OXFORD BROOKES UNIVERSITY

PROGRAMME SPECIFICATION

for the award of

MEng Mechanical Engineering

Managed by the Faculty of Technology, Design & Environment

delivered by School of School of Engineering, Computing and Mathematics

Date approved:	September 2005
Applies to students commencing study in:	September 2018

RECORD OF UPDATES

Date amended*	Nature of amendment**	Reason for amendment**
February 2018	**Rationalisation of alternative compulsory options**	**Streamlining the programme to be entirely compulsory simplifies the offering and prevents students being in untenable situations in final year as well as matching the offering to the resources available within the department. There is no loss or detriment to the programme LO's and there is greater clarity of the distinctiveness for each Engineering programme.**
February 2018	**Sections 4.1** **Section 4.2**	**changing the status of 2nd, 3rd and 4th year modules to remove options and make the programme compulsory with a distinct Mechanical Engineering theme that is intended to enhance cohort identity and student experience.** **specifying the explicit requirements for named exit awards**

SECTION 1: GENERAL INFORMATION

Awarding body:	Oxford Brookes University
Teaching institution and location:	Oxford Brookes University Wheatley Campus, Wheatley, Oxon OX33 1HX
Language of study:	English
Final award:	MEng MEng sandwich
Programme title:	Mechanical Engineering
Interim exit awards and award titles available:	Under specified conditions a BEng (Hon's) sandwich or full time, BEng sandwich or full time may be awarded, as may a named DipHE in Mechanical Engineering or Engineering, or a CertHE
Brookes course code:	MMH
UCAS code:	H300
JACS code:	H300
HECoS code:	100190 mechanical engineering
Mode of delivery: (Mode of Study given in brackets)	Face to face/on-campus (full-time) Face to face/on-campus (part-time) *Sandwich mode (full-time) *Sandwich mode (part-time) Placement cannot be taken until student has completed second year ie passed eight level 5 compulsory or acceptable modules.
Duration of study:	Full-time degree courses are normally completed within four years of study (five years for sandwich mode). The maximum duration of study is eight years and included any periods of approved and/or unapproved withdrawal.
QAA subject benchmark statement/s which apply to the programme:	Engineering 2010
Professional accreditation attached to the programme:	Institution of Mechanical Engineers (IMechE) www.imeche.org The Institution of Engineering and Technology (IET) http://www.theiet.org http://www.engc.org.uk/
University Regulations:	The programme conforms to the University Regulations for the year of entry as published/archived at: http://www.brookes.ac.uk/regulations/ Specific regulations for all modules on these programmes which have both examination and coursework components have the programme specific requirement that the student score a minimum of 30% in each component of assessment otherwise a technical fail score of 39% will be used to indicate that the student failed to pass all the learning outcomes of the module.

SECTION 2: WHY STUDY THIS PROGRAMME?

This programme is designed to develop the academic, vocational and creative skills of students and prepare them for roles as Chartered Engineers in the discipline of Mechanical Engineering. Students will develop skills that will prepare them for engineering roles where they will be applying, adapting and researching current technologies and processes for planning, managing and developing their companies or employers business preparing it for the present and the future. Looking for new markets, applications and business opportunities.

Staff profiles for members of the core teaching team can be found here:
www.brookes.ac.uk/ecm/about/staff/

2.1 RATIONALE FOR/DISTINCTIVENESS OF THE PROGRAMME

A characteristic feature of this programme is the depth and breadth of design, analysis and management that is fundamental to the study of Mechanical Engineering that will allow students to deepen their knowledge in subject-specific areas, and to take part in multi-disciplinary project-based work. The programme is supported by cutting edge facilities which include a four post rig, damper dynamometer, engine test cell facilities with high speed data acquisition and emissions analysis equipment and industry standard simulation software. The programmes benefit from close links with internationally recognised research groups within the Department, and research is integrated within the delivery of modules ensuring that research skills are fostered within students, and teaching is informed by current research. Students are actively encouraged to undertake the sandwich year award in which they spend a year working in an industrial environment. Working closely with the industrial sector and the relevant professional bodies ensure that this programme is informed by the needs of industry. A distinguishing feature of the course is its broad subject base in years one and two with specialist areas of study to provide depth and niche skills in the third and final year so that it meets the academic requirements for Chartered Engineer status.

