Group academic advisor meeting

September 2022

Review of the past year

Q1: Think about what you have done in the last 12 months (academically or otherwise) and identify…

a. Something you are particularly proud to have achieved.

b. Something you enjoyed doing over the summer.

c. The skills you have developed/used during these activities.

Q2: Which skills are you are using and developing in your degree programme?

You can find more information in the skills mapping document:

Students can access this at: Blackboard->MATH20040/30040/40040/Skills

Action planning for this semester

Q3: Thinking about semester 1 identify…

a. one skill that you would like to work on developing this semester

b. one career option that you would like to explore this semester.

Q4: How will you achieve this?

Departmental Careers pages: Blackboard->MATH20040/30040/40040

Timetable of careers activities/events in the Department this semester

Career Service website

CareerConnect

Expectations and time management

An important part of being a student is learning to manage one's time and to work independently.

Q5: What strategies do you currently use in managing your studies?

Q6: What advice would you give to others?

More information on expectations can be found in the student handbook on the UG Student intranet

Careers: How to make the most of your 1st & 2nd years...

Start of Year Fair
Come and **chat** to your Careers Service at the Start of Year Fair on **Tuesday 20** and **Wednesday 21 September** in the **Welcome Huts** next to **Uni Place**

Lots of **Internships** and **Placements** as well as **Spring Week and Insight Days** are **open** for **applications** from September onwards – Don't miss out!

Try Something New
Think about **skills** you'd like to develop, or jobs you're curious about and use your spare time to get some experience. Why not consider **Volunteering, Sports**, and/or **Societies**?

SEPTEMBER **OCTOBER** **NOVEMBER**

Log on to CareerConnect
CareerConnect is our student careers portal, enabling you to engage with and book: **Careers Appointments, Careers Events, Spring Weeks, Insight Days, Internship and Placement Vacancies, Pathways** and more!

Work Experience Bursary
launches in Semester 1 to **full time undergraduates** to help with the **costs** of work experience

Apply for Global Graduates!
Apply in February to spend a fully funded week **meeting with alumni** from a range of **business** and **industry** sectors

Many **application deadlines** for **Internships** and **Placements** as well as **Spring Week and Insight Days** occur around December – Be quick!

Feeling stuck?
Reflect on your career interests and motivations with our **Profiling for Success** tool. We recommend the Type Dynamics Indicator.

DECEMBER **JANUARY** **FEBRUARY**

Lots of employer assessment processes take place about now. Get ahead of the game by practising those tricky **Psychometric Tests** on the Graduates First platform

First Insights Conference
If you're in your 1st year, **explore** three different **career sectors** of your choice and **meet employers/alumni**.

Asia Career Insights Series
In March, discover career opportunities and gain knowledge about the **current recruitment market** across **Asia, The UK and globally**

MARCH **APRIL**

It's not too late!
SMEs and **local businesses** tend to advertise **single opportunities** for **internships, placements**, as well as **insight days** with their organisation closer to summer

Student Experience Internships
Penultimate Year students can apply to undertake a summer **internship** to gain **skills** and **experiences** to help achieve future **graduate jobs**

MAY **JUNE AND BEYOND**

If you're feeling uncertain about your future and would like some advice and guidance, chat to us on webchat or book a 1:1 appointment at The Careers Service. Scan our LinkTree QR code to find out more.

CAREERS SERVICE

DEPARTMENT OF MATHEMATICS:

GRADUATE SKILLS DEVELOPMENT FOR UNDERGRADUATE STUDENTS 2022/2023

The tables below summarise opportunities for skills development at Departmental and University level, colour coded as follows:

Green: There are direct opportunities for students to develop these skills within mathematics course units (the darker the shade of green, the more numerous the opportunities) in addition to opportunities and support elsewhere in the university.
Yellow: There is no direct training for these skills within mathematics course units, but opportunities and support is available to help develop those skills through general engagement with their programme of study, and through engagement with voluntary activities within the department. Additional opportunities and support can be found elsewhere in the university.
Red: No direct training or support is provided within the department, although there are opportunities elsewhere in the university.

<table>
<tr><th>SKILL</th><th>WITHIN THE DEPARTMENT OF MATHEMATICS</th><th>ELSEWHERE IN THE UNIVERSITY</th></tr>
<tr>
<td>NUMERACY

ANALYTICAL SKILLS

CRITICAL THINKING

PROBLEM SOLVING

CREATIVITY

COMMUNICATION</td>
<td>During your studies
These skills are developed across ALL mathematics course units, through critical reading and application of mathematical theory. Students assimilate technical information, assess how this relates to a given problem, perform detailed calculations, come up with creative solutions to mathematical problems, and present written arguments to demonstrate their understanding.

