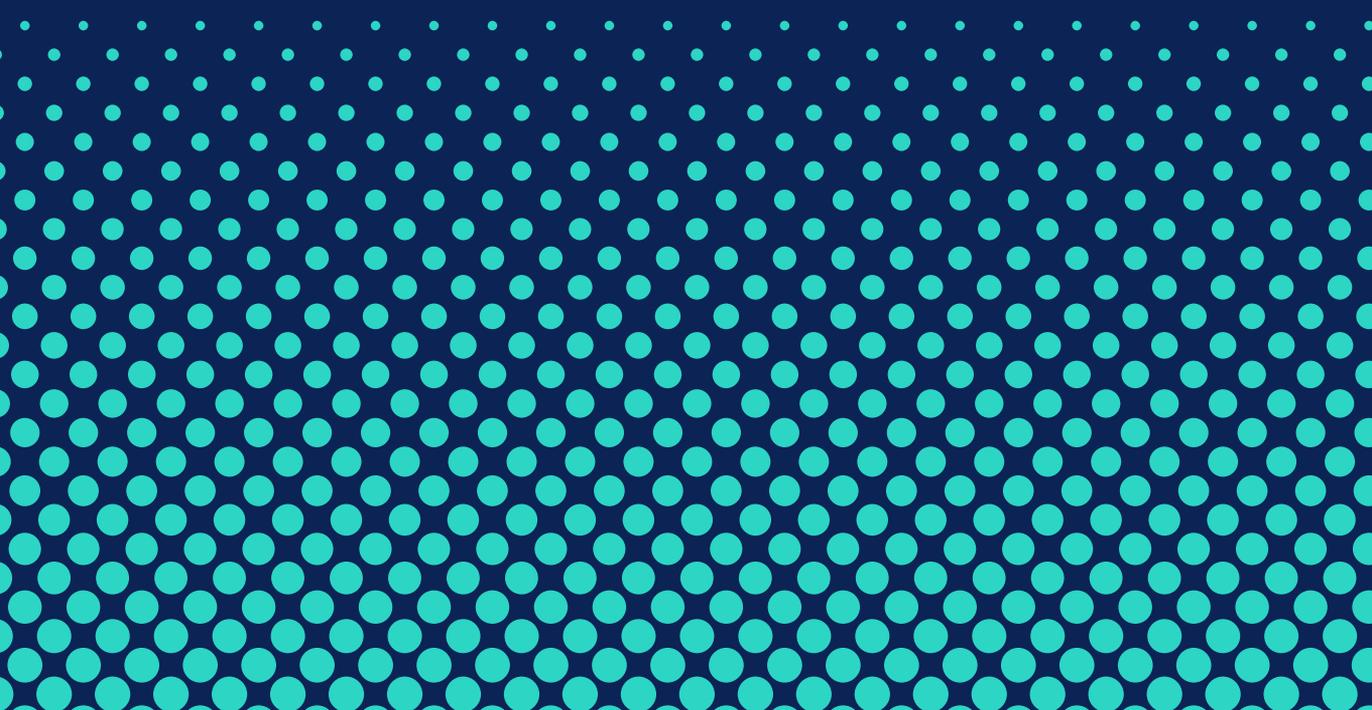


ELECTRONICS AND ELECTRICAL ENGINEERING

UNDERGRADUATE



DEGREES THAT WILL TRANSFORM YOUR CAREER PROSPECTS

Electrical and electronic engineers have transformed the 21st century with technologies such as television, medical imaging, communications, nanotechnology and computer systems, to name just a few. Graduates can apply their expertise in a wide range of industry sectors, from business, medicine, aviation, communications to transport, space exploration, industrial automation, science, gaming and environmental monitoring. As such you can expect to enjoy excellent career prospects, not just in the UK but around the world.

WHY STUDY ELECTRICAL AND ELECTRONIC ENGINEERING AT LJMU?

Our electrical and electronic engineering programmes are delivered by the School of Engineering, which has long-term partnerships with universities and employers in the UK and overseas.

The School recruits students from around the world and staff provide excellent levels of support to help ensure you reach your full potential.

