IMPORTANT

While every effort has been made to ensure content is correct at time of publication, students should remain mindful that subsequent changes may occur due to the current global pandemic. Students are expected to regularly check communications/notifications for new information, in addition to the dedicated webpages which are frequently updated with new University and Government information:

https://www.strath.ac.uk/coronavirus/students/
https://www.strath.ac.uk/studywithus/campuslife2021-22/

The aim of this Handbook is to answer the many questions you may have about the different aspects of studying for a degree at the University of Strathclyde. The Handbook contains practical information about the University, the Department and your programme of study - including course regulations and departmental procedures. It is an important reference document which will help you to ensure that your time here is organised efficiently and to maximum benefit.

The University of Strathclyde was formed from the Royal College of Science and Technology and the Scottish College of Commerce, and received its Royal Charter in 1964, both former institutions having had long traditions of involvement in higher education. In the case of the Royal College this dates back as far as 1796. Since receiving its Charter, the University has thrived on the John Anderson Campus in the city centre, with four faculties having developed - the Faculties of Engineering, Humanities & Social Sciences, Science and the Strathclyde Business School.

The contents of this Handbook are, as far as possible, up-to-date and accurate at the date of publication but may be subject to revision. Information provides a brief guide to some essential procedures to assist you during your studies.

Changes and restrictions are made from time to time and the University reserves the right to add to, amend, or withdraw courses and facilities, to restrict student numbers and to make any other alterations as it may deem desirable and necessary. Changes are published by incorporation in the University Regulations.

It is the responsibility of each individual student to become familiar with University Regulations which apply to them, and in particular with any changes made in later years of attendance:
https://www.strath.ac.uk/studywithus/academicregulations/

Note: *"In the unlikely event of any conflict between the Regulations and other University publications including Course Handbooks, Regulations take precedence."*

CONTENTS

Session 2021/22 - Dates to Note

Up-to-date University 'Key Dates' are available at https://www.strath.ac.uk/keydates/

Semester 1: 13 September 2021 - 09 January 2022

Semester 2: 10 January 2022 - 22 May 2022

Please note that the University is **closed** on the following dates:

27 September 2021

24 December 2021 - 04 January 2022 (inclusive)

15 April and 18 April 2022

02 May 2022

02 and 03 June 2022

15 and 18 July 2022

Academic Weeks (date commencing) and equivalent Timetabling System Weeks are at:

University Academic Week's Calendar 2021-22

NOTE: during the sem2 exam diet period, Honours exams are often scheduled to take place early in the diet (although students must remain available for the duration of all formal examination diets).

Section 1
The Department of Mechanical & Aerospace Engineering

Welcome

From the Head of Department

It is my very great pleasure to extend a warm welcome to all new students joining the Department of Mechanical and Aerospace Engineering (MAE).

Engineering is a fascinating, stimulating and rewarding career. Engineers are always in demand and in a very wide range of settings. Your engineering education will stand you in the best possible stead and open doors in all sorts of organisations or indeed equip you to start one of your own. Modern life has been shaped by engineers and they are always at the forefront when new challenges emerge. I think the 21st century will be replete with challenges as fierce as any society has ever faced and that engineers, as usual, will be in the vanguard. In short, I think it's a great time to be an engineer and to study engineering.

For those of you who are new to the subject and to studying at university, you will find the learning environment rather different to that at school or college. Indeed, adapting to studying in a university setting can, at the start, be almost as challenging as the technical content of the programme of study itself. I urge all students to think carefully about how you manage your time and to try and develop effective study methods. If you do and if you approach your studies with diligence, commitment and intelligence, you will build an excellent platform for success both in your studies at Strathclyde and in the fulfilling career that follows. Furthermore, with good time management and study technique, there should be ample time for you to enjoy everything that life at university has to offer and I encourage you to do just that!

This Handbook will provide you with guidance on the operation of the MAE Department and is designed to assist you throughout the duration of your studies and to let you know how and where to seek help should you need it. It gives contact information for people in the Department, plus details the requirements and regulations for the Department's degree programmes. Your academic Year Adviser of Studies can help clarify regulations and academic requirements, and your Personal Development Adviser can help deal with any other problems you may encounter. You can also get help and advice on specific classes from individual module Registrars and lecturers. Please let your Student Representatives know about any persistent issues, and they will convey these to us through regular meetings of the Staff/Student Liaison Committee.

I hope you find the coming academic year challenging, enjoyable and rewarding and we look forward to getting to know you and to working with you.

Prof Alexander M Galloway, CEng FIMechE

People in the Department

PLEASE REFER TO THE UNIVERSITY DIRECTORY (http://but.mis.strath.ac.uk/Teldir/control/search)
or MAE STAFF SEARCH WEBPAGE LINK
(http://www.strath.ac.uk/staff/?department=Mechanical%20and%20Aerospace%20Engineering)
FOR ALL DEPARTMENT STAFF NAMES AND CONTACT DETAILS.

Departmental academic staff can be found on Level 8 of the James Weir Building.
(please report to **MAE Reception room JW804** on arrival prior to meeting staff)
Note: as a result of the pandemic, many staff are working from home so please initially contact via email

Head of Department: Prof Alexander Galloway

Deputy Head: Prof Donald Mackenzie

Director of Education: Professor Bradley Wynne

Director of Studies (UG) / PDS Coordinator: Dr Emma Henderson

Departmental Safety Convener: Dr Fiona Sillars

UG Administrator: Mrs Donna Fairley

See next page for academic UG Year Adviser information.

Student Support Services

There are numerous support services within the University and these are detailed on the University's 'Strathlife' student page at http://www.strath.ac.uk/studywithus/strathlife/.

Information and various Student Business forms are also available on the Student Experience and Enhancement Services website at: https://www.strath.ac.uk/professionalservices/sees/ (via the main 'Student Lifecycle' section).

In this section of our UG Student Handbook, we explain where you can find support within the Department of MAE.

Academic Year Advisers

There is an academic Adviser of Studies for each year of your programme, in addition to the UG Director of Studies. The aim of the Adviser is to counsel you on aspects of your current year (in particular for academic queries/issues) and to assist you in choosing optional subjects to study.

Year 1 Adviser of Studies	Dr Jinglang Feng	mae-y1-adviser@strath.ac.uk
Year 2 Adviser of Studies	Dr Stephen Connolly	mae-y2-adviser@strath.ac.uk
Year 3 Adviser of Studies	Dr Christie Maddock	mae-y3-adviser@strath.ac.uk
Year 4 Adviser of Studies	Dr Edmondo Minisci	mae-y4-adviser@strath.ac.uk
Year 5 Adviser of Studies	Dr Athanasios Toumpis	mae-y5-adviser@strath.ac.uk
UG Director of Studies	Dr Emma Henderson	

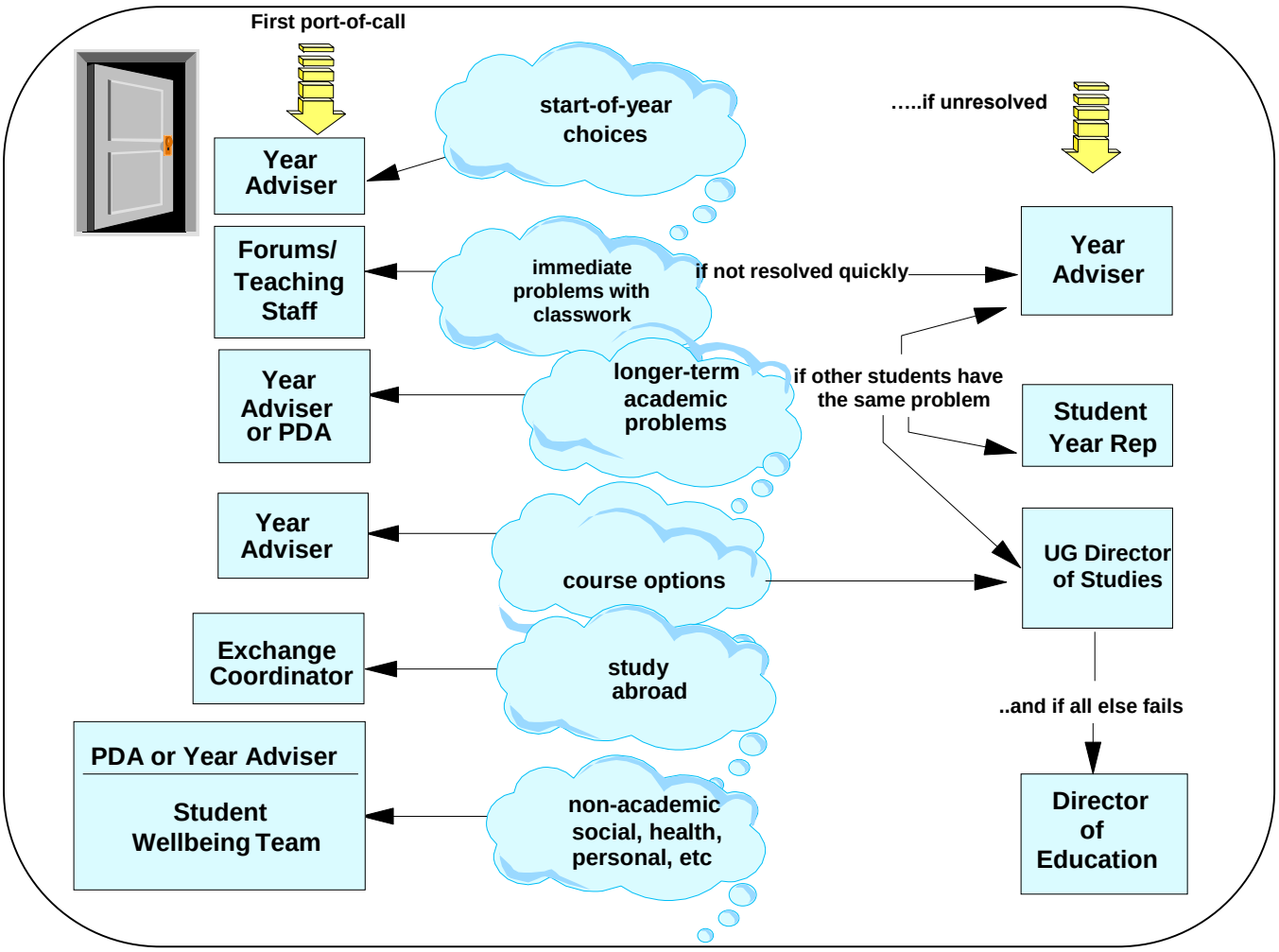
The above is subject to change; refer to your Pegasus record for up-to-date details.

