

Design and Technology

BSc Hons 3/4-year courses





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Dean of the School of Engineering, Design and Technology

Professor Alastair Wood

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The University of Bradford - **Confronting Inequality: Celebrating Diversity™**
The University of Bradford is committed to promoting equality, diversity and an inclusive and supportive environment for students, staff and others closely associated with the University in conformity with the provisions of its Charter.

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* Indicates a professionally accredited course

WELCOME FROM THE DEAN

Welcome to the School of Engineering, Design and Technology at the University of Bradford. I am proud of our undergraduate courses, which cover a broad spectrum of disciplines across the whole range of Engineering, Design and Technology. This brochure presents our full-time courses in the generalised areas of Product and Automotive Design, Technology, and Technology Management.



Industrial studies at Bradford have entered a new and exciting phase of activity in which we emphasise the interdisciplinary nature of Engineering, Design and Technology in all its forms. In particular our Design, Technology, and Technology Management courses complement the Engineering courses by being more applications-oriented and broadly based. This concept has allowed us to create a different set of courses which appeal to a much broader student base, and which impose no specific requirements at A/AS level or equivalent (see page 18 for admissions criteria). If you are interested in the generalised areas of Industrial Technology, Product and Automotive Design, Technology Management or Clinical Technology, then I am sure you will find a course that matches your interests in the following pages. Some of the additional reasons I feel studying for your degree with us will be such a special experience, and which are regularly referred to by our graduates, external examiners, and government assessors alike, include:

Excellent quality courses

Our degrees are highly regarded by industry and independent assessors. Our paid placements provide a practical introduction to a career in engineering, design and technology. In the recent Government Quality Audit our teaching, learning, and assessment methodologies were all considered to be of the highest standard.

Excellent facilities

The School has one of the highest ratios of computers to students in the country, together with a wide range of specialist infrastructure and equipment to support the courses listed in this brochure. The Design courses benefit from a studio environment and ongoing investment in Alias, a high-power surface modelling system, plus industry-led solid and surface modelling software, traditional clay modelling and prototyping equipment.

Friendly atmosphere

The School prides itself on the warm welcome it gives to all students and visitors to the University. Academic staff are approachable and adopt an open-door policy to student tutoring. We welcome applications from women, students with disabilities and students of all races and religions.

Industrial placements

All our courses are available with an optional 12 months' supervised industrial training which greatly enhances the value of your degree - see pages 6 and 7.

Excellent graduate employment

Our heritage of 'making knowledge work' means that we continue to respond to the needs of employers, and our graduate employment record has regularly been amongst the best in the country.

I do hope that after reading this brochure, you will want to apply for one of our courses and then, if possible, come to visit us on one of our Open Days for undergraduate applicants. If you do, I am confident you will soon feel as enthusiastic as I do about the School and the opportunities we offer. Certainly I am sure that if you choose to study one of our courses in this brochure, it will set you on the path to a challenging, rewarding and successful career.



Professor Alastair Wood

Dean of the School of Engineering,
Design and Technology



About the School



Facilities

ICT is crucially important in modern industry; we teach these skills to a high level, and most of our students prepare their reports and coursework by computer. To support this activity the School has over 200 high-specification computers available for student use with an extensive library of specialist industry-standard software including computer-aided analysis, design, drawing and manufacture, industrial simulation, project and risk management, computer modelling techniques, etc.

In addition to our virtual laboratories we have very extensive physical laboratories which support our teaching in the areas of mechanical and automotive technologies, fluid mechanics and water management, environmental monitoring, etc. We also have two specialist design suites which enable students to work in a group-based environment on a wide range of design projects representative of those encountered in many aspects of industry.

We are regularly investing in new equipment and technology to ensure all our laboratories are kept up to date with modern practice. For example new state-of-the-art gait/motion capture equipment has recently been obtained to enhance our sport and medical technology facilities, we are in the process of establishing the Mobile and Satellite Communications Research Centre (backed by more than £550,000 from the Higher Education Funding Council for England), and two engine test beds have recently been added to our automotive test facilities. In addition we are continuously upgrading our computing facilities to ensure that these are kept fully up to date.

The School is a major enterprise with an annual turnover in excess of £10m. We have approximately 1,100 undergraduate students in total with typically 20-70 students on each year of each course. The School is located in a purpose-built modern building and is located at the centre of the University campus for optimum access to all the learning, sporting and social facilities available.

The School has over 60 members of academic staff and a similar number of support staff. The majority of our academic staff are active researchers, and this ensures our teaching is informed by the most up-to-date knowledge. The School has substantial world-class research activity, including the Yorkshire Forward

Centre of Industrial Collaboration (CIC) in Polymer Engineering, the Interdisciplinary Research Centre (IRC) in Polymer Science and Technology, and a second prestigious Yorkshire Forward-funded CIC in Wireless Technologies. The School has been one of the Ford Motor Company's Partner Institutions for MSc programmes since 1994, with the Ford Chair of Quality Engineering in post since 1995.

Recently the University had an Academic Audit by Government Assessors, as a part of which the School's teaching activities were subject to in-depth scrutiny. The result of this procedure was that **the School was awarded the highest commendation for its teaching and support of students.**

“ The School of Engineering, Design and Technology was awarded the highest commendation for its teaching and support of students. ”

Teaching

All the courses in this brochure are of three years' full-time academic duration, with an optional year of industrial training. Each academic year is divided into two semesters (September to late-January, and late-January to May) with breaks for Christmas and Easter. You take six modules, or their equivalent, in each semester, making twelve in each year, and 36 over the three academic years of all Bachelor courses. Some aspects of the course may be taught in double modules, but this is clearly indicated wherever it occurs.