Plus you will have access to specialist labs and facilities and the opportunity to join the LJMU Racing Team, which designs, builds and races a single-seater racing car on professional circuits as part of the Formula Student competition. Furthermore, you will enjoy a wide range of opportunities for work-placements, professional skills development and networking with potential employers and professional bodies.

CHOOSE FROM THE FOLLOWING DEGREE PROGRAMMES:

- Audio and Music Production BSc (Hons)
- Electrical and Electronic Engineering BEng (Hons)
- Mechatronics and Autonomous Systems BEng (Hons)
- Product Design Engineering BSc (Hons)

WE ALSO OFFER THE FOLLOWING INTEGRATED MASTERS PROGRAMMES IN:

- Electrical and Electronic Engineering MEng (Hons)
- Mechatronics and Autonomous Systems MEng (Hons)

INTEGRATED MASTER'S PROGRAMMES IN ELECTRONICS AND ELECTRICAL ENGINEERING

WHAT IS AN INTEGRATED MASTER'S (MEng) PROGRAMME?

All of our MEng programmes are integrated Master's degrees. This means that they combine undergraduate and postgraduate study into a single course.

They take 5 years to complete – 4 years studying at LJMU plus a year's paid placement out in industry, so you apply what you have learnt at the University out in the workplace and gain invaluable professional skills.

HOW DOES AN MEng DIFFER TO A BEng (HONS) COURSE?

For the first three years of the course, an MEng follows a similar structure to a BEng (Hons); the real difference comes in your final year of study at LJMU.

Unlike a BEng (Hons), this last year is at an advanced Master's level and you will be expected to complete a substantial project, often with a research element to it. This extra year is intended to give you an opportunity to undertake in-depth work, broaden your skills and knowledge, and ultimately, increase your employability as an engineer.

Entry requirements for MEng courses are higher than for a BEng (Hons). However, if you start on a BEng (Hons) course at LJMU you may be able to transfer onto an MEng if you meet the required academic standards.

WHAT ARE THE BENEFIT OF COMPLETING AN MEng DEGREE?

- You will graduate with a Master's level degree without having to apply for an MSc course
- You will gain a depth of specialist knowledge and experience highly sought after by employers
- You will be able to undertake the Initial Professional Development (on-the-job training) required to become a Chartered Engineer as soon as you graduate
- You will enjoy excellent career prospects and expect to command higher salaries than graduates with a BEng (Hons)

WHAT FINANCIAL SUPPORT IS AVAILABLE TO MENG STUDENTS?

You will be eligible to apply for the same financial support as other undergraduates for the duration of your MEng. This includes student loans to cover your tuition fees and living expenses plus means-tested grants and bursaries. This financial support is not available to students who enrol on an MSc degree after completing a BEng programme. Furthermore, if you are awarded an LJMU scholarship – worth £1,000 or £10,000 – you will receive this award for every year of your degree as well.

96% of graduates from the Department of Electronics and Electrical Engineering went on to secure employment or further study.

LJMU Destination of Leavers from Higher Education Survey, 2017



AUDIO AND MUSIC PRODUCTION

BSc (HONS)

Graduate from this BSc degree course with the technical skills and the business management awareness needed to succeed in the audio/music production industry.

COURSE OVERVIEW

- Excellent student support from academic tutors and student mentors, including
- Our application-led curriculum (designed in line with advice from industrial partners) emphasises an understanding of the concepts and theories that underpin technology as well as their application to real-world professional scenarios.
- Teaching is supported by relevant laboratories and workshops (including recording, radio and television studios) with state-of-the-art software and excellent technical support
- Option to complete a validated year-long industrial placement
- Option to spend one year studying abroad

CORE MODULES

Level 4

Computer Audio Technology; The Media Industry; Spreadsheets and Data Presentation; Audio Production Technology; Practical Audio Production; Sound Technology; Radio and Podcasting

Level 5

Audio Recording, Broadcast Standards; The Media Entrepreneur; Live Performance Operations; Broadcast Studio Operations; Sound for TV; Film and Games

Sandwich degree: Year-long placement.