Staff-Student Liaison Committee (SSLC)

A Staff-Student Liaison Committee, which normally meets twice per semester, provides a forum where academic problems may be raised by student representatives. Students are encouraged to consider the benefits of becoming a Student Rep, further information on which can be found at https://www.strath.ac.uk/professionalservices/sees/studentpolicies/policies/studentengagement/studentrepresentation/ and from the USSA at https://www.strathunion.com/voice/studentreps/.

Departmental Student Reps are encouraged to run the SSLC, which normally comprises two reps from each year, the UG Director of Studies, Year Advisers and senior members of staff or others as appropriate. When selected, the names of reps will be notified to all students. If there is an issue which is important to a large number of students which you believe should be discussed by this Committee, you should inform the Student Rep for your year so that it can be placed on the agenda for the next meeting. However, before the issue is brought to the meeting, it is IMPORTANT that it has first gone through the proper 'Problems' channels which follow. Only once there has been no satisfactory resolution of a problem should it be brought before the SSLC.

Problems? – Where to go



Personal Development Planning / Personal Tutorials

A student Personal Development scheme exists, the objectives of which are to create an environment where students are able to discuss freely and in confidence any personal matters. Staff provide advice either personally or, if the student is agreeable, through other specialist staff. Few students encounter substantial difficulties, but for those who do it is hoped this scheme will ensure academic welfare and encourage satisfactory progress with your studies.

The success of the scheme depends on the participation of both staff and students. Students are encouraged to see their PDA at least once every semester, even if only to confirm that all is well. Year 1 students must meet their PDA on pre-arranged tutorial slots during the teaching semester.

Disability

If you have, or think you have, a disability you should disclose it as soon as possible to enable you to access any additional support that you may need. Information provided is treated as confidential and will not be shared with other staff without your consent. The University has a dedicated Disability and Wellbeing Team offering advice and assistance (refer to the 'Strathlife' webpage for details). If you believe you qualify for special assessment arrangements, you must visit the team without delay. **Requirements must be prepared several weeks prior to exams starting.**

Prof Cartmell (matthew.cartmell@strath.ac.uk) is the MAE Departmental Disability Coordinator.

Further details and additional contacts can be obtained from the Disability & Wellbeing Service webpages at https://www.strath.ac.uk/professionalservices/disabilityandwellbeing/.

Educational Policy

Programme Aims and the Learning Experience

Your aim in choosing your degree course is undoubtedly to graduate and qualify as a competent professional engineer. Our aim is to assist you in the best ways we can to achieve that goal. There are various elements of knowledge, skills, experience and understanding which are to be found in competent engineers and your course will give you the opportunity to acquire and develop these. By the end of your course, we expect that you will:

- have a good working knowledge of the fundamentals of systems and processes which are generally recognised to be in the domain of mechanical engineering and its related subjects;
- be able to understand, model and predict the behaviour of engineering artefacts through the application of scientific and technological principles;
- have had a great deal of practice in creating new solutions, adapting old ones, and in using your acquired knowledge in materials, energy systems, manufacture and computer-aided design techniques.

We also expect you to develop many new capabilities which are not simply concerned with engineering technology; in fact we will be disappointed if your outlook does not change radically during your course. In particular, we expect that you will:

- continue to develop the capacity you already have to learn about many things - a good engineer can do anything;
- increase your skills in communicating and working effectively with others - engineers work in teams and lead teams;
- develop your career towards becoming a professional engineer – we expect that you will transition towards this path in the senior years of the programme and tune your approach to study accordingly;
- grow to understand your place as an engineer in a complex and fascinating professional community - the world is your oyster.

Student Charter

Departmental staff aim to:

- be responsible and responsive in all matters related to students
- respect individual students as partners in the learning process
- maximise learning opportunities
- minimise bureaucracy and ensure the transparency of procedures
- maintain a friendly and caring environment
- operate an efficient information system
- identify clearly the responsibilities of staff and students
- facilitate innovative developments where appropriate
- ensure equality of opportunity for all

Assessment and Feedback

The Department fully subscribes to the approach to Assessment and Feedback outlined by the University at http://www.strath.ac.uk/learnteach/informationforstudents/students/assessfeedback/ and elucidated in the 'Assessment and Feedback Cycle'. The document 'Making the most of your Assessment and Feedback at Strathclyde' is also available from this webpage. The current Assessment and Feedback Policy is also available to students at https://www.strath.ac.uk/sees/studentpolicies/policies/assessmentfeedbackandexternalexaminers/assessmentandfeedbackpolicy/.

Accordingly, assessment and feedback methods used by each class are explicitly stated in the associated Module Descriptor Form (MDF). Up-to-date MDFs can be found on our MAE webpages at http://www.strath.ac.uk/engineering/mechanicalaerospaceengineering/student-information/.

The Department also recognises that, in addition to constituting a formal response to assessment, feedback also incorporates informal communication between staff and students (either individually or collectively) that provides information on progress and performance. This implies a more bilateral process in which students are encouraged to seek feedback by actively engaging with staff as appropriate.

Engineering Profession

All programmes in the Department are designed to lead to Chartered Engineer (CEng) status, in that they are accredited by one or more of the professional institutions in the Council of Engineering Institutions. It is your responsibility to exploit this benefit, although staff here will be pleased to help you with advice, form-filling and so on.

The paths to CEng registration are given in an Engineering Council publication – UK SPEC - which defines the initial education required and the subsequent stages of education, training and experience needed to achieve full membership. For those students who entered a programme in 2000 or later, the MEng streams provide the only direct route to Chartered Engineer status, without further academic study. BEng (Hons) fulfil the CEng requirements in part, but graduates of these programmes will require, under current Engineering Council rules, to complete a so-called 'Matching Section' of further study - equivalent to one year of full-time study, approximately.

In any event, you are strongly recommended to begin your own developing association with the professional body you choose by joining up now. It costs little (Student Membership is sometimes free for students on accredited courses). You will keep abreast of changes in UK SPEC and your time as a student will be credited to you when you eventually apply for full membership.

Useful Administrative and Other Information

MAE Department Reception / Central Services

General enquiries should be directed in the first instance to mae-ug@strath.ac.uk. If necessary, students can visit Central Services, on Level 8 of the James Weir Building (room JW804). Reception opening hours for students, **which are subject to change**, are:

Monday – Friday: 1000hrs to 1600hrs

Class lecturers should indicate submission dates for coursework. Where possible, coursework will be submitted electronically but, if otherwise instructed, can sometimes be submitted via Central Services Reception during opening hours. Lecturers for each class will provide students with a front cover sheet for submitting coursework, which must be downloaded by students from Myplace (see below for further system information). Coursework cannot be handed in without a front cover sheet.

Marked paper coursework submissions can be picked up from student boxes located outside JW804.

Access to Buildings (not fully open during COVID-19 pandemic)

If you wish to access University premises out-with normal hours (generally 0800–1800) it is important that you read Appendix 2 of this Handbook. All students must complete the appropriate form.

For access to computer rooms it will be necessary for you to have a 'Red Card' signed by a member of admin support staff in MAE Central Services Reception. Thereafter the card must be taken for counter-signature to the Information Technology Services (ITS) Helpdesk based in the University Library. Cards issued by the Department only provide access to certain locations.

The Department can normally provide a card if requested during MAE Reception opening hours, however certain staffing situations may prevent this. Therefore, you must plan ahead and not wait until late to ask for a card (such as on a Friday afternoon).

For information and general details on access to buildings (including specific hours of opening), the University Estates webpage https://www.strath.ac.uk/professionalservices/estates/security/access/ should be referred to. All queries must be directed to the Security Services team – see https://www.strath.ac.uk/professionalservices/estates/security/ (building codes are listed at https://www.strath.ac.uk/professionalservices/estates/roombooking/buildingcodes/).

If you experience an issue with physical access anywhere on campus, please email: physicalaccess@strath.ac.uk where a member of Estates staff will be able to assist.