The first three years of the MEng and BEng Mechanical Engineering programmes are common, allowing transfer from one course to the other depending on suitable academic progress. The distinction between the two programmes are the subject-specific modules which students take in their final MEng year, tailoring the course to produce graduates with advanced group working skills, management and business acumen and leadership skills. A common thread of fundamental modules in year one also allows for transfer between the Mechanical, Automotive and Motorsport degree programmes, giving excellent flexibility in final career choice.

2.2 AIM/S OF THE PROGRAMME

The principal aim of this programme is to provide an education in Mechanical Engineering producing graduates who have the necessary range of skills and depth of understanding to successfully pursue careers as professional Chartered Engineers. The programme adheres to National Benchmark statements and quality indicators for Chartered Engineer as described in UK-SPEC and adopted by the QAA and the Engineering Council.

SECTION 3: PROGRAMME LEARNING OUTCOMES

On successful completion of the programme, graduates will demonstrate the following Brookes Attributes:

3.1 Academic literacy

3.1.1 Use and apply core mathematical and analytical techniques to facilitate problem formulation and solution of Engineering problems.
3.1.2 Participate creatively in the engineering design process and critically review, evaluate and produce solutions to complex problems at conceptual and detail design stages.
4 of 15
3.1.3 Apply good engineering practice to the critical comparison and selection of manufacturing processes and materials for the production of Engineering components.
3.1.4 Integrate and apply knowledge in the solution of interdisciplinary engineering problems.
3.1.5 Analyse complex practical problems systematically and creatively through the application of scientific and engineering principles to engineering systems.
3.1.6 In the absence of complete data, demonstrate the application of appropriate theory, the ability to make sound judgements and communicate conclusions clearly to specialist and non-specialist audiences.
3.1.7 Apply knowledge in order to analyse data and solve problems in a logical, practical and concise manner.

3.2 Research literacy

3.2.1 Advance their knowledge and understanding as independent learners and to develop new skills to a high level.
3.2.2 Develop professional leadership and research skills in an engineering research environment.
3.2.3 Critically evaluate the research of others and generate new contributions to professional knowledge consistent with being an expert in the field of Engineering.

3.3 Critical self-awareness and personal literacy

3.3.1 The ability to develop and use interpersonal communication, presentation and team working skills along with various other enterprise skills.
3.3.2 Organisational skills at both the personal level and in the areas of project management and the management of human resources.
3.3.3 The ability to communicate effectively using a range of personal presentation skills and techniques.
3.3.4 The ability to self-manage and organise their work including the ability to organise, use and present information in a clear, logical and concise manner.

3.4 Digital and information literacy

3.4.1 The use and management of information technology within an Engineering design environment.
3.4.2 An understanding of a broad range of appropriate information technology skills and their application within a technical or commercial environment. Particularly CAD systems and data transfer between such systems.
3.4.3 The ability to work with and use models that simulate the behaviour of the physical world from which performance can be reliably predicted.
3.4.4 The ability to communicate effectively using traditional graphical techniques, reports, presentations and IT tools.

3.5 Active citizenship

3.5.1 Demonstrate the use and deep knowledge of critical factors in the international engineering business environment such as marketing skills, financial awareness, management and investment appraisal.
3.5.2 Demonstrate knowledge and understanding of the social, legal and environmental aspects and responsibilities of the engineer in society.
3.5.3 Demonstrate an appropriate range of professional engineering skills in order to pursue careers in industry as Professional Engineers operating at a high level of responsibility.