Level 6

Music Video Production; Devices, Apps and Streaming; Project Preparation; Career Management; Audio Restoration and Digital Enhancement Project

WORK-RELATED LEARNING

This course offers an invaluable opportunity to undertake a sandwich year or placement working in the industry after your second year. This experience cannot be underestimated as it will give you a chance to put what you have learnt in the first two years into practice, enhance your skills and provide a taste of what it's really like to work in the industry. It will also give you a head start when you come to negotiate your way around the competitive job market.

CAREER PROSPECTS

The first group of students from the BSc Audio and Music Production degree graduated in 2011, with a number securing employment with high profile companies, including BBC Radio 4 and Sky, clearly demonstrating the calibre of both our students and the programme itself.

Since then graduates have continued



I had studied Music Technology before and this degree will definitely widen my opportunities for employment. ■■

Audio and Music Production Graduate

this successful employment profile with companies such as Adlib, ITV, Bradford City Film, ADI tv, BBC, ITV, Channel 4, Bauer Media and various independent recording studios

One of our graduates is a BAFTA-nominated and award winning independent composer, producer and performer.

ADDITIONAL COSTS

Students are recommended to get their own headphones, portable disks and SD cards though these can all be provided by the department if required.

EXPLORE THE WORLD

Did you know that LJMU students have the opportunity to discover more about the world by studying, working or volunteering abroad? Whether you are looking to enhance your degree, improve your employability or have a life-changing experience, you could gain funding to help you realise your goals. Where and when you can go will depend on your programme of study.

🌐 ljmu.ac.uk/goabroad

📷 @LJMUGlobalOpps

SCHOLARSHIPS

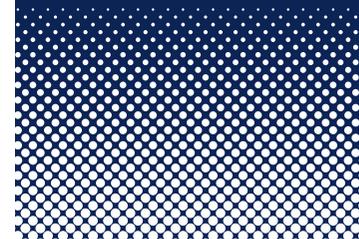
LJMU recognises hard working and inspirational applications through our generous scholarship fund. Awarded in recognition of personal achievement, you could receive either £1,000 or £10,000 for every year of your course*. So whether you're an academic high flyer or a dedicated volunteer, we want to reward your success.

**Provided you meet certain criteria, see terms and conditions online:*

ljmu.ac.uk/scholarships

SEE ALSO:

Media Production



UCAS code: **J930**

UCAS Tariff points required: 112 | **A levels minimum requirement:** 2 | **A levels subject specific requirement:** A minimum of 64 UCAS points must be taken from relevant A Level subjects. Computing, IT, Maths, other subjects may be considered | **General Studies acceptable?** Yes | **BTEC Diploma grades/subjects required:** D*D* if studied on its own or to the total of 112 UCAS points if combined with other qualifications | **BTEC Extended Diploma grades/subjects required:** DMM from a relevant subject area if studied on its own or to the total of 112 UCAS points if combined with other qualifications | **GCSE/standard grade:** Grade C/Grade 4 or above in English Language and Mathematics. Equivalent qualifications may be accepted | **Interview required?** No | **DBS check required?** No

Course duration (Yrs): 3/4 FT **Start month:** September **Campus location:** City Campus

84%

OF STUDENTS SURVEYED SAID THEY WERE SATISFIED WITH THEIR OVERALL LJMU STUDENT EXPERIENCE

National Student Survey (NSS) 2018

ELECTRICAL AND ELECTRONIC ENGINEERING

BEng (HONS) MEng (HONS) FOUNDATION

The products and services we use in everyday life would not exist unless an electrical and electronic engineer had designed the relevant parts. Electrical and electronic engineers are concerned with making our products faster, cheaper, smaller and better.

COURSE OVERVIEW

- Available as BEng and MEng qualification
- Design-led engineering curriculum emphasises, with design projects supplied by industrial partners
- State-of-the-art software and excellent technical support
- Accredited by the Institution of Engineering and Technology
- Regular contributions from professional engineers and industrial visits
- This year, for the first time, we will be working on development of an electric car.

CORE MODULES

Level 4

Engineering Principles, Microprocessors and Software, Electrical Circuit Principles, Digital and Analogue Electronics, Electrical Engineering Practice, Engineering Mathematics 1a, Engineering Mathematics 1b

Level 5

Digital and Embedded Systems, Electric Machines, Linear Electronics, Control System Design and Analysis, Electrical Engineering Practice, Applied Instrumentation, Engineering Mathematics 2

Sandwich degree: Year-long placement.