Change of Address / Personal Details

Students are required to notify the University of any change in permanent home or term-time addresses. Letters are sometimes posted to students therefore it is vital that your current addresses are on file and up-to-date. All relevant details must be updated via Pegasus – see https://www.strath.ac.uk/professionalservices/studentlifecycle/personaldetails/.

Email Accounts

You **must** check your '@uni.strath' email account on a regular basis to ensure that you do not miss announcements or updates. Emails should also be cleared regularly as communications cannot be received when your account has reached capacity.

Failure to read emails could impact on your studies if you miss an important message (online forums are not the sole means used by the University for issuing communications)**.**

Graduation

Award Ceremonies (Congregations) are normally held in June/July and October/November. All students hoping to graduate or be presented must complete enrollment well in advance and pay the relevant fee. Details of ceremonies and enrolment forms are usually available from Student Experience in March each year - see http://www.strath.ac.uk/studywithus/graduation/.

Enrolment for graduation and fee payment does not constitute an explicit intention to exit a programme early. **The Department, via your Adviser of Studies, must also be informed**.

Jury Duty Exemption

Where required, a Jury Duty excusal letter can be requested by email to mae-ug@strath.ac.uk. The Court Citation Number and relevant Personal ID Number (as stated on the documentation received from the court) should also be provided.

MAESA

MAESA is the Mechanical & Aerospace Engineering Students Association. Run by students for students undertaking our courses, it is comprised of undergraduates across all 5 years. If looking for a way to be part of the MAE community outside of your studies, then get involved with the committee as a volunteer. Being part of MAESA allows students to build on existing skills, develop new ones, gain experiences and meet new people.

As a student group, MAESA rely on your involvement in events. If unable to be involved directly, you can still support the group - suggestions or new ideas can be sent to maesa-society@strath.ac.uk.

Myplace

The University's virtual learning environment (VLE) is called Myplace (http://classes.myplace.strath.ac.uk). All modules for which you are officially registered will automatically appear on Myplace. MAE students will also see dedicated year pages, which include a forum for general queries.

Login using your Strathclyde student DS username and password. Details can be found at https://www.strath.ac.uk/studywithus/strathlife/whatitslikestudyingatuniversity/myplace/. You will find hints and tips as well as support via the link to the 'Student Support Section' (including how to submit an assignment electronically and an explanation of Turnitin).

Myplace delivers online resources and activities designed to enhance learning. The pages may include assessments, online discussion, learning materials (e.g. lecture slides) and class news.

During the blended learning period and transition back on campus, Myplace will be the main source of communication between students and staff regarding their modules.

References

Frequently companies will ask for referees who can comment on your academic progress as well as your general conduct. You should ask your Personal Development Adviser (PDA) or Project Supervisor (for Y4 / Y5, where applicable) in the first instance. Note: it is department practice to provide the reference directly to the employer and not to the student.

Under the General Data Protection Regulation (GDPR), staff are not permitted to provide references without student consent. Reference requests will therefore be declined where students have not contacted and agreed this with the relevant member of staff prior to the request being received.

Sponsorship

Student sponsorship is reasonably common within the Faculty of Engineering (https://www.strath.ac.uk/engineering/). The advantage is that a company may supplement a student's income and offer employment during the summer vacation. There may also be the possibility of graduate employment on completion of studies. Students in 1st, 2nd or 3rd year may

find it worthwhile to spend some time identifying companies willing to offer sponsorship. Look out for those that operate a sponsorship scheme – check the notices in the Careers Library or newspapers. If unsure whether a particular company operates a sponsorship scheme, write to their Human Resources Manager requesting information.

Student Complaints

Please refer to the below University website for the official complaints procedure (note – student issues should always be directed to your Year Adviser or UG Director of Studies in the first instance).

https://www.strath.ac.uk/contactus/complaintsprocedure/

Student Experience/Business

Student Business is based on Level 1 of the McCance Building and normal hours of opening are:

Monday-Friday: 1000 to 1600 hours

Out-with these times, much of the information/forms you may require should be available on the Student Experience webpages at https://www.strath.ac.uk/professionalservices/sees/. For contact details, see https://www.strath.ac.uk/professionalservices/studentlifecycle/contactus/.

Potential changes to curriculum modules or programmes must be notified to Student Business **by your department**. Please contact your academic Year Adviser.

Student Visas

Students granted a Student Visa have the responsibility to abide by its conditions. Engaging with your studies prevents any problems and protects your visa status. Students who hold a visa who are absent or need to briefly leave the Glasgow area at any time during their studies, must first request permission from the Department before making any arrangements.

UK Immigration Rules are very strict and the consequences of not adhering to these can include suspension from your studies and/or being reported to the Home Office. **All visa enquiries must be directed to the International Student Support Team** – information available at https://www.strath.ac.uk/studywithus/internationalstudents/whileyourehere/internationalstudentsupportteam/.

Use of Computing Facilities and Resources

The University will not permit the use of its computer facilities and resources for access to, or transmission of, information which is considered by the University to be unacceptable; illegal; in breach of university policies, such as those on Equal Opportunities and Harassment; wasteful of resources or not commensurate with the provision of facilities for legitimate educational purposes.

Examples of such unacceptable use may include:

accessing/displaying pornographic material; stating defamatory opinions/views concerning individuals or organisations; accessing/displaying discriminatory material or material which encourages discrimination; engaging in games or chain E-mail; publishing information which is intended to misinform and thereby causes anxiety or inconvenience to another; unauthorised use of University logos, titles etc; spamming; corrupting or destroying another user's data; violating the privacy of other users; disrupting the work of others; using JANET (Joint Academic NETwork) in a way that denies service to others; misuse of networked resources such as the introduction of viruses.

The University actively monitors usage of the University computer facilities and resources which includes monitoring the access to, publication or receipt of, any Internet materials by any user.

Further IT details can be found via Information Services at https://www.strath.ac.uk/is/.

Copyright

Under UK Copyright laws, original works such as; books, journal articles, images, music or films are protected by copyright. This means that they cannot be reproduced (copied), on paper or electronically, unless: covered by a licence, permitted by statutory exceptions or legal defences or where permission is given by the copyright holder. Remember that materials found on the Internet are equally protected by copyright even if there is no fee or password required to access them.

The University has a range of licences in place which permit students to make copies of extracts, for example one chapter or one article, from copyright works for the purpose of their studies and in other cases the law will often provide a defence. If you are unsure whether you can copy material, always check if there are Terms & Conditions or similar and follow them. With web based materials, if in doubt, provide a link (URL) rather than copying the material. Never link to sites that you know contain 'pirated', infringing (or otherwise illegal) material. Further guidance is available (see link below).

It is important that students observe the terms and limits of licences and exceptions. Failure to do so may make you personally liable for copyright infringement, as well as cause; loss of access to materials such as eBooks, eJournals or databases, by your fellow students and the whole University. Dealing with copyright material inappropriately can be a disciplinary offence and a breach of University regulations.

It is important when copying other people's work, in print or on the internet, to do this fairly. This means that whilst copying for your research or your assignments is generally permissible, republishing copies on social media or the public web is likely to cause problems. You should only copy as much as you need for your work and should not reuse other people's work in a commercial context without checking if you need permission. Finally, always acknowledge your use of other people's work and cite them accordingly. This will help you stay legal as well as avoiding plagiarism.

The good news is that normally, you own copyright in material you produce such as a dissertation or project report and this too is protected by copyright.

If you have any questions or concerns, please visit the Information Governance and Compliance webpage https://www.strath.ac.uk/professionalservices/is/compliance/.

General Information - summary

Policies and Procedures for students are published on the Student Experience and Enhancement Services (SEES) website: http://www.strath.ac.uk/sees/studentpolicies/. These include:

- Personal Circumstances
- Absence and Voluntary Suspension
- Extensions to Coursework Submission
- Late Submission of Coursework
- Academic Appeals
- Student Discipline
- Academic Dishonesty
- Assessment and Feedback
- Compensation Scheme and Progress
- Honours Classification & Other Awards Rankings
- Motivation Merit & Distinction
- Careers, Education, Information, Advice & Guidance
- Dignity & Respect (inc Equality & Diversity)
- Charging for Course Material
- Internal Review of Learning & Teaching
- Role, Selection & Briefing of Student Members of Review Teams
- Research: Code of Practice on Investigations Involving Human Beings
- Student Representation

Class Details: Modules and Timetables

Module Description Forms (MDFs) for all MAE classes can be found on the departmental Student webpage at http://www.strath.ac.uk/engineering/mechanicalaerospaceengineering/student-information/. These contain the most up-to-date information on all class assessments/syllabuses. NB: general class enquiries should be directed to Registrars. Past exams papers can be found using the University's Library.

Timetables can be found via the University Timetabling page http://www.strath.ac.uk/timetables. Information on personalised student timetables can also be found on this page.

Note: for academic year 2021-22, as we transition back to campus, students should also refer to timetable information for each module on Myplace to identify specific allocated slots and rooms (where applicable). Personalised timetables cannot fully reflect all of this information.

Attendance / Absence and Personal Circumstances (key points to note)

All students are expected to be in attendance for activities during all Terms (as outlined on the University's Key Dates webpages). This includes Welcome & Development Week, Consolidation & Development Week and also all formal examination periods/diets.

