transcript. You may also like to contact your Course Rep or the Students' Union Advice team for additional support with course-related questions.

Student Services

If you have any questions about life at University, call into our Student Services Centre at either campus or contact Student Advice directly. This team, consisting of trained officers and advisers are available to support you throughout your time here. They will make sure you have access to and are aware of the support, specialist services, and opportunities our University provides. They also work on a wide range of projects throughout the year all designed to enhance your student experience and ensure you make the most of your time with us. Student Advice are located in the Student Services Centre in the Leslie Silver Building at City Campus and on the ground floor of the Priestley Building at Headingley Campus. The team can also be contacted via email at studentadvice@leedsbeckett.ac.uk, telephone on 0113 812 3000, or by accessing our online chat link, available on the student homepage.

Support and opportunities

Within MyBeckett you will see two tabs (Support and Opportunities) where you can find online information and resources for yourselves. The Support tab gives you access to details of services available to give you academic and personal support. These include Library Services, the Students' Union, Money advice, Disability advice and support, Wellbeing, International Student Services and Accommodation. There is also an A-Z of Support Services, and access to online appointments/registration.

The Opportunities tab is the place to explore the options you have for jobs, work placements, volunteering, and a wide range of other opportunities. For example, you can find out here how to get help with your CV, prepare for an interview, get a part-time job or voluntary role, take part in an international project, or join societies closer to home.