<table>
<tr><td>Throughout your studies you are developing the ability to…</td></tr>
<tr><td>apply core mathematical skills to a range of contexts</td></tr>
<tr><td>independently formulate, analyse, and solve mathematical problems</td></tr>
<tr><td>abstract the essentials of problems in symbolic form</td></tr>
<tr><td>obtain solutions by application of appropriate methods using structured and analytical approaches</td></tr>
<tr><td>carry out mathematical calculations and manipulations in an efficient manner</td></tr>
<tr><td>employ a range of strategies to ensure the validity and accuracy of calculations and manipulations</td></tr>
<tr><td>use and explain the ideas and methods from some advanced areas of Mathematics</td></tr>
<tr><td>show effective judgement in the selection and application of tools and techniques to a variety of problems</td></tr>
<tr><td>develop and evaluate critically a wide range of different forms of logical arguments</td></tr>
<tr><td>express mathematics in writing with clarity and accuracy</td></tr>
<tr><td>present arguments and conclusions effectively and accurately</td></tr>
<tr><td>organize and present mathematical or statistical information</td></tr>
<tr><td>use analytical skills and logical thinking</td></tr>
</table>
</td>
<td>UCIL
Many students can elect to take University College of Interdisciplinary Learning (UCIL) courses https://www.college.manchester.ac.uk/ as part of their programme.
Refer to the UG handbook for details of your programme and how to apply for UCIL course units if eligible.

The following courses are designed to build analytical, thinking and communication skills. Examples include:

• From Cholera to COVID-19: A Global History of Epidemics;
• Current topics in biology;
• Digital Society: your place in a networked world;
• Science, Technology and Democracy;
• Trust and Security in a Digital World;
• Language, Mind and Brain;
• British Sign Language;
• Learn a Language;
•

Careers Service resources
Graduate employers often assess students' numerical reasoning and related skills when they apply for jobs. You can practice and develop these skills using the portal Graduates First (UoM students have free access to this site) at: www.careers.manchester.ac.uk/psychometric/</td>
</tr>
</table>

<table>
<tr><th>SKILL</th><th>WITHIN THE DEPARTMENT OF MATHEMATICS</th><th>ELSEWHERE IN THE UNIVERSITY</th></tr>
<tr>
<td>TEAMWORK</td>
<td>
During your studies
All students have informal opportunities to work with others in supervisions and tutorial classes.

Students work together on assessed work in:
<table>
<tr><td>MATH11221: Mathematical Problem Solving</td><td>Mandatory for single honours [Not an option for joint honours*]</td></tr>
<tr><td>MATH20062: Mathematical Communication & Group project</td><td>Mandatory for single honours [Not an option for joint honours*]</td></tr>
<tr><td>MATH20521: Principles of Mathematical Modelling</td><td>Optional</td></tr>
</table>
<table>
<tr><td>Throughout your studies you are developing the ability to…</td></tr>
<tr><td>work effectively in a group on both structured and unpredictable tasks</td></tr>
<tr><td>take responsibility as a member of the group for improving both the working patterns of the group and their own individual contribution to the group</td></tr>
</table>
<table>
<tr><td>*Joint honours students…</td></tr>
<tr><td>there may be alternative opportunities to develop teamwork skills in the non-mathematics part of your degree.</td></tr>
</table>
</td>
<td>
UCIL [Remember to check your programme requirements!]
All UCIL courses allow students to practice and develop transferable skills: some UCIL courses involve group work, for example:

Are We Alone? The Search for Extra-terrestrial Life
From Sherlock Holmes to CSI: A History of Forensic Science and Medicine
In Frankenstein's Footsteps: Science Fiction in Literature and Film
AI: Robot Overlord, Replacement or Colleague?

Other activities
There are a variety of student roles and activities across the university where teamworking skills can be developed:
PASS or peer mentoring schemes
Students’ Union and societies
University Sports clubs and teams
Sport Volunteer Scheme
Volunteering

Careers Service resources
Work experience is also a good way to develop teamwork; the Careers Service offer advice and support on where to look for opportunities:
Jobs and internships
</td>
</tr>
</table>