The following procedures and regulations relating to absence through illness should be noted:-

- Students must sit all assessments/examinations unless prevented by illness, in which case a medical certificate must be produced as documentary evidence. Personal Circumstances must be notified to Student Business **within five working days** of the latest affected examination or date of submission of affected assessment. Self-certification is not sufficient.
- Failure to attend due to being "unaware of the dates or times or submission deadlines" of examinations and missing an examination due to "misreading the timetable or oversleeping" are not valid reasons for non-attendance. An 'Absent' will be recorded in such situations (refer to the Personal Circumstances policy).
- Students whose performance has been, or will be, affected by circumstances that are severe and outside their control should **inform the University as soon as they are aware of these circumstances** by recording them on Pegasus under 'Personal Circumstances' (clearly state the extent, duration and nature plus how they are affecting performance) and by also **submitting supporting documentary evidence to Student Business**. In addition, students should provide details on adverse circumstances to their Year Adviser of Studies.

CIRCUMSTANCES THAT WILL *NOT* BE CONSIDERED

Personal Circumstances Boards (PCBs) will disregard circumstances which a student could reasonably have avoided, where measures should have been taken to reduce their impact or where circumstances are no different from those facing a significant number of other students (which you are expected to cope with as part of a properly managed workload). Computer problems, failure of a single data source or lack of back-up are not valid mitigating circumstances or grounds for appeal.

If a student does not submit Personal Circumstances via Pegasus, they will not be listed for consideration by the PCB or subsequent Exam Board. A notification of circumstances may not be accepted after the PCB has met.

Poor attendance makes the course more difficult and is often associated with poor performance. If students must miss a class for good reason (medical, domestic, etc), their Year Adviser must be informed in writing.

Examination Boards (key points to note)

There are two types of Examination Board: the 'Honours' Board and the General Board.

The Honours Board of Examiners meets at the end of each academic session to review the performance of all year 4 and 5 students. A decision is made at the Board on the class of degree to be awarded to each graduating student or progress decision for y4 MEng students. Following the Board meeting, results are made available to individual students via PEGASUS.

The MEng degree may be awarded 'with Distinction' or 'with Merit'.

Students can graduate from the BEng degree with one of five classifications:

- First Class Honours
- Second Class Honours (Upper Division)
- Second Class Honours (Lower Division)
- Third Class Honours
- Pass

The General Board of Examiners considers the performance of all students other than those in year 4 and 5. The General Board meets at the end of the academic session (after the Honours Board) and again after the resit diet, to analyse students' performance in all degree examinations. The General Board makes one of the following decisions:

Pass - clear passes with no re-sits; should proceed to the next year of study.

Withdraw - student will be instructed to withdraw from the course.

Re-sit (June Board only) - student must undertake re-sit assessments normally by August, after which a decision will be made on possible progress to the next year of study.

Overseas Semester(s) (June Board only) - student has taken part in overseas exchange and some marks are not yet available.

May Proceed (September Board only) **-** may proceed to the next year of the course, but must take further re-sits in certain failed classes.

Do Not Proceed (September Board only) - student has not satisfied the requirements for progress to the next year of the course and will be required to enter academic suspension. A student may take re-sit assessments in the coming academic session.

Re-attend - student has not satisfied the requirements for progress to the next year of their course. Students are required to re-attend the current year (for which the standard tuition fee will be charged) before a further decision will be made by the Board regarding progress.

Transfer - student will be transferred to another course. This can be qualified by a decision of **Transfer and Suspend** or **Transfer and Resit**.

In addition to making one of the aforementioned decisions, the Board may also decide to either:

i **caution** a student whose performance has been poor. The student is informed that their poor performance gives cause for concern and they must consult with their Year Adviser of Studies.

or

ii **warn** a student that they have almost exhausted their attempts at a class and will have only one further opportunity to obtain a pass.

A student may be transferred from the MEng to BEng Hons stream or from the BEng Hons to BEng Pass stream if not performing at a high enough level.

Unusual circumstances can dictate that a student receive a 'Special Letter/Notification', outlining his/her academic position as determined by the Board of Examiners.

Students who do not pass all compulsory classes after exhausting their maximum attempts must be withdrawn, though some may be eligible to transfer to the BEng Engineering Studies pass degree.

Faculty Compensation Scheme

The Faculty operates a Compensation Scheme which is designed to assist Boards of Examiners to take decisions about student progress at the end of each of the first, second and third years of undergraduate study and the first four years of an integrated Masters degree. Fail marks in the range 30-39% may be eligible for compensation under the scheme and converted to a pass provided the weighted credit average across the students prescribed curriculum is 45% or higher. Up to 20 credits throughout all years of the programme may be compensated in this way. The scheme can be applied only to the student's first attempts and, therefore, is normally used only at the June meetings of the Boards of Examiners when the results from the semester 1 and semester 2 degree examinations are considered.

Study Abroad

The Department encourages all suitably qualified students to consider the benefits which foreign study brings to the learning experience. Students who wish to participate in exchange are ambassadors for the Department and the University, and should note that it is IMPERATIVE that prior permission, in principle, to pursue study overseas is obtained from both the Year Adviser for the year when they will be overseas (usually the Year 3 Adviser) and the Department's Outgoing Exchange Coordinator, Dr Andrew McLaren.

Normally this will be covered by their signature on the Learning Agreement which has to be completed by all students wishing to study overseas. Only once results are known will this permission be ratified as explained at (c) below.

Those students enrolled on courses which require foreign study as part of the requirements for the award of their degree, should be aware that such study can only proceed where the student has reached an appropriate standard and has a reasonable expectation of benefiting from the experience; if this poses a difficulty it is possible to change to another, related course where foreign study is not obligatory.

For those participating in an exchange programme, attention is drawn especially to the following:

(a) FEES: Do not forget to apply for your fees for the subsequent academic year.

(b) While the Department encourages students to participate in overseas exchange studies in their third year (and additionally in fifth year), it is important in the case of second year students that, prior to embarking on an exchange programme, the following objective must be met:

- all first and second year classes have been passed

This is especially important in the case of non-European exchange studies, not simply from an academic point of view, but also from a practical viewpoint. The large time difference involved in international exchanges makes it difficult (and in most cases impossible) for students to take a resit examination overseas.

While agreement to participate in an exchange programme may be given in principle before the end of the academic year, it is imperative that the student concerned has this agreement ratified **in writing** by Dr McLaren, as soon as their examination results are known. **Without this ratification no student from the Department of Mechanical & Aerospace Engineering will be considered to have the necessary permission to embark on an exchange programme.**

ERASMUS+

What is it?

ERASMUS is the name given to the **E**u**R**opean Community **A**ction **S**cheme for the **M**obility of St**U**dent**S.** It forms a major part of the efforts of the European Union to ensure that graduates within its member countries should be able to function on a Union-wide basis within the single European market.

What is Strathclyde's involvement in it?

The University (and in particular the Department of Mechanical & Aerospace Engineering) has entered into the scheme in a comprehensive way because it believes firmly in its overall aims.

What does the scheme involve?

The scheme provides a wonderful opportunity for students to spend part of their degree course at a university in another country within the European Union. This study elsewhere counts as a normal part of the degree curriculum. The various schemes have therefore been designed to ensure complementarity with studies which the student would otherwise have taken if they had remained at Strathclyde. Where language permits, students can attend lectures in their European university. Alternatively, for those with less well-developed language skills, project work may be undertaken in the host University in collaboration with a supervisor who speaks English.

Credits are awarded for overseas study just as they would be at Strathclyde and are normally awarded at the September Examination Board once transcripts have been received from the partner institution. Since performance in earlier years of the course contributes to the class of Honours, for this purpose, each student will be awarded an overall mark for their period of foreign study which will be agreed between the ERASMUS Coordinator and the Adviser of Studies.

The minimum length of an exchange is three months and the maximum is a full academic year.

Is language not a difficulty?

The Faculty has recognised that proficiency in another European language is highly desirable for the success of any student exchange. Arrangements have therefore been made with the Language Learning Centre to offer specially designed classes in French. These classes are pitched at different levels to take account of previous knowledge (ranging from nil to passes in Highers). They are normally taught in small groups and aim to teach spoken and written language in an enjoyable and relevant way. These classes are recognised by all courses in the Faculty as "approved elective classes". Classes in other European languages may also be available. During the period of the exchange itself, language tuition is normally provided by the host university. This may include basic classes in languages such as Danish and Swedish. If you think you may be interested in participating in a European exchange programme you should ask your Year Adviser about the elective classes on offer from the Language Learning Centre.

What are the benefits for me?

While the exchanges usually mean hard work when you are there, they can also be enormous fun. Strathclyde students have taken the opportunity to travel, to spend time with students from their European university and sometimes to obtain relevant vacation employment in Europe.

How much does it cost me?

A supplementary grant is provided by the ERASMUS+ Scheme to help towards travel and higher living costs. It should be stressed that this grant is a supplement and not a substitute for your normal funding arrangements. Even although you are studying overseas, it is important to ensure that you have applied for fees through your normal funding body for the academic year in which you will be spending time overseas, and that you are properly registered, otherwise you will not be eligible for a student loan.

When can I go?

Students presently in second year may opt to spend all or part of their third year abroad; exceptionally it may be possible to spend part of the fifth year overseas. What you do abroad is normally agreed beforehand, and may be a combination of lectures, labs and project work, depending upon the courses on offer and your facility with languages. All MEng students are expected to consider going abroad at some stage during their course. This is an important element in their personal development.