Each full module comprises 100 hours of student learning time, of which approximately one-third takes the form of timetabled lectures, tutorials, laboratory work, small group work or self-paced directed study using audio or video tapes and computer-aided learning materials. The remaining two-thirds is taken up with your own private study. Within this structure you should be able to find a learning style that particularly suits you.

Assessment

Each module is assessed during the semester in which it is taught. Some modules use formal examinations, which include closed book, open book and 'seen' papers. Others are assessed by coursework, for example, technical reports, oral presentations, or computer assignments. Many modules use a combination of these approaches.

Assessment in the first year is used to monitor your progress and to ensure you are competent to proceed to the second year. All subsequent assessment will count towards your final degree. If you are taking the Industrial Training (sandwich) year, this will be monitored and must be satisfactorily completed; in which case you will be awarded a Diploma in Industrial Studies in addition to your degree.



Design and build a hovercraft project

Student support

Our staff are friendly and approachable. Within the first two weeks on their course, students are allocated personal tutors in groups of about six. Your personal tutor will take an interest in your academic and personal welfare, and will be your first point of contact if you have any concerns which may affect your work - be they academic, medical, financial or personal. If your tutor cannot immediately help, he or she will be able to call on the substantial welfare resources at the University, all of which are there to ensure your stay at Bradford is a successful and happy one. The University runs additional specialist tutor support (including English Language tuition) for international students.

Traditionally about 10-15% of our students in all disciplines are women, although this is a proportion we are keen to increase. **FAIRER** (Females Actively Involved in Rewarding Engineering Roles) is the School Society which offers a support and social network for our female students, and organises a significant number of events each year including teambuilding, gastronomic, social and cultural activities.

Innovative Taster Courses

At Bradford we have a growing reputation for our work promoting science and engineering to young people via a range of exciting, hands-on projects and taster courses, e.g. our popular and highly acclaimed hovercraft project, and our annual National Science Week programme. For further details please contact: Joanne Crowther, External Relations & Marketing Officer, Tel: **01274 233871** or Email: j.crowther@bradford.ac.uk



FAIRER members on a team-building mission

MEng and BEng Courses

We also offer a suite of engineering courses which are detailed both on our website (www.eng.brad.ac.uk) and in a separate course booklet available from the Course Enquiries Office.

Tel: 0800 073 1225
Minicom: 01274 233685
Fax: 01274 235585
Email: course-enquiries@bradford.ac.uk

Industrial Links and Industrial Training



Industrial relevance is a key factor in the design of our courses, all of which aim to address the practical aspects of Engineering, Design and Technology as well as the theoretical background. Our academic staff keep in touch with the needs of industry through their research, consultancy and professional institution contacts, as well as through supervising students on industrial placement. In the light of this experience, all our courses are reviewed on an annual basis to ensure they are kept up to date with the needs of employers.

Professional Advisory Board

We have an enthusiastic Professional Advisory Board which comprises senior industrialists from across the full spectrum of industry. It meets biannually at the University with the academic staff to ensure that all aspects of the School's courses and operations are up to date and relevant to the needs of employers.

Professional Institutions

The professional institutions provide an important focus for discussion on topical issues, disseminate information on new developments, and hold many regular meetings throughout the country. They also confer *Incorporated and Chartered status* on suitably qualified graduates with appropriate experience. Because most of the courses in this brochure are relatively new and broadly based, we are in discussion with several professional bodies with a view to recognition.

Industrial Training

All our degree courses are available with an optional 12 months of integrated industrial training immediately after your second year, as we strongly believe this adds value to the academic programmes in a number of ways.

Industrial training enables you to apply what you learn on your course to the needs of an employer. This places your studies firmly in a practical context and provides direct opportunity for honing those personal and problem-solving skills that are so important in the modern world.

Students gain considerable maturity of outlook, sense of responsibility, enthusiasm, motivation, and a much clearer idea of where they wish to focus their future careers from their period in industry. Many put this experience to direct use in the formulation and execution of their future project work. For these reasons students commonly obtain a degree classification higher than they might have expected if they had not been on placement.

“

88% of our 2008 graduates from our BSc courses in the School of Engineering, Design and Technology were in employment or further study within 6 months of graduating.

* Source: DLHE (Destination of Leavers from Higher Education), Higher Education Statistics Agency

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Industrial Links and Industrial Training

www.eng.brad.ac.uk/ug_studies/

On a practical level, students are paid a full salary on placement, normally between £12,000 and £18,000 (although £20,000 is not unknown!). Most manage to save from this to help their finances on return to the University. Many students impress their employers to the extent that they are offered sponsorship for their remaining student years - often together with the promise of a job on graduation!

Analysis undertaken by the Association of Graduate Recruiters, and our own statistics, show that relevant work experience is valued just as highly by most employers as the class of your degree; thus students who have been on placement tend to get the best jobs on graduation. If you have no industrial experience to start with, then we strongly recommend the period of Industrial Training. However, the 'straight-through' courses may be more suitable for you if you already have some relevant work experience. The main point is that it is your choice: you can opt to take or withdraw from the sandwich year up to the end of the second year.

The University of Bradford has over 50 years' experience of providing sandwich education, and has extensive contacts throughout industry in the UK and abroad. The School has a specialist Placements Officer who will provide help and advice to support suitable placement; and if you wish you can make additional enquiries of your own. You will also receive help in the skills of CV writing, job applications and preparing for interview. Thus we do not allocate jobs to students, but help you to obtain

the position you would wish for yourself so that your placement matches your interests as closely as possible. Please note that we cannot guarantee a placement because it ultimately depends upon availability and the prospective employer's decision, however we do promise to do everything we can to support you in finding one.

A tutor will visit you during the placement and give you any help and support you may need. Your employer will submit interim and final reports on your progress. Successful industrial placement students may also be eligible to apply for the Licentiate of the City & Guilds Institute (LCGI), one of City & Guilds' Senior Awards.