SECTION 4: CURRICULUM CONTENT & STRUCTURE

4.1 PROGRAMME STRUCTURE AND REQUIREMENTS:

YEAR 1

Code	Module Title	Credits	Level	Status	Coursework: Exam ratio
U04500	Mathematics and Modelling I	30	4	Compulsory	30:70
U04501	Introduction to Thermo Fluids	15	4	Compulsory	30:70
U04504	Design and Practice I	30	4	Compulsory	70:30
U04510	Introduction to Materials	15	4	Compulsory	100:0
U04513	Introduction to Stress Analysis	15	4	Compulsory	30:70
U04514	Introduction to Statics and Dynamics	15	4	Compulsory	30:70

YEAR 2

Code	Module Title	Credits	Level	Status	Coursework: Exam ratio
U04521	Thermo-fluids	15	5	Compulsory	30:70
U04524	Design and Practice II	30	5	Compulsory	100:0
U04525	Materials Engineering	15	5	Compulsory	30:70
U04528	Stress Analysis and Dynamics	30	5	Compulsory	30:70
U04530	Engineering Mathematics and Modelling II	15	5	Compulsory	20:80
U04620	Control Technology	15	5	Compulsory	50:50
U04568	Independent Study in Mechanical/Automotive/Motorsport Engineering	15	5	Acceptable	100:0
U04630	Automotive Electronics	15	5	Acceptable	100:0

OPTIONAL SANDWICH YEAR BETWEEN YEARS 2 AND 3 OR YEARS 3 AND 4

Code	Module Title	Credits	Level	Status	Coursework: Exam ratio
U04665	Professional Placement	0	5	Compulsory for Sandwich degrees	100:0

YEAR 3

Code	Module Title	Credits	Level	Status	Coursework: Exam ratio
U04591	Engineering Project	30	6	Compulsory	100:0
U04570	Management, Ethics, Energy and Sustainability	30	6	Compulsory	50:50
U04571	Advanced CAD/CAM	15	6	Compulsory	100:0
U04572	Advanced Dynamics and NVH	15	6	Compulsory	30:70
U04574	Design of Machines	15	6	Compulsory	50:50
U04575	Advanced Stress Analysis	15	6	Compulsory	30:70
U04580	Vehicle Aerodynamics	15	6	Acceptable	100:0

YEAR 4

Code	Module Title	Credits	Level	Status	Coursework: Exam ratio
P04719	Data Acquisition and Computational Modelling	20	7	Compulsory	100:0

P04712	Advanced Engineering Management	20	7	Compulsory	50:50
P04713	Engineering Reliability and Risk Management	20	7	Compulsory	30:70
P04714	Group Design Project	40	7	Compulsory	100:0
P04716	Advanced Mechanical Engineering Design	20	7	Compulsory	100:0

4.2 PROGRESSION AND AWARD REQUIREMENTS

For Interim awards please refer to the BEng Mechanical Engineering MH Programme Specification.

4.3 PROFESSIONAL REQUIREMENTS

This MEng award carries the highest level of professional recognition available to a degree award of its type granted by the Engineering Council. It is accredited to provide the academic standard for “Chartered Engineer”.

Completion of the MEng award as required by the University regulations includes accreditation by both the Institution of Mechanical Engineers (IMechE) and the Institution of Engineering Technology (IET) on behalf of the Engineering Council (EC). This accreditation gives complete exemption from any further academic requirements in relation to Chartered Engineering Status

SECTION 5: TEACHING AND ASSESSMENT

CONTEXT

A fundamental philosophy guiding the design of the course is that teaching and learning takes place among a community of students and lecturers together seeking to pass on the principles, skills and knowledge associated with the profession of engineering. In this vein every effort is made to integrate subject material and show its use, effect and application across the course, following the University's Assessment Compact.

CONTACT TIME AND STUDENT EFFORT

Each undergraduate single module requires 150 hours of effort and postgraduate modules at level seven requires 200 hours of effort. Each module, at all levels, presently involves a minimum of 36 hours contact time, consisting of a mixture of lectures, tutorials, seminars, laboratories etc. (A few modules have more contact than this where the nature of the topic demands it). The remaining 114 hours of effort consists of independent work undertaken by the student with guidance from the module leader. This work may include guided reading, preparation for lectures and practical sessions, reading scientific papers, writing up laboratory reports, learning particular topics and self-testing of understanding prior to assessment. In any given week a student's typical contact time will be 19 hours though this varies throughout the programme and can be as high as 22 hours or as low as 14 hours. Students learning patterns will vary greatly and the hours presented are very much a guide, with different students finding some modules easier than others and the hours employed therefore varying.