There is much to be said for starting your time abroad in semester 1, if possible, since you can go early enough to check out the social scene, lecture schedules, etc, before classes start. If you want to pursue classes in Germany, you may need to go in semester 2 - project work can be carried out in either semester. Studying abroad for the whole year is by far the most beneficial and is an absolute must for France.

EXCHANGES OUTSIDE EUROPE

Opportunities also exist for study outside Europe in third year, specifically in the USA, Canada, Singapore, Australia, Hong Kong and in fifth year in China, Brazil and Japan. There is a high demand for places in these schemes and academic performance in previous years is taken into account in the allocation of places. The funding through ERASMUS is not available for study outside Europe, so you should plan your budget carefully before applying for any exchange opportunity.

HOW DO I FIND OUT MORE?

Almost all you need to know about study abroad can be found at https://www.strath.ac.uk/studywithus/studyabroad/goingabroad/. This gives links to our partner institutions and features case studies from students who have participated.

Information sessions are run by the Recruitment and International Office (RIO) in the first semester each year. These will be advertised to you and it is important that you attend these sessions to find out what opportunities exist, and for an explanation of the application process and deadlines (which will be applied rigorously).

Further information on exchange arrangements is available from the Department's Outgoing Exchange Coordinator Dr Andrew McLaren andrew.mclaren@strath.ac.uk.

Section 2

Educational Aims & Programme Regulations

The Educational Aims communicated to students via course literature indicate that the course is designed to graduate qualified professional engineers and that a student will:

- Develop the capacity to learn independently and to master new ideas and technologies.
- Increase skills in communicating and working effectively with others – individually and in teams.
- Develop a sound working knowledge of the fundamentals of systems and processes, which are generally recognised to be in the domain of mechanical engineering and related subjects.
- Develop the ability to understand, model and predict the behaviour of engineering artefacts through the application of mathematical, scientific and technological principles.
- Be provided with extensive practice in creating new engineering solutions, adapting old ones, and in using acquired knowledge in materials, energy systems, manufacture and computer-aided design techniques.
- Practice formulating, monitoring and adjusting project plans in the light of changing circumstances.
- Develop an understanding of financial, organisational and strategic aspects of engineering businesses.
- Have as many opportunities as practicable to follow special interests and activities during the programme.
- Have the opportunity to develop foreign language capabilities.
- Grow to understand his/her place as a professional engineer within engineering and the wider community.
- Meet the Educational Base requirements for eventual registration as a Chartered Engineer.

The Programme

General Regulations for all courses are published by the University at: https://www.strath.ac.uk/studywithus/academicregulations/.

Information contained in this section of our Handbook must be read in conjunction with the appropriate Undergraduate or Graduate Diploma Regulations.

Students must familiarise themselves with all University regulations/procedures and refer to these or the relevant official policy when required.

Core Curriculum

The Department of Mechanical & Aerospace Engineering courses are organised through a number of principal themes depending on which course is undertaken e.g. Materials/Engineering Manufacture and Design, Mathematics and Computer-Aided Engineering, Engineering Science and Applications, Professional Management Studies.

For example, fundamental topics which underpin the practice of mechanical engineering develop through the themes of Mechanical Engineering Science and Applications. Mathematics and Computer-Aided Engineering studies provide competence in the use of modern, analytical IT tools; appreciation of Materials, Manufacture and Design complements the base of fundamentals. More specialised topics relating to the degree in Aero-Mechanical Engineering have an increasing presence after the second year. The individual topics are progressively integrated over the duration of the courses, Engineering Design being the unifying theme in the third year. In the fourth year, the skills, knowledge and understanding developed earlier are brought to bear on a practical project. Specialised studies, in particular Engineering subjects and a Computer-Aided Engineering class based on industrial software, round off the final years of the course.

Engineering is pursued within a Business climate and the theme of Professional and Management Studies is an essential ingredient of preparing to operate as a competent engineer.

4/5 Year Structure

The MEng programme provides the opportunity for students of above-average ability to enhance their studies in alternative ways. For example, there are Masters level classes in a wide variety of Engineering topics but it may also be possible to take classes from the extensive portfolio offered by the Strathclyde Business School (popular classes include Accounting and Financial Management).

The main reason for most students to pursue the 5 year MEng option is to complete the educational requirements for Chartered Engineer status before graduating and therefore to avoid the need to return for further study at a later stage. The option to graduate after four years with a BEng Honours award is open to all students and many employers traditionally take on such graduates with a view to further in-house training which may also provide a route to Chartered status. However, current experience is that such employers look for a good class of degree and evidence of a well-rounded portfolio of achievement.

Transfer between Courses

The Department operates a policy which allows students to delay final degree choices until their career aspirations have been determined. Normally such transfers can be delayed until the start of the third year of the course.

It is normally possible to transfer from the BEng course to the more demanding MEng stream. To transfer to (and remain on) the MEng stream, students must achieve a credit weighted average (CWA) of 60% or above for their curriculum in an academic year. Any student who may wish to consider such a transfer should seek advice from their academic Year Adviser of Studies.

Such students should note that in addition to meeting the progress Regulations, transfers require the approval of the Board of Examiners. This approval will readily be granted provided that a student has achieved the necessary 60% or above CWA for the academic year. Conversely, students registered on the MEng courses will be required to transfer to the BEng stream if their performance is not at the required standard (i.e. those with a CWA of less than 60%). Further advice on all such transfers may be sought from your academic Adviser or the Course Director.

Note that it is also possible to change between some of the major discipline areas such as Mechanical Engineering and Mechanical Engineering with International Study (transfers onto Aero programmes are **not** possible). Such major changes are usually only possible in the earlier years of the courses, subject to the related course being available. Changes at the end of first year usually present few problems - although are conditional on satisfactory progress. Major changes of direction become progressively less viable if delayed (e.g. with Financial Management requires students to take AG151 in year2).

All potential changes to classes/courses must first be agreed by the Department. Please contact your academic Year Adviser.

Course Regulations - Guidance Notes

Students should consult the Regulations governing their course on a regular basis. Regulations set out the framework for your studies and specify the criteria for your progression through the course. The language is carefully chosen to cover all eventualities and may need some interpretation or clarification. The following notes do not stand in place of the Regulations but are merely intended to explain the terms used or the thinking behind the text.

The Department of Mechanical & Aerospace Engineering undergraduate degree programmes run in two main streams: 4-year BEng Honours and 5-year MEng. MEng programmes differ from BEng Honours in terms of depth of study, required Learning Outcomes and project work. Corresponding MEng and BEng programmes (e.g. Mechanical Engineering, Aero-Mechanical Engineering) have common classes in Years 1-3. The pass mark for individual classes is normally 40%.

Progress

Progress on the BEng stream is based on accumulation of sufficient credits as defined in course regulations. Progress on the MEng stream requires satisfaction of the minimum credit requirement plus the additional condition of a Course Weighted Average (CWA) mark of **60% minimum**. MEng students with a CWA below 60% are transferred to the corresponding BEng stream by the Examination Board, provided all other progress requirements have been satisfied. Year 4 MEng students not meeting the MEng progress requirements in full are transferred to the corresponding BEng degree programme and graduate immediately.

In Year 5, MEng students will carry out a 40 credit group design project involving interdisciplinary activities and, in some cases, industrial inputs. The group project and level 5 modules making up the student's 120 credit year 5 curriculum deliver specific Masters level Learning Outcomes not covered in year 1-4 classes.

Registration/Curriculum Choice

Please note that it is your responsibility to ensure that you are registered correctly each year. If you take a class but have not registered officially for that class you will not be awarded the credits. Conversely, if you register for a class then do not take it, you will be recorded as having failed unless you delete the class from your record before the curriculum change deadline.

1. The standard curriculum for full time undergraduate students is **120 credits per academic session**.
2. Compulsory classes cannot be substituted.
3. Where additional optional classes are taken, the overall mark will be based on performance in ALL classes attempted.

Degree Classifications

Final marks for Engineering degree programmes are normally calculated using a combination of the Credit Weighted Average of 3rd and 4th years (for BEng Degrees) or 3rd, 4th and 5th years (for MEng Degrees). The Faculty of Engineering algorithm for calculating degree classifications is as follows:

	3rd year	4th year	5th year
Honours Degrees	30%	70%	n/a
MEng Degrees	20%	40%	40%

Coursework

Students must keep up-to-date with coursework - this is extremely important. If you miss a deadline without satisfactory reasons, you may find that your assessment for that class is heavily compromised. Only you can judge if losing marks might affect either your progress or final assessment.

Policy and Procedure on Extensions to Coursework

The University's Extensions policy is in place to support students and to help staff to monitor students' use of extensions for identifying those who may require extra support. Where circumstances negatively impact on studies, students can request an extension to a coursework deadline **in advance of a submission date, via the Myplace online extension request facility**. The University policy, which provides guidance on requirements, is available at https://www.strath.ac.uk/sees/studentpolicies/policies/assessmentfeedbackandexternalexaminers/policyandproceduresonextensionstocourseworksubmission/.