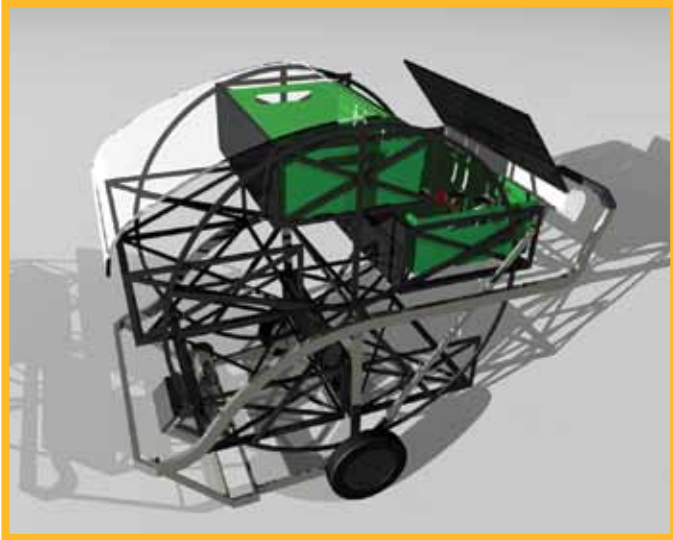
Graduate employment

The University of Bradford's graduate employment record is regularly amongst the best in the country. With our emphasis on industrial relevance, the School of Engineering, Design and Technology has been a major positive factor in these statistics; the range of starting salaries of our engineering graduates is from around £18,000 - £30,000.

More detailed information on graduate employment is available on the University website at www.careers.brad.ac.uk/prospective/careers



BSc (Hons) in Product Design



Fundamental to both commercial competitiveness and sustainability, Product Design is an applied art focused upon developing the aesthetics and usability of products whilst exceeding expectations of function, manufacture and economy.

Product Designers need:

- A very wide knowledge base such as visual language, moments of pleasure, materials, technology, ergonomics, interfaces, marketing and costing
- A range of skills (e.g. problem solving, sketching, applied numeracy, rendering, analysis, computer modelling, prototype modelling, report writing and oral presentation) and
- A clear understanding of the design process and design methods.

As a graduate you will be able to develop a career in Product Design or in the management of design-oriented businesses. You will have the opportunity to become proficient in top-end design and CAD packages such as Alias, Solid Edge and Adobe Creative Suite, skills highly sought after in industry.

Your ability to think clearly and logically will also be appreciated by many other professions; your studies may well be a bridge to an alternative career, in other words a real foundation for life. Moreover, the breadth of the degree will provide a suitable foundation for entry to higher degree courses in a range of subject areas.

About the Course

Most of the knowledge and skills-based aspects are introduced, explored, examined and practised in taught modules using a mixture of formal lectures, seminars, tutorials and practical sessions. These are brought together and applied in the integrating projects that revolve around the STUDIO model “Learning about design and accumulating skills in a social setting”.

In the first year you will acquire fundamental knowledge in information technology, conceptual design, manual communication skills, computerised presentation, materials, manufacture, design process and methods, mechanical and electromechanical technology, and CAD, and enhance your creativity by studying the history of visual arts. Much of this will be applied in several design projects.

The second year builds upon the foundations laid in the first year with an increasingly professional expectation. You will develop a greater awareness of ergonomics, interaction, reverse-engineering, 3D modelling, manufacturing and assembly, and marketing. Product development and prototyping continues to develop your design skills alongside the two design projects (one of which may be an industrially sponsored competition).

Students are encouraged to undertake a placement year (see pages 6 and 7).

The final year is firmly centred on an individual major design project that will allow you to develop and hone your design skills and will enable you to be involved in a product design project from start to prototype /computer model. Studio mentoring will enable you to learn from teaching, and a number of optional modules allow you to choose a specific flavour to your final year of study.

The dedicated, experienced and motivated Design staff are supported by invited lecturers from industry and other higher education institutions.

Further information including a full course outline, example timetables, etc. if available at www.eng.brad.ac.uk

Study Pattern	UCAS code
3-Year BSc (Hons)	HW72 BSc/ProdD
4-year BSc (Hons) & Diploma of Industrial Studies (Including placement year)	HWR2 BSc/ProdD4





“

I enjoy studying Design at Bradford, the facilities are good, especially in the Design Studio. I have learnt so many things, that in my second year I feel like I am a designer already.

Mahamat Hangata
Design student

”

“

Design at the University is a fantastic course.

Chander Kainth
Design student

”

BSc (Hons) in Automotive Design Technology

Vehicles have a deep-seated place in modern life. They are seen as an economic and social necessity as well as a source of enjoyment and sport. However they consume vital natural resources and have a serious impact upon the environment. Automotive Vehicle Design is a challenging career calling for an increasing awareness of diverse technical and social issues.

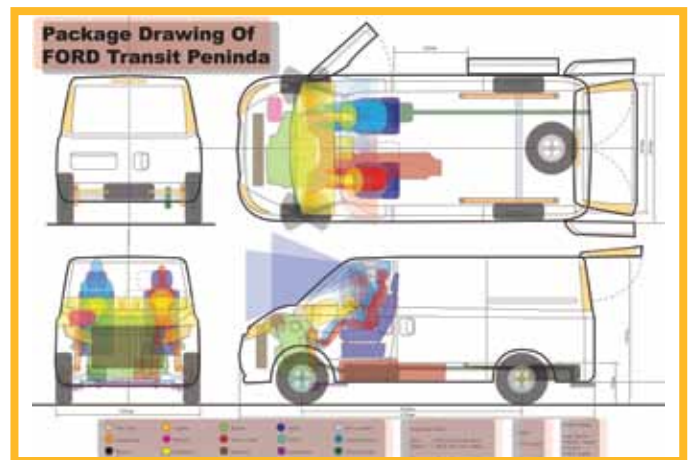
Any automotive vehicle is a highly complex set of solutions and compromises. The designer aims to achieve performance, aesthetics and marketability whilst meeting tight constraints on safety, fuel consumption, emissions and recyclability. This calls for specialised knowledge and skills as well as a keen awareness of cultural, social and technological developments. At Bradford we have an excellent record in automotive studies and first-rate associations with the global automotive industry. You will have the opportunity to become proficient in top-end design and CAD packages such as Alias, Solid Edge and Adobe Creative Suite, skills highly sought after in Industry.