The strategy for assessment of the learning outcomes is described in each module syllabus where the balance between analytic, design and creative skills, as well as personal development and professional skills is outlined. The student handbook contains an assessment schedule for the whole programme making it clear to students and staff the hand-in dates across the whole course.
Student engagement with lecturing staff to inform improvements to the course is achieved through such mechanisms as focus group meetings with the programme team, student forums, and end of module evaluation, as well as informal meetings between staff and students during teaching sessions. The assessment strategy is guided by the Brookes Assessment Compact, details of which may be found at: http://www.brookes.ac.uk/aske/documents/BrookesAssessmentCompact09.pdf

Module leaders choose the division between examination and coursework that suits the topic and the module learning outcomes. All assessment is designed to be aligned with module learning outcomes and the combination of learning outcomes and individual modules combines to provide programme learning outcomes which incorporate the graduate attributes for the subject.

Typically, examinations last two hours. Coursework assignments are wide-ranging and invariably challenging, making use of strategies such as:

1. Poster presentations and oral presentations – sometimes videoed
2. Reports, essays and other descriptive explanation
3. Short engineering-based design studies and feasibility studies
4. Problem sheets
5. Class tests
6. Written submissions of laboratory work and practical assessment of laboratory skills
7. Detailed reports of extended laboratory exercises (mini-projects)

The Moodle virtual learning environment is used extensively to provide a wide variety of teaching materials and assessment methods with both formative and summative feedback. The virtual learning environment also provides for widening participation by making learning resources available and peer group support and interaction available outside normal working hours.

COURSE DESIGN

The approach taken to the design of the course features two distinct regions of the learning experience. The first region is the 'synthesis' region, where a series of compulsory double modules that guide the students from first learning how others have solved engineering problems through to being able to synthesise solutions of their own.

The second region is the ‘analysis’ region. This provides learning of the analytical topics that are used as specific tools in the preparation of solutions to the broad-based engineering problems posed in the first, ‘synthesis’ region.

FIRST YEAR EXPERIENCE

In the ‘synthesis’ region, students experience in their first year U04500 and U04504. In U04504 students receive an extensive introduction to existing engineering solutions and methods. They learn how complex components can be manufactured, how complex engineering artefacts such as whole cars and gearboxes have been designed and actually disassemble and reassemble such parts. They also undertake a comprehensive series of laboratory exercises that illustrate important academic points that are being studied in the analytical raft of modules. In this way a good connection is made between classroom theory and practical reality. This important connection is further strengthened by the presence of a manufacturing project in which every student manufactures their own, working Stirling engine as part of the coursework for U04504. This links to academic modules in the analysis region such as U04510, where the materials and manufacturing methods used are studied; U04513 where the loads generated with the engine are determined; U04501 where the output of the engine is calculated and U04514 where the ability of the components within the engine to resist the loads they experience are determined. In U04500 students learn to prepare simple computer simulations of a range of problems, one of these being the Stirling engine. Students also learn to produce CAD renditions of the engine, to costs its manufacture and estimate the profitability that batch manufacture of the engine would generate.

In this way, during the first year, students gain a complete experience of the whole engineering process, from design using computer based modelling, through analysis using theoretical and computer-based simulation, to the estimation of the profitability of production. This learning is based around designs and examples of existing products and processes, and having completed this learning students are ready to move into the second year.

SECOND YEAR EXPERIENCE

Second year students in the ‘synthesis’ modules, U04528 and U04524, learn to generate creative design solutions to new problems that they have not yet encountered. U04524 challenges student to prepare a design solution to a major engineering artefact such as a screw pump. In the preparation of the solution students are expected to consider not just the analytical problems but also those of manufacture, production and commercial performance. Examples of good designs prepared by students are actually made for review using rapid-prototyping machines in the department. In U04528 students experience the two engineering disciplines fundamental to the ‘synthesis’ of the design of solid components. In the remaining four ‘analysis’ modules, U04620, U04530, U04525 and U04521, students learn the analysis needed to support the design work they are preparing at Level 5. These provide experience of control electronics, the preparation of mathematical models using analytical techniques and MATLAB. They develop knowledge and understanding of Thermodynamics and of Materials. All four modules extend the material learned in the first year analysis modules. Students are also introduced to the subject specialism of control engineering.