Policy and Procedure on Late Submission of Coursework

It should be noted that penalties will be incurred for late submission. Coursework is deemed to be late when submitted after the published deadline without an agreed extension and in the absence of personal circumstances. Students should ensure they are familiar with this policy, available at https://www.strath.ac.uk/sees/studentpolicies/policies/assessmentfeedbackandexternalexaminers/policyandprocedureforlatesubmissionofcoursework/.

If you think you are unlikely to meet a coursework deadline due to medical issues or personal circumstances, you must apply for an extension as early as possible.

More detailed information on both of the above can also be found on the MAE Student Information page http://www.strath.ac.uk/engineering/mechanicalaerospaceengineering/student-information/.

NOTE: 4th and 5th year Project coursework can never be submitted late.

Examinations (General information)

It is important to note that:

- students **MUST** be available for exams during ALL of the exam diets and should therefore not arrange holidays within such periods. Published exam dates may change and therefore **you must <u>not</u> make arrangements to leave the area prior to the official end of 'Term', which includes examination periods**. No special arrangements will be made in such cases.
- students will normally have two attempts to pass classes during the course of the academic year. Those who fail to complete a class at the first attempt will be given one additional assessment opportunity before the September Board of Examiners. This will either be by coursework or examination (as detailed in the class Module Descriptor Form).
- those who are permitted to carry over classes to subsequent years will be given the opportunity to resit them during the following academic year. Students should note that failure to pass any compulsory class after four attempts will result in withdrawal from the degree. **NOTE: for Level 4 and 5 classes, only ONE resit attempt is allowed (i.e. two attempts in total).**

Please check the Student Experience and Enhancement Services (SEES) Student Lifecycle webpage at https://www.strath.ac.uk/professionalservices/exams/ for further information.

For all MAE classes (with codes beginning "16" and "ME") the Examination Co-ordinators are:

Donna Fairley and Emma Mcaulay: mae-ug@strath.ac.uk

Resit Attempts

If a student does not pass a particular examination then it is essential to resit at the next examination diet or at the next available opportunity (or complete supplementary work to a satisfactory standard), so that the total credits required for the final degree can be accumulated. **All students must be available to attend examinations during the resit diet on campus as necessary**.

Note: although Examination Boards normally allow undergraduates two attempts to gain credits for a specific module, such attempts must be at two consecutive offerings of the examination. It should also be noted that **the marks used for the purpose of determining final Honours or MEng degree classifications are based on those obtained at the first attempt**.

External Examiners

Prof Colin Turner (Professor of Engineering Education / Head of School for Engineering), from the School of Engineering, Ulster University is currently External Examiner for:

Mechanical Engineering - inc with Financial Management/International Study/Materials Engineering

External Examiner for the below programmes is to be confirmed:

Mechanical Engineering with Aeronautics
Aero-Mechanical Engineering

Students must not contact External Examiners with queries against an academic decision.
You need to contact the Department for feedback or submit an Appeal at the appropriate time as per the Personal Circumstances and University's Academic Appeals Procedures.

Use of calculators

It is recommended that students have a basic SCIENTIFIC calculator for use in examinations as, although calculators may normally be taken into an exam, they must not be used to store text /formulae nor be capable of communication (see 'Use of Electronic Devices' below). Invigilators may require calculators to be reset. Candidates are not permitted to share the use of calculators.

Use of dictionaries

Regulations state that students whose native language is not English are permitted to use paper-based English/native language dictionaries in University examinations. These dictionaries will be subject to scrutiny by the Invigilator in charge of each examination. Electronic dictionaries are not permitted in University examinations. Regulations state that, unless instructions have been issued to the contrary, dictionaries shall not be used in language examinations.

Use of Electronic Devices

Electronic devices are not permitted during examinations (unless with prior written permission of the Department/School). Electronic devices include, but are not limited to: mobile phones, music players, tablets and smart watches. Candidates are not permitted to bring earphones into the examination room. **DEVICES CANNOT BE USED AS CALCULATORS DURING EXAMS**.

Pass mark

Normally the pass mark for each individual class is 40% unless otherwise notified (level 5 modules require a pass mark of 50%). It is important to note that students on Honours and Masters courses are expected to perform at a substantially higher level.

There are a number of reasons why you should set your sights higher than the above pass marks, not least being the fact that your marks will appear on your Academic Transcript, copies of which are often sought by prospective employers.

In addition, classes contribute to the grading of your final degree classification, so it is important for you to secure the highest possible marks. In line with recommendations of accrediting institutions, the mechanism for calculating final marks is based on **first attempts at modules/classes**. This means that continued high performance will be rewarded.

Requests to sit Examinations off-campus

Your attention is drawn especially to the following:

All students must attend for examination at the University of Strathclyde on the dates and times scheduled, including mid-semester assessments (such as class tests).

Events such as holidays, family gatherings, or other personal appointments do not constitute exceptional reasons for exam purposes.

Sporting commitments will only be considered for students who are officially registered on the Elite Athlete Programme.

Also, the following specific cases will **NOT** be considered by the Department:

- where a student wishes to leave the University during/prior to the end of an examination period
- where a student has a resit examination (all students must attend resits in Glasgow in person)

Students who choose to make travel arrangements (such as purchasing non-flexible/changeable airline tickets) prior to receiving official results at the end of the academic year, **must return to the University of Strathclyde in Glasgow for the resit diet to carry out examinations on campus for any failed classes**.

NOTE – arrangements to travel overseas should not be made until you know that you have passed all classes for the current academic year.

Department of Mechanical & Aerospace Engineering

MEng in Aero-Mechanical Engineering
MEng in Mechanical Engineering
MEng in Mechanical Engineering with Aeronautics
MEng in Mechanical Engineering with Financial Management
MEng in Mechanical Engineering with Materials Engineering
MEng in Mechanical Engineering with International Study
BEng with Honours in Aero-Mechanical Engineering
BEng with Honours in Mechanical Engineering
BEng with Honours in Mechanical Engineering with International Study
BEng in Mechanical Engineering
Diploma of Higher Education in Mechanical Engineering
Certificate of Higher Education in Mechanical Engineering

[This information is to be read in conjunction with relevant academic regulations at https://www.strath.ac.uk/studywithus/academicregulations/]

Mode of Study

The courses are available by full-time study only.

Place of Study

The MEng and BEng with Honours in Mechanical Engineering with International Study requires study at an approved institution abroad. Such study will normally extend over a minimum period of 30 weeks.

Curriculum

First Year

All students shall undertake classes amounting to 120 credits as follows:

Compulsory Classes		Level	Credits
16132	Engineering Mechanics 1	1	20
EE108	Electrical Circuits	1	10
ME101	Heat and Flow 1	1	10
ME105	Mechanical Engineering Design	1	20
ME107	Experimental and Laboratory Skills	1	10
ME108	Engineering Analysis and Numerical Methods	1	10
MM117	Mathematics 1M	1	20
Elective Class(es)			20

Second Year

All students shall undertake classes amounting to 120 credits as follows:

Compulsory Classes		Level	Credits
16232	Engineering Mechanics 2	2	20
16288	Professional Studies	2	10
19222	Electrical Machines and Control	2	10
ME203	Heat and Flow 2	2	20
ME209	Mathematical Modelling and Analysis	2	20
ME212	Materials Engineering and Design	2	10
ME214	Mechanical Engineering Design 2	2	10

together with classes appropriate to the chosen course:

Mechanical Engineering
Mechanical Engineering with International Study
Mechanical Engineering with Materials Engineering

Elective Class(es)			20

Aero-Mechanical Engineering

16231	Flight and Spaceflight 1	2	10
ME201	Aero Design and Flight Test	2	10

Mechanical Engineering with Aeronautics

16231	Flight and Spaceflight 1	2	10
16259	Aero-Design 1	2	10

Mechanical Engineering with Financial Management

AG151	Introduction to Finance and Accounting 1	1	20

Third year

All students shall undertake classes amounting to 120 credits as follows:

Compulsory Classes		Level	Credits
16327	Structural Mechanics	3	10
16361	Dynamics and Control	3	20
16363	Engineering Analysis 3	3	20
ME301	Heat and Flow 3	3	20
ME415	Strategic Analysis of Engineering Business Case Studies	4	10
ME416	Engineering Ethics	4	10

together with classes appropriate to the chosen course:

Aero-Mechanical Engineering
Mechanical Engineering with Aeronautics

16351	Flight and Spaceflight 2	3	10
16309	Aero- Design 2	3	20

Mechanical Engineering
Mechanical Engineering with Financial Management
Mechanical Engineering with Materials Engineering
Mechanical Engineering with International Study

ME312	Mechanical Design 3A	3	10
ME313	Mechanical Design 3B	3	20

Mechanical Engineering with International Study

Students who elect to undertake study abroad in their third year must do so at an approved institution and shall follow an approved curriculum reflecting that undertaken by students taking the Mechanical Engineering course. Such study will normally extend over a minimum period of 30 weeks.

Fourth year

All students will undertake classes amounting to 120 credits as follows:

Compulsory Classes		Level	Credits
16402	Case Studies in Engineering	4	10
16429	Computer Aided Engineering Design	4	20
ME403	Engineering Materials Selection	4	10
ME405	Heat and Flow 4	4	10
ME414	Advanced Mechanics and Dynamics	4	20

together with classes appropriate to the chosen course:

Aero-Mechanical Engineering

ME420	Individual Project - Aerospace	4	40
ME425	Aerospace Propulsion	4	10

ME420 Individual Project - Aerospace can be used to contribute towards a Vertically Integrated Project.