Your studies at Bradford will also be a foundation for life aimed at developing a wide range of personal and professional skills. The ability of a designer and technologist to think clearly and logically is widely appreciated by many other professions, and your studies may well be a bridge to alternative careers. Moreover, the breadth of the degree will provide a suitable foundation for entry to higher degree courses in a range of subject areas.

About the Course

The Automotive Design Technology course provides a balanced education in vehicle design, in technologies that underpin vehicle manufacture, in management and in the commercial environment and pressures that drive automotive design and innovation. The course covers the crucial relationships between a vehicle's aesthetic form and its function, the technology of vehicle production and the social and economic environment in which automotive production takes place.

Most of the knowledge and skills-based aspects are introduced, explored, examined and practised in taught modules using a mixture of formal lectures, seminars, tutorials and practical sessions. These are brought together and applied in the



integrating projects that revolve around the STUDIO model "Learning about design and accumulating skills in a social setting".

In the first year you will acquire fundamental knowledge in information technology, conceptual design, manual communication skills, computerised presentation, materials, manufacture, design process and methods, mechanical and electromechanical technology, computer-aided design (CAD), and enhance your creativity by studying the history of visual arts. Much of this will be applied in several design projects.

The second year builds upon the foundations laid in the first year with an increasing emphasis placed on professional car design. You will develop a greater awareness of ergonomics, driver workstation, reverse engineering, 3D solid modelling, aerodynamics, car manufacture and assembly, and marketing. Car interior packaging and car body modelling continues to develop your design skills alongside the two design projects. Usually, one of these projects will be an industrially sponsored competition.

Students are encouraged to undertake a placement year (see pages 6 and 7).

In the final year the essential expertise required for the design, development and marketing of vehicles is further enhanced by taking modules in safety and legislation, project management, marketing, corporate strategy and management. The final-year automotive design project takes up one half of your time enabling you to integrate many different aspects of the course into a vehicle design project.

The dedicated, experienced and motivated Design staff are supported by invited lecturers from industry and other higher education institutions.

Further information including a full course outline, example timetables, etc. if available at www.eng.brad.ac.uk

Study Pattern	UCAS code
3-Year BSc (Hons)	H390 BSc/ADT
4-year BSc (Hons) & Diploma of Industrial Studies (Including placement year)	H391 BSc/ADT4

BSc (Hons) in Electromechanical Technology

www.eng.brad.ac.uk/ug_studies/



Electromechanical systems are a vital part of everyday life and form a major part of practically every device that is used on a daily basis, from life-critical devices such as dialysis machines to entertainment devices such as Blu-ray players. The thing that these systems all have in common is the interaction of mechanical and electronic systems in such a way as to be invisible to the users. Furthermore, these devices are almost always put together by industrial robots which are themselves complex electromechanical systems.

Our Electromechanical Technology programme aims to produce a skilled and knowledgeable graduate who can embark on a fulfilling and rewarding career as a technologist in a wide range of environments.

The course has the following objectives to enable you to meet this standard:

About the Course

- To provide a thorough grounding in the basic principles and theory necessary to understand how systems and components work.
- To involve you in the application of these principles in component and system design.
- To allow you some specialisation in the technologies being studied and to use CAD systems for design and use in laboratory experimental work to build and test designs.
- To use the skills obtained to complete a piece of individual project work in your chosen specialisation.

The first year of the course provides basic knowledge in mechanics, electronics, computer simulation tools, materials, mathematics, and manufacturing, and develops key skills in communications and interpersonal skills.

Hands-on work on robotics projects provides you with the perfect introduction to electromechanical technology. The middle year further develops your core robotic technology skills and introduces digital electronics and embedded systems or control.

Following your second year of studies you may wish to take an optional year of industrial training (see pages 6 and 7). Our sandwich course students will have the opportunity to work with local, national and international vehicle companies to gain valuable industrial experience.

The final year develops your specialised knowledge in advanced robotics, power electronics and intelligent devices.

The final-year project allows you to integrate different aspects of the course in an area of particular interest to you; in the process you will develop skills in project management and critical reasoning and judgement, while enhancing the self-motivation, self-discipline, patience and persistence essential to your future career success.

Further information including a full course outline, example timetables, etc. is available at www.eng.brad.ac.uk

Study Pattern	UCAS code
3-year BSc (Hons)	HH63 BSc/ET
4-year BSc (Hons) & Diploma of Industrial Studies (Including placement year)	H360 BSc/EleT

BSc (Hons) in Clinical Technology

Technological innovation in the field of medicine and healthcare is accelerating at an enormous pace. The modern hospital is now the centre of a technologically sophisticated healthcare system, and this requires equally technologically sophisticated staff. Clinical technologists are intimately involved in many aspects of healthcare, and are instrumental in bridging the gap between clinicians and engineers.

This BSc degree aims to provide students with the educational background required to act as clinical technologists in the health service, capable of applying their knowledge to assist in the diagnosis, treatment and rehabilitation of patients. There is strong demand in the National Health Service (NHS) for graduates with the right mix of technical and clinical abilities, and this demand is expected to increase with the ongoing reforms of NHS structures.