THIRD YEAR EXPERIENCE

In the third year the diet is again divided into ‘synthesis’ modules and ‘analysis’ modules. ‘Synthesis’ is experienced in the two double modules U04591 and U04570. In U04591, the individual project, students undertake a major engineering investigation into a topic of their choice. This might be involve the Formula Student car where students can be involved with the design and participation in the current year’s competition, or alternatively on design investigation for the future. Students may also undertake research based projects supporting individual members of staff in their research areas. Whatever area is studied the project is a culmination of a student’s studies where they bring knowledge and understanding gained elsewhere in the degree to solve a major topic of interest to them. The second ‘synthesis’ module, U04570, develops the areas of Project Management, Ethics, Energy, Product and Sustainability, teaching students to be able to produce solutions to problems in these areas.

The remaining four modules offer topics to the student in the ‘analysis’ area. These four modules are carefully selected, so that students can give themselves specialism in certain areas. The presence of four mainstream Mechanical Engineering subjects in these groups, means that students cannot avoid

studying sixty credits of core material at Level 6 which are directly related to the course title. This coupled with the thirty credits assigned to the project means that a minimum of three quarters of the Level 6 diet is subject-specific to the named award.

FOURTH YEAR EXPERIENCE

In the fourth year the diet is again divided into 'synthesis' modules and 'analysis' modules but there is an explicit requirement for group work and leadership to be demonstrated. 'Synthesis' is experienced in the double module P04714 and P04716. In P04714, the group project, students undertake a major group project that is set by staff related to research interests, industrial projects or contacts and even KTP's. This might be involve the Design of yacht hull from panels of honeycomb aluminium or Damage detection of 3D prtinted composite parts. A recent project has produced design and moulds for lightweight cycle saddle manufacture showing the completed cycle of product development. Students may also undertake research based projects supporting individual members of staff in their research areas. Whatever area is studied the project is a culmination of a student's studies and a demonstration of their group working abilities and leadership skills where they bring knowledge and understanding gained elsewhere in the degree to solve a major project and working with others. The Advanced Management module P04712 develops the business and operational management areas that include, the leadership, business and management skills that are distinguishing features of the Chartered Engineering role.

The remaining four modules give depth and breadth to the student in both analysis, design and risk management. These modules are carefully selected to provide students with specialisms that give a strong cohort identity and unique skills in Mechanical Engineering. The presence of four mainstream Mechanical Engineering subjects in these groups, means that students cannot avoid studying eighty credits of core material at Level 7 which are directly related to the course title. This coupled with the forty credits assigned to the project means that a minimum of four fifths of the Level 7 diet is subject-specific to the named award.

ACHIEVING THE GRADUATE ATTRIBUTES

Graduate attributes are mapped to learning outcomes in groups of modules as shown in the following tables:

YEAR 1

	U04500	U04501	U04504	U04510	U04513	U04514
Academic Literacy	✓	✓	✓	✓	✓	✓
Research Literacy			✓			
Critical self-awareness and personal literacy	✓	✓		✓	✓	✓
Digital and Information literacy			✓		✓	
Active Citizenship	✓					

YEAR 2

	U04521	U04524	U04525	U04528	U04530	U04620
Academic Literacy	✓	✓	✓	✓	✓	✓
Research Literacy		✓		✓		✓
Critical self-awareness and personal literacy	✓		✓	✓	✓	
Digital and Information literacy				✓		✓
Active Citizenship		✓		✓	✓	

YEAR 3

	U04591	U04570	U04571	U04572	U04574	U04575

Academic Literacy	✓	✓	✓	✓	✓	✓
Research Literacy	✓	✓				
Critical self-awareness and personal literacy			✓	✓	✓	✓
Digital and Information literacy	✓	✓				
Active Citizenship	✓	✓	✓	✓	✓	✓

YEAR 4

	P04712	P04713	P04714	P04716	P04718
Academic Literacy		✓	✓	✓	✓
Research Literacy	✓		✓	✓	
Critical self-awareness and personal literacy	✓		✓	✓	
Digital and Information literacy		✓			✓
Active Citizenship	✓		✓	✓	