Level 6

Automation, Signal Processing,

Power Electronics, Drives and Systems, Process Control, Engineering Project, Industrial Management

Level 7 (MEng only) - core

Modelling and Control of Electric Machines and Drives; Professional Practice; Group Project.

Level 7 (MEng only) - option

Control Systems; Microelectronic System Design; VLSI Devices; Fabrication and Testing.

WORK-RELATED LEARNING

This course offers an invaluable opportunity to undertake an industrial placement after your second year. This experience cannot be underestimated as it will give you a chance to put what you have learnt in the first two years into



The Electrical and Electronic Engineering course has exceeded my expectations. It has delivered more than I anticipated and I have been left with a promise of greater things to come.

Nkosingiphile Kupe Current student

practice, enhance your skills and provide a taste of what it's really like to work in the industry. It will also give you a head start when you come to negotiate your way around the competitive job market.

CAREER PROSPECTS

Electrical and electronic engineers are employed in almost every sector of economic activity including: the utilities in power generation and distribution, telecommunications and all areas of manufacturing. Graduates from this programme have found employment as professional engineers across all sectors. Recent employers include: Siemens Plc, British Nuclear Fuels Limited, Jaguar, Aero Engine Controls (Rolls Royce-Goodrich) Ministry of Defence, E&I Engineering Ltd, National Grid.

ADDITIONAL COSTS

There are no additional costs for field trips, company visits or software. Only the normal costs such as calculators, notepads and similar are required.

EXPLORE THE WORLD

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goals. Where and when you can go will depend on your programme of study.

ljmu.ac.uk/goabroad

@LJMUGlobalOpps

SCHOLARSHIPS

LJMU recognises hard working and inspirational applications through our generous scholarship fund. Awarded in recognition of personal achievement, you could receive either £1,000 or £10,000 for every year of your course*. So whether you're an academic high flyer or a dedicated volunteer, we want to reward your success.

**Provided you meet certain criteria, see terms and conditions online:*

ljmu.ac.uk/scholarships

ACCREDITATION



OVER

95%

OF STUDENTS IN WORK OR FURTHER STUDY WITHIN 6 MONTHS OF GRADUATION

DLHE 2016/17

UCAS code: BEng (Hons) H600 MEng (Hons) H602

FOUNDATION ROUTE AVAILABLE

UCAS Tariff points required: BEng: 112, MEng: 128 | **A levels minimum requirement:** 2 | **A levels subject specific requirement:** BEng minimum of 64 and MEng 80 UCAS points at A Level or equivalent from Maths and one of the following: Physics, Chemistry, Computing, Further Maths, Electronics or Engineering | **General Studies acceptable?** Yes | **BTEC Diploma grades/subjects required:** Must be in an engineering discipline with a distinction grade in the Further Mathematics for Technicians unit. BEng - D*D* if studied on its own or to the total of 112 UCAS points when combined with other qualifications; MEng - to the value of 128 UCAS points when combined with other qualifications | **BTEC Extended Diploma grades/subjects required:** Must be in an engineering discipline with a distinction grade in the Further Mathematics unit. BEng - DMM if studied on its own or to the total of 112 UCAS points when combined with other qualifications; MEng - DDM if studied on its own or to the total of 128 UCAS points when combined with other qualifications | **GCSE/standard grade:** Grade C/ Grade 4 or above in English Language and Mathematics. Equivalent qualifications may be accepted | **Interview required?** No | **DBS check required?** No

Course duration (Yrs): BEng (Hons) 3/4 FT MEng (Hons) 4/5 FT **Start month:** September

Campus location: City Campus

MECHATRONICS AND AUTONOMOUS SYSTEMS

BEng (HONS) MEng (HONS) FOUNDATION

The products and services we use in everyday life would not exist unless an electrical and electronic engineer had designed the relevant parts. Electrical and electronic engineers are concerned with making our products faster, cheaper, smaller and better.