The School of Engineering, Design and Technology (EDT) has a long history of medical engineering teaching and research and was the **first in the country to offer a Medical Engineering BEng course**. The School continues to lead in this area, offering the **first full-time Clinical Technology BSc course in the country** (first intake in 2004) and collaborating with the Association of Renal Technologists to offer renal technology modules to both full-time students and professionals.

The School's research groups are all centres of excellence, and in the latest Research Assessment Exercise 2008 our research was recognised as of international significance. Cutting-edge research feeds directly into teaching, ensuring your studies are innovative, current and focused.

About the Course

The course is cross-disciplinary and allows you to gain experience in elements of science, engineering, and management. You will also examine the health service and the roles of the different professionals within it. Based in EDT, the course takes full advantage of the strength of healthcare expertise within the University. The School of Health Studies and the School of Life Sciences contribute to the teaching of the course, as well as clinical hospital staff. Topics studied include:

Biomechanics - the study of skeletal movement, the flow of body fluids, muscle action forces and the use of biomaterials in the body

Radiology - the interaction of energy with the body, including X-ray radiography, diagnostic ultrasound and nuclear magnetic resonance imaging

Medical systems - the technologies and electronic systems associated with critical care

Rehabilitation engineering - the development of therapeutic and rehabilitation devices and procedures

Clinical management - the management of people, equipment, maintenance and the resources necessary to provide a viable health service.

Other core modules:

- Cell and Microbiology for Engineers
- Tissue Engineering and Wound Repair
- Renal Technology
- Infection Control
- Clinical Signals

The final year of the course offers you a choice of optional modules, allowing you some scope to tailor the degree to your particular areas of interest. This is seen as valuable for a subject with such a broad range of applications, from wheelchair services to nuclear medicine.

A final-year project allows you to investigate a specialised topic of your choosing in detail. This might be a clinical study, the development of a medical device, or a management study. Many projects are industrially sponsored, and several students have won regional and national prizes for their work.

Further information including a full course outline, example timetables, etc. is available at www.eng.brad.ac.uk

Study Pattern	UCAS code
3-year BSc (Hons)	H900 BSc/CT
4-year BSc (Hons) & Diploma of Industrial Studies (Including placement year)	H901 BSc/CT4



BSc (Hons) in Mechanical and Vehicle Technology*

www.eng.brad.ac.uk/ug_studies/



*** Professionally accredited by the Institution of Mechanical Engineers, meeting the educational requirements for IEng status (Incorporated Engineer)**

Our Mechanical and Vehicle Technology course provides an up-to-date focus on the advanced sensing and vehicle control technologies that ease the stress of driving and enhance safety and efficiency in personal transport. This focus on Intelligent Vehicle Technology reflects the needs of industry, leading to a sustainable environment and meeting legislative demands and customer expectations. Intelligent vehicles will form an integral aspect of the next generation technology of personal and commercial transportation systems.

Thus, the primary goal of modern vehicle technology is to allow drivers to operate vehicles more safely and effectively using technologies integrated to create a fully intelligent vehicle that works co-operatively with the driver. Intelligent Cruise Control, Lane Departure Warning, Collision Mitigation Braking, Anti-Brake Locking Systems, Steer-by-Wire, Global Positioning Systems (GPS) are some of the examples of such technologies.

About the Course

Four main objectives underpin all three academic years of the course. Firstly, we aim to provide you with the basic principles and theory necessary to understand how machines and vehicles work. Secondly, we involve you in the application of these principles and theory to actual components and system design. Thirdly, we aim to provide you with a full understanding of modern design, simulation and control technologies, using industry-standard Computer-Aided Design tools and techniques. Finally, we aim to develop skills in project planning and management through the many “hands-on” projects which form an important part of the course.

The first year of the course provides basic knowledge in mechanics, electronics, computer simulation tools, materials, mathematics, and manufacturing, and develops key skills in information technology, communications and interpersonal skills. Hands-on work on existing vehicle projects provides you with the perfect introduction to vehicle technology. The middle year further develops your core mechatronics technology skills and introduces digital electronics and advanced vehicle technologies.

Following your second year of studies you may wish to take an optional year of industrial training (see pages 6 and 7). Our sandwich course students will have the opportunity to work with national and international vehicle manufacturers and their supply chains, including for example, Vauxhall, Toyota, Nissan, Ford, Jaguar, Holset, Wabco, Perkins Engines, and Rolls-Royce.

The final year develops your specialised knowledge in advanced automotive systems and their reliability. Core modules include Intelligent Devices and Vehicle Electrical and Electronic Systems. The final-year project allows you to integrate different aspects of the course in an area of particular interest to you; in the process you will develop skills in project management and critical reasoning and judgement, while enhancing the self-motivation, self-discipline, patience and persistence essential to your future career success.