ACADEMIC LITERACY

Academic literacy starts with Mathematics, which provides the tools required to study and understand engineering principles in Statics, Dynamics, Thermodynamics and Materials throughout Year 1. These subjects are taught in modules U04514, U04501, U04513 and U04510. In the second year these subjects are further developed through U04528, U04521, and U04525. Students also learn the essential skills for modelling which involve simulation, analysis and modelling tools so that students acquire a sound grasp of the tools used by professional engineers in completing analysis of data, designs and systems. This is accomplished in U04500 and extended in U04530. This is especially relevant for those students going on placement.

In the third year, students further develop their academic literacy through the Engineering Project which involves significant research work and through U04570, Project Management Ethics Energy Production and Sustainability which involves development of knowledge and skills appropriate for professional Engineers. The optional modules all make the same contributions in the Graduate Attribute matrix ensuring that all students develop the required attributes regardless of the modules they chose. All optional module contribute to Academic Literacy.

The fourth year lets students take these analytic skills and apply them in P04713 Engineering Reliability and Risk Management that permeates all aspects of engineering analysis and design as well as applying them the Computational Data Acquisition Systems module. These modules give both depth and breadth to their academic literacy skills.

RESEARCH LITERACY

Research literacy is a constant theme that appears throughout the programme, from U04504 in the first year to more extended pieces of laboratory work and library research in year two in U04524. The final year project, U04591, plays a major role in the provision of research literacy. In this module, students apply skills and research literacies gained in earlier modules to enable them to plan an original piece of work, carry out the necessary research to familiarise themselves with current work and then build on the existing work to make new, original and novel contributions to the subject of study. Students are also expected to be critical consumers of research in module U04570 and U04524
Critical self-awareness and personal literacy
This Graduate Attribute is addressed in a number of modules starting with modules U04504 which combines science, engineering, materials, crafting skills and report writing techniques. The analytical modules also develop this skill and so U04510, U04514, U04501 and U04513 are all relevant. This leads into second year design where group work requires this attribute in order to assess individual and group working skills as well as the ability to present as an individual or as a group. The project module U04591 features critical assessment of one's own work and the work of others while preparing and planning the project.

At level seven research skills for the Group Design Project P04714 require a new perspective in terms of organising research between several students and unifying their efforts to progress a project and this also provides opportunities for leadership skills to be practiced. The Design module P04716 requires advanced design research skills that incorporated principles of TRIZ "inventive problem solving".

DIGITAL INFORMATION LITERACY

Graduates of the programme necessarily have very well developed computer based analytical skills because of the large amount of computer software used in the design and analysis of engineering artefacts. However, the graduate attribute 'Digital information literacy' extends beyond this to include the use of computers for more general skills such as presentations, literature reviews, preparation of design reports etc. Several modules through the programme, such as U04524 and U04570 all provide the opportunity to gain these digital literacy skills.
In the final year Computation and Data Logging Systems give students the chance to develop advanced digital literacy using state of the art data collection systems and algorithms to analyse and interpret the data for high level system refinement.

ACTIVE CITIZENSHIP

This Graduate Attribute relates to how well the graduates of the programme are prepared for work in the international business context. In some considerable measure the learning outcomes for this are met

through the professional accreditation of the programme. The Institution of Mechanical Engineers is recognised world-wide as providing a high quality, regulated framework that ensures new graduates are well rounded and conversant with the influences shaping the current climate for practice. Modules that address these learning outcomes particularly well include U04504, U04524 and U04570.
At level seven students must ensure that they research and present justification for designs and projects that include ethics, sustainability, social awareness and responsibility. These skills are developed through P04712 and P04713.

ACHIEVING UKSPEC

In addition to the requirement that the learning outcomes meet the graduate attributes of the university, they must also meet the requirements of UK-SPEC, as a requirement of the accrediting body, the IMechE. The table below shows the contribution to UK-SPEC made by each module.

SECTION 6: ADMISSION TO THE PROGRAMME

6.1 ENTRY REQUIREMENTS

Prior qualifications necessary for entry to the programme, including English language requirements.