COURSE OVERVIEW

- Interdisciplinary course fusing mechanical, electronic and control engineering
- Well-equipped electronics and computing laboratories
- State-of-the-art software and excellent technical support
- To be accredited by the Institution of Engineering and Technology (IET)
- Options for sandwich with year-long industrial placement or study abroad

CORE MODULES

Level 4

Engineering Mathematics, Applied Mechanics, Microprocessors and

Software, Electrical Circuit Principles, Digital and Analogue Electronics, Electrical Engineering Practice

Level 5

Mechatronics, Applied Mechanics, Linear Electronics, Control System Design and Analysis, Electrical Engineering Practice, Applied Instrumentation, Engineering Mathematics

Level 6

Automation, Dynamics and Control, Process Control, Autonomous Systems and Machine Learning, Industrial Management, Mechatronics Project

Level 7

Group Project, Control Systems, Professional Practice, Digital Control, Modelling and Simulation

WORK-RELATED LEARNING

The Department of Electronics and Electrical Engineering has a very high success rate in terms of its graduates finding employment within their chosen field of study. Employers recognise that, because of the department's strong focus on practical work, our graduates are able to make a useful contribution within a very short time-frame.

CAREER PROSPECTS

All of industry now uses industrial automation systems, whether the company is involved in manufacturing or process control. Modern automobile production would be impossible without the robots, CNC machines and automated test equipment that make sure the sub-

assemblies the human workers bolt together, fit properly and work as intended.

Robotics and autonomous systems are a red-hot topic now, with the move toward self-driving automobiles, which will almost certainly be upon us in the next few years.

Recent LJMU engineering graduates are now working at Sellafield, Jaguar Landrover, Aston Martin and IBM.

**Provided you meet certain criteria, see terms and conditions online: ljmu.ac.uk/scholarships*

EXPLORE THE WORLD

Did you know that LJMU students have the opportunity to discover more about the world by studying, working or volunteering abroad? Whether you are looking to enhance your degree, improve your employability or have a life-changing experience, you could gain funding to help you realise your goals. Where and when you can go will depend on your programme of study.

 ljmu.ac.uk/goabroad

 [@LJMUGlobalOpps](https://www.instagram.com/LJMUGlobalOpps)

SCHOLARSHIPS

LJMU recognises hard working and inspirational applications through our generous scholarship fund. Awarded in recognition of personal achievement, you could receive either £1,000 or £10,000 for every year of your course*. So whether you're an academic high flyer or a dedicated volunteer, we want to reward your success.

SEE ALSO:

Mechanical Engineering booklet

UCAS code: BEng (Hons) **F001** MEng (Hons) **F003**

FOUNDATION ROUTE AVAILABLE

UCAS Tariff points required: BEng: 112, MEng: 128 | **A levels minimum requirement:** 2 | **A levels subject specific requirement:** BEng minimum of 64 and MEng 80 UCAS points at A Level or equivalent from Maths and one of the following: Physics, Chemistry, Computing, Further Maths, Electronics or Engineering | **General Studies acceptable?** Yes | **BTEC Diploma grades/subjects required:** Must be in an engineering discipline with a distinction grade in the Further Mathematics for Technicians unit. BEng - D*D* if studied on its own or to the total of 112 UCAS points when combined with other qualifications; MEng - to the value of 128 UCAS points when combined with other qualifications | **BTEC Extended Diploma grades/subjects required:** Must be in an engineering discipline with a distinction grade in the Further Mathematics unit. BEng - DMM if studied on its own or to the total of 112 UCAS points when combined with other qualifications; MEng - DDM if studied on its own or to the total of 128 UCAS points when combined with other qualifications | **GCSE/standard grade:** Grade C/Grade 4 or above in English Language and Mathematics. Equivalent qualifications may be accepted | **Interview required?** No | **DBS check required?** No

Course duration (Yrs): BEng (Hons) 3/4 FT MEng (Hons) 4/5 FT **Start month:** September

Campus location: City Campus

LIVERPOOL VOTED SECOND IN THE TOP 10 STUDENT CITIES IN THE UK

#2

PRODUCT DESIGN ENGINEERING

BSc (HONS)

Innovation and creativity in almost all stages of design and production are critical to the success of many products and multimedia technology plays an increasingly important role in enabling companies to compete globally. This professionally-accredited course combines skills development in traditional hand-generated design work, with the latest computer-aided design techniques.