Further information including a full course outline, example timetables, etc. is available at www.eng.brad.ac.uk

Study Pattern	UCAS code
3-year BSc (Hons)	H334 BSc/MVT
4-year BSc (Hons) & Diploma of Industrial Studies (Including placement year)	H335 BSc/MVT4

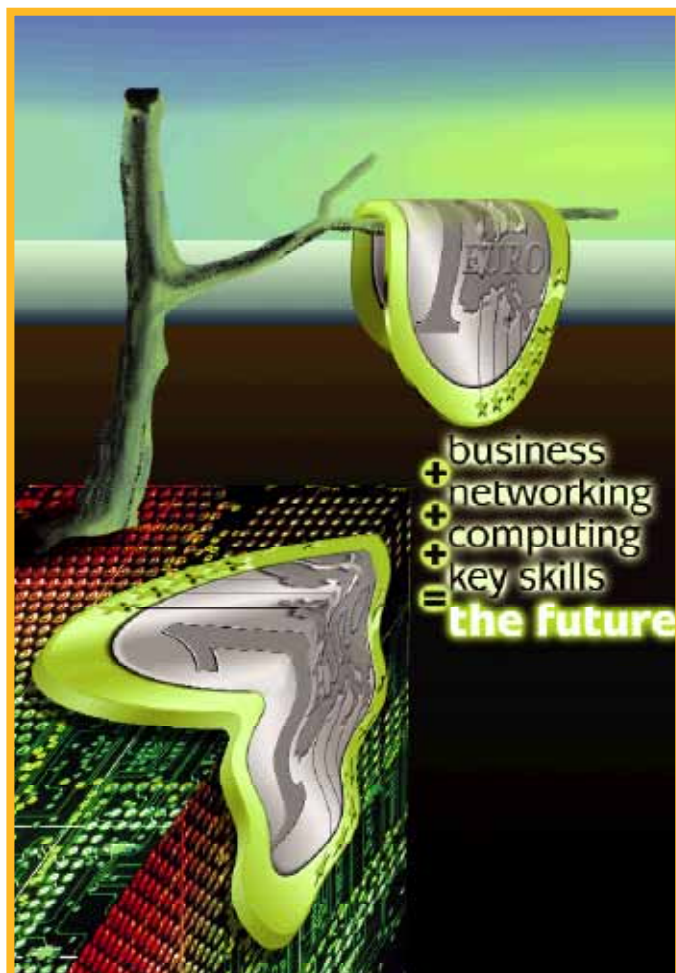
BSc (Hons) in E-Business Technology and Management

This hugely topical and hands-on programme builds on the Information Technology revolution and provides you with the tools to tap into lucrative career opportunities within the E-Business arena and take advantage of the innovative ways of doing business in the world of electronic economy.

Who is this course aimed at?

The field of E-Business Technology and Management offers great opportunities for both gifted entrepreneurs and large corporate organisations to accumulate wealth. This course is therefore ideal for you if:

- You have entrepreneurial spirit with the originality and flair to start your own business on the internet;
- You are an IT manager;
- You are a business manager who wants to exploit new methods of doing business in the electronic age;
- You are a project manager;
- You are a software developer; or
- You are an infrastructure developer.



About the course

There are four key strands to the course:

- **Commerce** – business skills; electronic business
- **Networking** – the Internet; cryptography; security; mobile communications
- **Computing** – electronics; systems; software engineering; graphics
- **Key skills** – personal transferable skills

The course opens professional doors for you by providing advanced practical and theoretical skills to allow you to:

- Build E-Business applications
- Understand the business environment in which E-Business will grow
- Comprehend and exploit the telecommunications systems on which the Internet is founded

In addition the course gives you an extensive and valuable knowledge of management, finance and business studies. Plus, it allows you to take an optional 12-month placement in industry (see pages 6 and 7).

Most of your taught modules include assessed hands-on activity, and you will enjoy a high practical content to the course.

You will undertake a major individual project in the final year with topics inspired by research studies within the School of Engineering, Design and Technology, as well as from companies involved with the course. This will give you the chance to work at the cutting edge of E-Business research and development – giving you a further advantage in the job market.

For further information, including a full course outline, example timetables, student views, and more, go to www.eng.brad.ac.uk

Useful links for career information on E-Business:

- Institution of Engineering and Technology www.theiet.org/
- The British Computer Society www.bcs.org/
- Chartered Management Institute www.managers.org.uk/

Study Pattern	UCAS code
3-year BSc (Hons)	GN52 BSc/EBTM
4-year BSc (Hons) & Diploma of Industrial Studies (Including placement year)	GNM2 BSc/EBTM4

BSc (Hons) in Information Technology Management

www.eng.brad.ac.uk/ug_studies/



This highly multidisciplinary programme creates graduates who can take on management roles in industry and commerce and who are familiar with all aspects of technology.

The programme, which pulls together knowledge from diverse areas and also strengthens people skills and examines group dynamics, is employer-friendly as it gives your potential new boss the confidence that you have the talent and aptitude to be a high flyer in the technology arena.

The British Chamber of Commerce asserted: "Individuals with good IT skills coupled with high levels of business awareness and generic skills are at a premium."

Who is this course aimed at?

This programme is suitable for anyone who wishes to develop their knowledge in:

- Relevant technologies
- Analytical skills
- Business
- Management and commerce
- Social science

About the course

The four main strands to the course are:

- **Professional skills** – fundamental study skills; computer package and Internet skills; presentation and group activities
- **IT studies** – practical computer assembly; programming in several languages; electronics

- **Quantitative methods** – for business; financial, statistical and basic logic for IT

- **Business** – industrial relations; the social and economic context of work

In your first year you will gain a thorough introduction to all four strands, while in your second year you will cover a number of other key subjects such as C++ programming; marketing and setting up an Internet business; business simulations; and financial management.

Your final-year core subjects include digital communication networks; database management; decision support systems; and project management. An individual project will account for a quarter of your time and give you the chance to draw on different aspects of the course to solve a typical information technology management problem from industry.

You can further tailor your course in your last year by choosing from around 15 module options.

In addition, following your second year of study, you have the opportunity to take an optional year of industrial training (see pages 6 and 7).

Useful links for career information on IT management:

- Institution of Engineering and Technology www.theiet.org/
- The British Computer Society www.bcs.org/
- Chartered Management Institute www.managers.org.uk/

For further information, including a full course outline, example timetables, student views, and more, go to www.eng.brad.ac.uk

Study Pattern	UCAS code
3-year BSc (Hons)	G561 BSc/ITM
4-year BSc (Hons) & Diploma of Industrial Studies (Including placement year)	G560 BSc/ITM4

“100% of our 2008 ITM graduates were in employment or further study within six months of graduating.”