Mechanical Engineering with Aeronautics

ME409	Individual Project	4	40
ME425	Aerospace Propulsion	4	10

ME409 Individual Project can be used to contribute towards a Vertically Integrated Project.

Mechanical Engineering
Mechanical Engineering with Financial Management
Mechanical Engineering with Materials Engineering
Mechanical Engineering with International Study

ME404	Energy Systems Modelling	4	10
ME409	Individual Project	4	40

ME409 Individual Project can be used to contribute towards a Vertically Integrated Project.

Fifth Year

All students, with the exception of those who elect to spend fifth year of studies abroad, shall undertake 120 level 5 credits as follows:

Aero-Mechanical Engineering

Compulsory Classes

ME525	MEng Group Project - Aerospace	5	40

together with 80 credits of optional classes chosen from the list below.

Mechanical Engineering
Mechanical Engineering with Aeronautics
Mechanical Engineering with International Study

Compulsory Classes

ME519	Group Project	5	40

together with 80 credits of optional classes chosen from the list below.

Mechanical Engineering with Financial Management

Compulsory Classes

ME519	Group Project	5	40
ME515	Finance for Mechanical Engineers	5	60

together with 20 credits of optional classes chosen from the list below.

Class Combinations:

ME 515	Finance for Mechanical Engineers	5	60

Finance classes at an appropriate level as may be approved by the Adviser of Study.

Mechanical Engineering with Materials Engineering

Compulsory Classes

ME519	Group Project	5	40
16565	Engineering Composites	5	10
ME523	Polymer and Polymer Composites	5	10

together with 60 credits of optional classes chosen from the list below.

ME519 Group Project or ME525 MEng Group Project - Aerospace can be used to contribute towards a Vertically Integrated Project.

Exceptionally, such other level 5 classes totaling no more than 20 credits as approved by the Course Director.

Students who elect to undertake their period of study abroad in fifth year must do so at an institution acceptable to the Head of Department and shall be registered for ME524 – MEng Group Project Abroad.

Optional Classes

16565	Engineering Composites	5	10
16587	Pressurised Systems	5	10
16599	Aerodynamic Propulsion Systems	5	10
ME505	Machine Dynamics	5	10
ME507	Machinery Diagnosis and Condition Monitoring	5	10
ME511	Mathematical Modelling in Engineering Science	5	10
ME512	Spaceflight Mechanics	5	10
ME514	Advanced Topics in Fluid Systems Engineering	5	10
ME517	Spaceflight Systems	5	10
ME520	Advanced Research Project A	5	10
ME521	Advanced Research Project B	5	20
ME523	Polymer and Polymer Composites	5	10
ME526	Engineering Plasticity	5	10
ME527	Introduction to Engineering Optimisation	5	10
ME528	Control Systems Design	5	10
ME529	Aerodynamics in C	5	10
ME530	Aero-Acoustics	5	10

Exceptionally, such other level 5 classes totalling no more than 20 credits as approved by the Course Director.

Progress

For details on progress through each year of the programme, see the General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Level at:
https://www.strath.ac.uk/media/1newwebsite/documents/academicregulations/UG_General_Regulations.pdf

Final Assessment and Classification

The final classification for the chosen degree will normally be based on the first assessed attempt at compulsory and specified optional classes in the second, third, fourth and fifth years.

Award

For details on qualifying for awards, see the General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Level at:
https://www.strath.ac.uk/media/1newwebsite/documents/academicregulations/UG_General_Regulations.pdf

Appendix 1
Departmental Occupational Health and Safety Arrangements

Emergency telephone numbers (internal) - Extension 2222 or 3333

Emergency telephone number (external) 9/999 Fire/Police/Ambulance

1. Safety Organisation

Health and safety within the Department is organised in accordance with the University Safety Code (Section 6.6 of the University Calendar) which should be studied by all members of staff. All members of staff will be issued with a copy of these Regulations and are required to sign a declaration stating that the Regulations have been read and understood. Supervisory staff should ensure that the attention of students is drawn to the provisions of the Safety Code and Departmental Safety Regulations.

The Head of the Department has ultimate responsibility for all health and safety matters.

Health and safety management is undertaken by the Departmental Safety Convener.

An Area Safety Committee has been formed to monitor health and safety issues within specific areas. The identities of current post-holders and their areas of responsibility can be obtained from Central Services or from the Departmental Safety Convener.

General information on any health and safety matter should be directed to the Departmental Safety Convener in the first instance.

The University's Safety Services Unit can be contacted on Ext 2726.

2. Departmental Safety Committee

A Departmental Safety Committee has been appointed consisting of at least three persons representative of the main groups of staff working in each area and include, where appropriate, at least one student. The Departmental Safety Convener convenes the meetings of the Departmental Safety Committee and acts on its behalf as necessary.

3. Fire

In the event of a General Fire Alarm the procedure is set out in the Fire Regulations posted at every floor of the James Weir Building and any other building you may occupy. Read these carefully and check from time to time for any changes which may be made.

- Fire drills will be held at least once per semester.
- Know the meaning of the audible fire alarms.
- Know every escape route in the building.
- Exit by a different route at each drill.
- Note locations of fire extinguishers - all are clearly marked.

In the event of a fire being discovered:-

- Leave the room, close the door and raise the alarm by activating the nearest "break-glass" fire alarm call point and informing the security wardens (Ext 2222 or 3333).

- If it is safe to do so, use an appropriate fire extinguisher to attack the fire. Do not use water where electrical equipment or flammable liquids are involved.

- In the case of laboratory fires, if it is safe to do so, switch off all electrical and fuel supplies to the equipment involved or, if necessary, to the entire laboratory.

- Do not store combustible materials on or near electric heaters.

- Do not accumulate waste material.

- Keep litter bins covered.

- Keep fire exits clear of obstructions

4. Accident or Illness

Emergency Telephone Numbers - Extension 2222 or 3333

- If possible give immediate assistance to the patient. General First-Aid Guidance notes are contained in all First-Aid boxes. A First Aid box may be found in all of the Departmental Laboratories.

- Get help of colleagues.

- Telephone 2222 or 3333 giving own name and department, exact location (building, floor, room number) and nature of incident.

- Say if a doctor is required.

- Do not move the patient from reported position (unless obviously necessary to avoid further injury) until the arrival of the ambulance services.

- The patient should be accompanied to the hospital by a colleague.

5. Reporting of Accidents and Dangerous Occurrences

All accidents and dangerous occurrences, however apparently trivial, should be reported to the member of staff in charge or to the technician in charge of the laboratory. The Departmental Safety Convener should also be informed.

An official Accident or Occurrence Report Form S.1 should be completed for all accidents and dangerous occurrences and sent to the University Safety Officer via the The Departmental Safety Convener. Should an incident result in hospital attendance, the Safety Office should be informed by phone as soon as possible.

6. COSHH

Under the Control of Substances Hazardous to Health Regulations 1988 (COSHH), it is incumbent upon anyone involved in the use of hazardous materials to ensure that a safe working practice is agreed upon. No work is permitted until a RISK ASSESSMENT FORM (eRisk and eCOSHH) has been completed. Copies of each assessment must be lodged with the Safety Convener.

All staff and relevant students should be acquainted with the Regulations.

Copies of the approved Guidance handbook on COSHH may be obtained from the Safety Convener or the University Safety Office.

Failure to comply with the Regulations may result in that area of activity being shut down BY LAW.

7.Hazardous Operations

Work should not proceed unless a Risk Assessment has been issued and signed.

Suitable protective clothing must be worn for all potentially dangerous operations (e.g. grinding/welding) supplies of which are available from the technician in charge of the laboratory.

All areas in which special hazards exist (e.g. lasers) are clearly marked and entry to these regions is restricted to those personnel having permission to work in them. Refer to the Protection of Eyes Regulations 1974.

All hazardous materials and glassware should only be transported or carried in properly designed safety containers. Winchesters should be carried only in proper holders, not in the hand. Passenger lifts should not be used unless special precautions are taken.

8. Permits to Work

All persons, other than trained workshop staff, who wish to use machine tools, hand held tools or welding equipment, etc must have a Permit to Work signed by the Head of Department or his appointed Deputy and an appropriate Academic Supervisor. Permits will only be granted to persons who can show evidence of satisfactory training and relevant experience. Permit holders must liaise with the Laboratory Superintendent before using any equipment. Permit application forms can be obtained from the Departmental Safety Convener.

9. General Laboratory/Workshop Procedure

- Protective clothing and safety glasses must be worn at all times.
- Coat racks or lockers are provided and should be used for outdoor clothing (coats, scarves, etc.).
- Food and drink is not permitted in laboratories or workshops.
- Always use machine guards where provided.
- Clean tools and machines after use and deposit all scrap material in the bins provided.
- Keep litter bins covered.
- Observe and obey No Smoking signs.
- Observe and obey all warning signs.
- Horseplay is forbidden.
- When operating equipment in the laboratories, at least two people should be present. One of these should be a technician or a member of the academic staff. Where working without supervision is essential, work should not be carried out alone. the completion of a Risk Assessment must be performed and endorsed by the Laboratory Superintendent or Academic Supervisor prior to the commencement of such work.
- Avoid loose clothing, long hair and badly fitting footwear.
- Keep all chemicals in suitable storage (see under COSHH).