Students entering Year 1 of the courses will normally hold one of the following qualifications:

(i) A level grades (typically a minimum of ABB grades or 128 points) in three subjects, one of which must be Mathematics. In addition, normally Physics (or Engineering Science) is highly desirable, but candidates with alternative subjects will be given consideration.
(ii) A BTEC Certificate or Diploma in an Engineering discipline, typically with at least six distinctions in the final year of study including mathematics;
(iii) An HND course (typically with at least five distinctions including mathematics) with adequate mathematics and Engineering Science content; or
(iv) A qualification equivalent in standard to these qualifications, that is recognised by the University.

In its mission statement the University has highlighted the need to widen access to higher education from those traditionally under-represented among students. The Department's provision to enable this strategy is to allow students who shown significant achievement on one of the undergraduate programmes can transfer into the MEng. Given the common core theme of Engineering Analysis modules it is relatively easy (with a maximum of one additional module required) for students to transfer between Automotive, Motorsport and Mechanical Engineering programmes up to the end of their 2nd year with no need to extend their programme of study.

ADMISSION WITH CREDIT (ACCREDITATION OF PRIOR LEARNING)

Applicants with relevant prior learning are welcome to apply and start the course with exemption from specific modules or the whole of Stage I. Specific examples include:

(i) Students with a very good HND in an Engineering subject are usually exempted all of Stage I and are admitted directly to Stage II. Normally these students will have achieved at least six distinctions over their second year units, with all other second year units being at Merit level.
(ii) Students who have completed parts of degree courses elsewhere will be given credit appropriate to the amount of study successfully completed. Such students will normally be expected to have achieved consistent marks/grades within the 2:1 band at their previous Higher Education Institution.

In certain exceptional cases it may be possible to give credit for Level 5 modules as well as for Level 4 but it will not normally be possible to gain credit for Honours modules at level 6 as an accredited BEng requires the student to have completed the final two years full time education sequentially on the same programme at the same institution.

ENGLISH LANGUAGE REQUIREMENTS

For details of the University's English Language requirements see:
http://www.brookes.ac.uk/international/apply/english/

6.2 DBS AND OTHER PRE-COURSE CHECKS REQUIRED

Not applicable.

SECTION 7: PREPARATION FOR EMPLOYMENT

In the second year there are a series of lectures to prepare students who are registered for the sandwich placement. They receive lectures and support in preparing CVs, researching companies to apply to, preparing for interviews and how to make the most of their placement year. The industrial placement training is complemented by an "invited prestige lecture series" from selected employers.

In final year there are similar preparatory lectures and help sessions and specifically a "Life after Brookes" session to inform students about the continued support and resources available to them as alumni and for the immediate future of their careers. This is in addition to the University's career service which provides excellent support and guidance to graduating students and alumni.

Throughout their study at Brookes, students are advised of and encouraged to attend professional lectures of engineering interest given by the Institution of Mechanical Engineers, the Institution of Engineering Technology and the Institution of Materials with which the School has significant participation and involvement.

GRADUATE EMPLOYABILITY

Students graduating from this course are able to follow an extensive range of career opportunities in Mechanical Engineering industries. Examples of successful employment are:

- Strategic Simulation and Analysis Graduate Engineer
- Siemens Magnet Technology Trainee Engineer
- Shape Machining Witney Design Engineer
- Babcock International Graduate Engineer

LINKS WITH EMPLOYERS

The department has strong industrial links with local employers through consultancy and research work as well as a strong record of providing industrial placement students. Key features are:

- Recall Conference for sandwich placement students including industrial keynote speakers.
- Industrial Placement provision with local employers e.g. BMW placements for Brookes.
- IMechE and IET professional lecture events and visits.
- Sponsorship for Formula Student Team from local companies with materials and parts e.g. SECO Tools supply specialist tooling for manufacture.
- Hosting professional events such as the "Speak Out for Engineering" competition run by the IMechE and "Getting Chartered".
- Staff representation on the IMechE Oxford Area Committee provides a conduit to practicing Chartered Engineers and companies.
- The Department's Industrial Advisory Board that consults with and advises on current engineering needs of employers, research projects and professional standards.