* Source: DLHE (Destination of Leavers from Higher Education), Higher Education Statistics Agency

Student View

“ I was a mature student and had been working for ten years. Doing this course has been the best time of my life. It has been a life-changing experience.

Mansoor Bhore
Technology Management student

”



BSc (Hons) in Technology Management*

www.eng.brad.ac.uk/ug_studies/

** Professionally accredited by the Institution of Engineering and Technology, meeting the educational requirements for IEng status (Incorporated Engineer)*

The interaction of technology and managers is central to the success of an organisation. Getting people to work together effectively needs a manager with a great strategic overview.

This course produces graduates who can operate in a dynamic and fast-paced environment, manage people from diverse professional backgrounds and bring the best out of their team.

The programme develops your strategic skills, teaching you how to communicate effectively across the various subject areas that contribute to a successful modern organisation. It builds your ability to break down barriers between different disciplines and generates great career opportunities in a wide range of management jobs.

Who is this course aimed at?

The course is ideal if you are aiming for a management career in:

- Organisations or businesses that have technology at their heart
- General commercial management
- Computing and information technology
- Finance
- Marketing
- Manufacturing and engineering
- Human resources
- Management consultancy
- Education

About the course

This programme allows you to study equal numbers of management and technology subjects.

In your first year you will learn the basic principles of:

- Organisational management
- Economics
- Marketing
- Business law
- Professional and communication skills
- Information technology
- Materials technology



Your second year will allow you to specialise in:

- Financial management
- Marketing strategy
- Career and personal development
- Mechanical and electronic technologies
- Product innovation
- Technology operations management

In your final year you have the chance to tailor your course to meet your career ambitions by selecting from a wide choice of modules. These include:

- Corporate strategy
- Human resource management
- The global business environment
- Product design
- Database management
- Quality assurance

A final-year project, worth three modules, also gives you the chance to focus on a management or technology topic that especially interests you.

In addition, following your second year of study, you have the opportunity to take an optional year of industrial training (see pages 6 and 7).

For further information, including a full course outline, example timetables, student views, and more, go to www.eng.brad.ac.uk

Study Pattern	UCAS code
3-year BSc (Hons)	JNX2 BSc/TM
4-year BSc (Hons) & Diploma of Industrial Studies (Including placement year)	JN92 BSc/TM4

Admissions

Please note that the courses described in this brochure are all designed to be broadly based, and therefore there are no specific post-GCSE qualifications required for any of these courses (see sections on entrance qualifications below).

Initial Procedure

If you think one of the BSc courses in this brochure suits your needs, the next step is to include us in your UCAS application (log on to www.ucas.com). Select the relevant UCAS code for the course content and pattern you think you are most likely to follow (see the specific course information on pages 8 - 17). If you are not sure at this stage which course to choose (i.e. with or without Industrial Training) we advise you to apply for the longest you might consider, as when dealing with funding authorities it is always easier to shorten your course than to lengthen it. The UCAS code for Bradford is **BRADF B56**; there is no campus code.

UK Entrance Qualifications

Our typical offers are:

For any of the BSc courses in this brochure:

- a) **200 UCAS tariff points** including at least one subject studied to A-level standard. For BSc Electromechanical Technology and BSc Mechanical and Vehicle Technology this must include a Mathematics A level or a science A level. For the other courses, we do not specify any subjects that you must offer; although a science would be useful and might include Geography, Biology, Physics or Chemistry.
- b) A minimum grade C in GCSE in English and Mathematics.

For our **Design** courses (Product Design, and Automotive Design Technology), we would like **240 points** from at least two GCE A levels (or their equivalent) which would ideally be in subject areas that demonstrate both creative and analytical ability. For example, relevant combinations of Design and Technology, Mathematics, Art, Physics, Art and Design, Combined Science, Computer Science, Communications, would be ideal. GCSE results should include A*-C in English, Design, Art, Science and Mathematics. Appropriate candidates are asked to attend an informative 'Applicant Visit Day' which includes an interview and diagnostic quiz that will help us judge design, drawing, creative and analytical ability.

If you are offering EDEXCEL/BTEC qualifications our typical offer is : merit, merit, merit.

We also welcome applicants with suitable ONC, OND, accredited Foundation courses and ACCESS qualifications.

Those without the required qualifications for the BSc can consider the Engineering Foundation Year – contact the Admissions Office.

International Entrance Qualifications

The University has a long history of welcoming students with Irish Highers, International Baccalaureate, together with a wide range of equivalent overseas qualifications. Applicants offering qualifications such as these are considered on an individual basis. If your first language is not English we normally require you to obtain a minimum score of IELTS band 6, or an equivalent English language qualification.

Direct entry

We will consider you for direct entry to the second year of our BSc courses if you hold a good HND, or a Diploma from a Polytechnic or University in Malaysia, Singapore, or Hong Kong in a relevant discipline. Students offering Advanced Standing qualifications may be considered for direct entry to the third year of a BSc course by special arrangement.

Deferred Entry

We will be very pleased to consider an application from you if you wish to defer entry to gain experience to aid your personal development. However, do look carefully at our sandwich courses to see whether a year of industrial experience integrated into your course might suit you better.

Students with Disabilities

The University of Bradford has always encouraged applications from students with disabilities, whose applications are considered on the same academic grounds as are applied to all candidates. If you indicate a disability on your UCAS form, you will be invited to discuss your particular requirements etc. with the Disability Service:

Tel: **01274 233739**
Minicom: **01274 235094**
Fax: **01274 235340**
Email: disabilities@bradford.ac.uk

Design Programme Admissions Procedure

This programme has been developed for students who want to learn about Design in a broad and realistic way. To benefit fully from this programme you will need to be creative, analytical, self-motivated and able to work hard.