- Switch off all gas cylinders, water, gas and other taps when not in use.
- Keep labs and workshops tidy.
- Keep floors clean and free of oil and grease deposits.
- Do not obstruct passages, doorways or other thoroughfares.
- Keep clear of overhead lifting-gear.
- Lifting tackle should only be used by trained personnel under the overall supervision of the technician in charge and in accordance with appropriate regulations. Replace all guard rails which may have been removed to facilitate the movement of equipment.
- Do not overload electrical power points.
- Trip hazards, such as trailing cables must not run across working areas.

9.1 Office Areas

- Office areas should be kept clean and tidy and free of trailing electrical cables.
- Cables should be inspected regularly and replaced if the insulation shows signs of wear.
- Materials should not be stored on top of filing cabinets or cupboards particularly near eye level.
- Filing cabinets should be filled from the bottom to ensure stability and drawers kept closed.
- Solvents should only be used in well ventilated areas and kept clear of heat sources.

10. Access to Buildings outwith Normal Hours

There is currently no access to buildings out with normal working hours (8am – 6pm Mon –Fri). An update with be provided when the restrictions are revised.

11. Supervision of Postgraduate and Project Students

Supervisors should establish a mode of working with their students such that the supervisor is aware of and agrees to, each element of work, that safe working practices are agreed and where appropriate set down on paper and that regular, active, supervision is established.

12. Visitors to Laboratories

Visitors to the laboratories who are not accompanied by a member of staff should report to the relevant Laboratory Superintendent.

Maintenance staff should report to the relevant Laboratory Superintendent before commencing work in any laboratory area.

Children under the age of 14 are not normally permitted to enter laboratories or workshops. (See Appendix 2 of this Handbook).

13. Electricity at Work Regulations 1989

All offices, storerooms, workshops and laboratories, of whatever kind, within the Department must comply with these Regulations.

It should be noted that the University's Estates Management Department is responsible for all

electrical services in the University, e.g. isolators, sockets and other such fixed equipment and no one may break into the electrical system for any reason without the authorisation of the University Electrical Engineer. Persons involved in the use of, and/or responsible for the use of electrical equipment, must read the Regulations and the University's own handbook entitled "Local Rules for Electrical Safety" (November 1991), a copy of which may be obtained from the Departmental Safety Convener. Work on 'live' equipment is prohibited unless in the most exceptional circumstances; before any such work is undertaken permission in writing must be granted by the Departmental Safety Convener.

14.General Electrical Safety

Open-bar electric fires and non-automatic kettles are not allowed in the University.

Multi-way distribution boards with 13 amp shuttered outlets may be used from a socket provided the total load does not exceed 13 amps and they are designed to BS1363. Adaptors are not permitted.

Plugs must be fitted by, and new equipment inspected by, a competent person, before being taken into service, normally by arrangement with the relevant Laboratory Superintendent. A record of the equipment must be kept (see 15 below). The Departmental Safety Convener may approve members of staff bringing in their own personal electrical equipment (except those banned items shown above), however, such items must also be included in the Departmental inventory of electrical equipment and appropriately inspected and tested (see 15 below).

All staff have individual responsibility to report obviously faulty equipment, e.g. broken plug tops, damaged cables, etc. to their supervisor or directly to the relevant Laboratory Superintendent. Equipment thought to be defective should not be used and must be reported immediately to the relevant Laboratory Superintendent. Such equipment should be removed from service until compliance with Section 15 is established. Users of equipment should regularly inspect for damage to casings, cables and plugs etc. and for loose screws.

Where specific hazards exist in laboratory/workshop areas they will be clearly marked at the direction of the relevant Laboratory Superintendent.

All persons wishing to use new or existing equipment in laboratory areas must liaise with the relevant Laboratory Superintendent before commencing work.

15.Inspection and Testing of Electrical Apparatus

All electrical apparatus is required to be inspected and tested at certain intervals. Portable electrical equipment should not be used unless it possesses an approved PAT label.

All fixed installations are the responsibility of the University Electrical Engineer.

All other equipment which can be plugged into a socket, including extension cables, etc. (and can also include battery operated equipment) is the responsibility of the Head of Department.

The Regulations require records to be kept of the maintenance, inspection and testing of all equipment in some detail for the duration of its working life. These records will be maintained centrally by the Departmental Safety Convener. Advice should be sought from the relevant Laboratory Superintendent prior to the introduction of any new electrical equipment.

16.Control of Noise at Work Regulations 2005

Loud noise at work can damage hearing therefore, measures have to be put in place to prevent or reduce risks from exposure to noise at work. It can also be a safety hazard at work, interfering with communication and making warnings harder to hear.

The Regulations require the employer to assess the risks to your employees from noise at work; take action to reduce the noise exposure that produces those risks; provide your employees with hearing protection if you cannot reduce the noise exposure enough by using other methods; make

sure the legal limits on noise exposure are not exceeded; provide your employees with information, instruction and training; carry out health surveillance where there is a risk to health.

The Noise at Work Regulations 1989 have been revised and the new 2005 updated legislation comes into force on 6th April 2006 (with the exception of the music and entertainment sectors where the Regulations come into force on 6th April 2008).

The new Regulations require employers to take specific action at certain action values (previously called action levels). These relate to:

- the levels of noise employees are exposed to averaged over a working day or week (e.g. use of weekly exposure would be appropriate in situations where noise exposures varied markedly from day to day e.g. gardening staff using power tools on two days of the week); and

- the maximum noise (peak sound pressure – noises due to impacts e.g. hammering, pneumatic impact tools) to which employees are exposed in a working day.

Noise levels are measured in decibels (dB) and the following new values are:

Lower exposure action values:

□□daily or weekly exposure of ***80dB*** (previously 85dB);

□□peak sound pressure of ***135dB***.

Upper exposure action values:

□□daily or weekly exposure of ***85dB***;

□□peak sound pressure of ***137dB***.

Exposure limit values: (these are levels of noise exposure which must not be exceeded) daily or weekly exposure of ***87dB***, peak sound pressure of ***140dB***. These exposure limit values take account of any reduction in exposure provided by hearing protection ie personal protective equipment.

There is a new specific requirement to provide ***health surveillance*** where there is a risk to health. Health surveillance must be provided for all individuals, staff or students where there is a risk to health from exposure to noise e.g. employees who are likely to be regularly exposed above the upper exposure action values, or are at risk for any reason, e.g. they already suffer from hearing loss or are particularly sensitive to damage. More information on health surveillance is available from the University's Occupational Health Service. If you have any concerns regarding occupational noise induced hearing loss or tinnitus (ringing or buzzing in the ears) please contact the Occupational Health Service on extension (JA) 4824 or email occupationalhealth@strath.ac.uk

Hearing protection must now be made available where there is exposure above the new lower exposure action value (80dB). Hearing protection must be worn and a programme of control measures (see below) implemented where there is exposure above the new upper exposure action value (85dB). Noise assessments will require to be reviewed to take into account the changes in the action levels. (See below).

The implementation of these Regulations can be quite complex and advice should be obtained from the Safety Officer by anyone affected by them.

17. Buildings and Equipment

Building structural faults should be brought to the attention of the University's Estates Management Department.

The safety and installation of electrical equipment and the clearance of electrical faults up to the normal 13 Amp socket outlets are the responsibility of the University's Electrical Engineer who is based in Estates Management.

18. Radiation Hazards

Radiation Hazards are the responsibility of the Area Radiation Protection Supervisors. The identities and locations of current post-holders can be obtained from your Departmental Safety Convener.

19. Compressed Gas Safety

Only persons within the Department who have been specifically trained may transport, attach or detach gas cylinders from equipment. These persons will follow the University Gudance on Compressed Gas Safety (15th December 2009).

Appendix 2

Access to University Premises -

John Anderson Campus - COVID-19 Pandemic Restrictions

Return of the staff and students to the campus will only be allowed after the agreement from the Dean of the Faculty of Engineering is received.

If access to campus is required, the Departmental Safety Committee should be contacted by mae-safety@strath.ac.uk. The following documents will be provided and are required to be accepted and signed prior to application for Return to Campus:

- MAE Covid-19 Risk Assessment
- Safe System of Work (SSOW)
- COSHH assessment related to the use of disinfectants are in place
- Return to Campus Agreement
- Health Self-Assessment
- MAE Induction via Zoom video recording

Confirmation of the completion of all required documentation and understanding and acceptance of the induction information and all relevant forms, guidelines and documents is tracked for all returning applicants.

Access is granted only to the essential workspaces indicated by the research or workshop activity. All MAE relevant work and social spaces have been assessed and maximum occupancy limits have been identified based on the social distancing of 2m, lab / workshop floor space sketches and a visual assessment. All lab and workshop and kitchen doors have a sign notifying the occupancy limit. Contactless key card access is used in most workspaces authorising only relevant staff and students for that particular area.

Workshop and research areas have a coordinator assigned who will monitor and control occupancy levels. The area coordinators will have a duty to enforce the occupation limits and a rota system will be implemented if required.

All staff and students granted access are required to sign in and out of a log sheet at the main entrance of the James Weir Building. The log sheets are collected and number of MAE persons accessing the campus are tracked. Information will be made available to NHS Scotland Test and Protect if required.