COURSE OVERVIEW

- Design-led curriculum and opportunities to exhibit at the University's annual Product Innovation Show
- Teaching delivered in well-equipped laboratories with state-of-the-art software plus excellent technical support
- All students receive a personal copy of SolidWorks 3D CAD software and access to all Autodesk products
- Thriving student industrial design society
- Option of completing a year-long industrial placement or International module

CORE MODULES

Level 4

Computer Aided 3D Solid Modelling,

Freehand and Digital Sketching, Engineering Drawing, Mathematics and Scientific Principles for Designers, New Product Development Process, Application of Electronics and Software in Product Design, Model Making and Engineering Workshop Practice

Level 5

Advanced Computer Aided 3D Surface and Solid Modelling, Posters and Process Book Presentation, Static and Dynamic Analysis of Product Components, Design for Manufacture and Assembly, Mechatronic Design, Digital Marketing and Business Model Development

Sandwich degree: Year-long placement.

Level 6

Design Project Management, Product Design Research Methods, User Centred Design, Embodiment Design Process, Sustainability and Ethics in Design

WORK-RELATED LEARNING

Local companies contribute to the design and development of this course and in fact many of them offer work placements to our students. These placements offer an invaluable opportunity to join a commercial company for a year and put all you have learnt in the first two years into practice.

CAREER PROSPECTS

Design is a growing sector, offering opportunities in many different industries. Increasingly complex product design and manufacturing processes mean designers will continue to enjoy good employment prospects. Many design professionals go freelance or decide to start their own business. Such as graduates Troy Baker (Managing Director) and Graham Wilson (Technical Director), founders of Design Reality, a design consultancy based in St Asaph, who



The course is very hands-on and fast paced but if you work hard the results will show.

Emma Rawling Student

also deliver guest lectures on the course.

**Provided you meet certain criteria, see terms and conditions online: ljmu.ac.uk/scholarships*

ADDITIONAL COSTS

Throughout the course students can expect to incur expenses over and above their ordinary living costs. The faculty will provide certain basic design materials; above this students are expected to provide their own design materials.

ACCREDITATION



EXPLORE THE WORLD

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SEE ALSO:

Architecture*
Fine Art*
Graphic Design and Illustration*
Interior Architecture*

*Foundation routes available.

£4M

AWARDED ANNUALLY IN SCHOLARSHIPS, PRIZES AND HARDSHIP FUNDS

LJMU ON DEMAND Available 24/7



Watch **on-demand videos** and explore our **courses, campus facilities, accommodation, funding, life at LJMU** and more.

ljmu.ac.uk/on-demand



FURTHER INFORMATION

Please contact the Faculty of Engineering and Technology on:

Tel: **0151 231 2777**

Email: fetadmissions@ljmu.ac.uk

If you have any queries relating to LJMU or university life in general please contact:

Tel: **+44(0)151 231 5090**

Email: courses@ljmu.ac.uk

Web: ljmu.ac.uk

The university offers the information contained in this brochure as a general guide only, to prospective undergraduate students wishing to apply for a place at the university. It does not constitute or form part of any contract and is not binding on prospective students, students or the university.

The information in this brochure is correct at the time of going to press (May 2021) and the university hopes to provide the programmes and facilities set out in this brochure. However, some changes will inevitably occur in the interval between publication and the academic year to which the brochure relates and the university reserves the right to withdraw or make alterations to courses and facilities if necessary. Applicants should not rely solely on this brochure and should use this brochure in conjunction with the university website which we shall maintain and keep up-to-date: ljmu.ac.uk

All images, experiences and opportunities referenced in this handbook relate to the period before and occasionally during the Covid-19 pandemic. Whilst LJMU wishes to continue to offer its students the best possible student experience for the 2022 academic year, it is committed to protecting its students, staff and wider community in respect of the Covid-19 pandemic and as such adherence to all applicable laws and government guidance is of utmost importance. This may result in certain experiences or opportunities not being available or being modified or adjusted in light of the same. LJMU continues to monitor the position and provides regular updates on its website ljmu.ac.uk/movingforward

All opportunities, and experiences offered to students from September 2022 will be subject to government guidance and may not be available due to the Covid-19 pandemic.

This guide is available in different formats, please contact us for more information.

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ljmu.ac.uk