Candidates should be able to demonstrate:

- enthusiasm for Design
- sufficient motivation to benefit from the course
- an understanding of what the course involves
- basic creativity
- an appropriate level of visual awareness and basic ability to draw
- the ability to express themselves clearly in spoken and written English
- sufficient analytical ability to deal with the technological content of the course

The diversity of topics embodied in the study of design makes it impossible to identify a specifically ideal candidate. It is recognised that students with a wide range of backgrounds and previous relevant experience are often able to benefit fully from such a broadly based course if they have sufficient dedication. Where possible, all appropriate applicants will be interviewed.

The following admission process is designed to allow us to establish the suitability of candidates:

- UCAS applications are carefully considered with special attention to the personal statement
- Where possible, appropriate candidates are asked to attend an 'Applicant Visit Day' (AVD) and interview, and bring a portfolio of samples of their work which is discussed during a short personal interview with staff

During the AVD applicants undertake an "ability quiz", are introduced to the approach to design adopted by the course team, visit the University and the School, and meet existing students and staff. Where appropriate, offers of a place on the course will be made at the interview.



With a history spanning the last century, the University of Bradford's values are built on firm foundations with the strong ethos of 'Making Knowledge Work™'

The University is constantly investing in the future of its students through world-class teaching and facilities.

Strong roots

Back in 1966, when England were winning the World Cup, Bradford Institute of Technology became the University of Bradford and Harold Wilson, the long-serving British Prime Minister, became our first Chancellor. Over 40 years on and the University has moved from strength to strength.

1882: The University started out as Bradford Technical College. Bradford was the textile capital of the world, its renowned products reaching the four corners of the globe

1966: The University was granted its Royal Charter which makes it one of the 'old' universities

2005: In April 2005, Imran Khan was appointed as Chancellor of the University of Bradford succeeding Baroness Betty Lockwood on her retirement

2006: The University celebrated its 40th Anniversary and the opening of a grand new front to the campus; the vibrant Atrium in the Richmond Building, a magnificent student space

Library and Computer Centre

The Library and Computer Centre are based together in the J B Priestley building, just a few minutes' walk from all the city campus buildings. The Library houses around 600,000 volumes, around 1,000 printed periodical titles and over 7,000 electronic journals. The library system is accessible online 365 days a year, 24 hours a day.

The Computer Centre offers a range of IT facilities and has been highly praised for the internet access it offers: the University of Bradford is one of the best in the UK at getting students online.

The University has wireless access to all its major buildings. There is an attractive laptop rental scheme for students, with plenty of cheap and useful software. The University's high-speed Broadband network extends to every bedroom in University-owned halls of residence, giving students **FREE** access to the internet as well as campus and library services.

Accommodation

A place in University accommodation is available for all first-year students who need it. This will mean your own single study-bedroom in a self-catering hall with internet connection. You can download

further information from www.bradford.ac.uk/accommodation

In subsequent years most students choose to live in furnished houses, flats or bedsits in the city. Student accommodation is cheaper, easier to find and more conveniently located in Bradford than in most other university cities. Many students live within five minutes of their lectures! For details of privately rented accommodation contact the Unipol Accommodation Bureau (visit www.unipol.org.uk/bradford).

Facilities

Most departments are on the city campus, as is the sports centre, Students' Union, Theatre, Music Centre and Art Gallery, and student accommodation. The Students' Union runs over 80 clubs and societies, and has a shop on campus, and a print shop. The newly refurbished 'Unique: Fitness & Lifestyle' has a 25-metre swimming pool, climbing wall, and a new gym with the very latest in fitness equipment. You can enjoy café bars around the campus, offering a range of facilities including food, hot and cold drinks, pool tables, video games, and a big screen TV. The University has recently brought the full range of student support services together into one area in the Richmond Building, known as The Hub.

City of Bradford

Friendly and familiar but with a thriving urban centre, Bradford is the city that has it all. The cosmopolitan mix, booming social scene and host of thriving cultural venues create a vibrant modern atmosphere that sits perfectly alongside the imposing architecture of the nineteenth century. Bradford is set amongst some of the most beautiful countryside in England. At the same time it is one of the most affordable places to live. Bradford lies right in the middle of the country, with easy links by road, rail and air north to Scotland, west to Manchester and Liverpool, east to Leeds and York, and south to London.

The University campus is situated in the heart of the city's 'west end' – with many new pubs, clubs and restaurants within a few minutes' walk from the halls of residence. Bradford can also offer a thriving cultural scene, including the National Media Museum, with its huge IMAX screen, as well as galleries, theatres and museums of art, crafts and technology. Further information of all that is on offer in Bradford can be found at www.visitbradford.com, and at www.bradford.ac.uk/bradford

Eating Out

As every student will soon discover Bradford has earned the right to be famous for its curries. There are over 20 curry houses within five minutes' walk of the campus, where you can find a good meal for around £5. There are many other inexpensive restaurants, shops and supermarkets nearby, as well as the excellent value markets, specialist shops and chain stores in the city centre.

Sport

Local sporting clubs are always keen to welcome student members, not forgetting the University's own range of sporting teams and activities. If you enjoy watching rather than participating, there's football at Bradford City and Super League rugby with Bradford Bulls.

Spectacular Surroundings

Bradford is surrounded by some of the most spectacular and picturesque countryside anywhere in the country. The Pennines, Yorkshire Moors, Yorkshire Dales, Lake District and Derbyshire Peak District are all within easy travelling distance.

You can take advantage of the host of outdoor sporting activities available in the area or just enjoy the peace and quiet.



Yorkshire Dales and Alhambra Theatre