<table>
<tr><th>SKILL</th><th>WITHIN THE DEPARTMENT OF MATHEMATICS</th><th>ELSEWHERE IN THE UNIVERSITY</th></tr>
<tr>
<td>PRESENTATION SKILLS</td>
<td>
During your studies
Students produce reports and give oral presentations in:
<table>
<tr><td>MATH11221: Mathematical Problem Solving</td><td>Mandatory for single honours [Not an option for joint honours*]</td></tr>
<tr><td>MATH20062: Mathematical Communication & Group project</td><td>Mandatory for single honours students [Not an option for joint honours*]</td></tr>
<tr><td>MATH30002: Mathematics Education</td><td>Optional</td></tr>
<tr><td>Third Year Project</td><td>Optional</td></tr>
<tr><td>Fourth Year Project</td><td>Mandatory for MMath</td></tr>
</table>
<table>
<tr><td>Throughout your studies you are developing the ability to…</td></tr>
<tr><td>communicate effectively through appropriate media</td></tr>
</table>
<table>
<tr><td>*Joint honours students…</td></tr>
<tr><td>there may be alternative opportunities to develop presentation skills in the non-mathematics part of your degree.</td></tr>
</table>
</td>
<td>
UCIL [Remember to check your programme requirements!]
All UCIL courses allow students to practice and develop transferable skills: in many cases they are assessed by written reports, rather than examination. Some UCIL courses involve oral presentations, such as:

• Communicating with Confidence
• Visualising Information: Uses and Abuses of Data
• Learn a Language

My Learning essentials
The Presentation Support package form My Learning Essentials
www.escholar.manchester.ac.uk/learning-objects/mle/packages/presentations/

Careers Service resources
Support with presentations when applying for jobs:
www.careers.manchester.ac.uk/applicationsinterviews/assessmentcentres/
</td>
</tr>
</table>

<table>
<tr><th>SKILL</th><th>WITHIN THE DEPARTMENT OF MATHEMATICS</th><th>ELSEWHERE IN THE UNIVERSITY</th></tr>
<tr>
<td>IT SKILLS</td>
<td>
During your studies
Students learn to use LaTeX, MATLAB, Python and R in:
<table>
<tr><td>MATH11221: Mathematical problem solving</td><td>Mandatory for single honours [Not an option for joint honours*]</td></tr>
<tr><td>MATH20621: Programming with Python</td><td>Mandatory(-ish)** for single honours [Not an option for joint honours*]</td></tr>
<tr><td>MATH20811: Practical Statistics</td><td>Mandatory for statistical programmes [Not an option for most]</td></tr>
<tr><td>MATH20802: Statistical Methods</td><td>Mandatory for statistics programmes
Optional to others</td></tr>
<tr><td>MATH36031: Problem Solving by Computer</td><td>Optional</td></tr>
</table>
**Single honours students who do not wish to take Programming with Python MUST select a UCIL course instead.

<table>
<tr><th>Throughout your studies you are developing the ability to…</th></tr>
<tr><td>use computing and information technology skills, with the ability to use a range of standard and more specialist software packages</td></tr>
</table>

<table>
<tr><th>*Joint honours students…</th></tr>
<tr><td>there may be alternative opportunities to develop IT skills in the non-mathematics part of your degree. (Especially for Computer Science and Mathematics students!)</td></tr>
</table>
</td>
<td>
UCIL [Remember to check your programme requirements!] All UCIL courses allow students to practice and develop transferable skills: most require students to use word processing software to produce written reports.

The Discovery Tool:
The University helps students to develop their digital skills. Students take the Discovery Tool questionnaire to receive their personal report of opportunities.
https://www.escholar.manchester.ac.uk/learning-objects/digicap/

Careers Service resources
Opportunities with employers to develop digital skills
https://www.careers.manchester.ac.uk/findjobs/skills/itskills/
</td>
</tr>
</table>

<table>
<tr><th>SKILL</th><th>WITHIN THE DEPARTMENT OF MATHEMATICS</th><th>ELSEWHERE IN THE UNIVERSITY</th></tr>
<tr>
<td>RESEARCH SKILLS</td>
<td>
During your studies
Students research topics independently in:
<table>
<tr><td>MATH11221: Mathematical problem solving</td><td>Mandatory for single honours [Not an option for joint honours]</td></tr>
<tr><td>MATH20062: Mathematical Communication & Group project</td><td>Mandatory for single honours [Not an option for joint honours]</td></tr>
<tr><td>MATH35062: Mathematics of a finite planet</td><td>Optional</td></tr>
<tr><td>Third Year Project</td><td>Optional</td></tr>
<tr><td>Fourth Year Project</td><td>Mandatory: 4th year MMth</td></tr>
</table>
<table>
<tr><td>Y4 MMath students…</td></tr>
<tr><td>study specialized areas of mathematics in sufficient depth to prepare for postgraduate studies, conduct mathematical research or to work as mathematicians in industry or business, after appropriate professional training as required.</td></tr>
</table>
<table>
<tr><td>Joint honours students…</td></tr>
<tr><td>there may be alternative opportunities to develop research skills in the non-mathematics part of your degree.</td></tr>
</table>
</td>
<td>
UCIL [Remember to check your programme requirements!]
All UCIL courses allow students to practice and develop transferable skills: in many cases students are encouraged to explore topics independently, and to write a report or essay on their findings, such as:

Madness and Society in the Modern Age
The Nuclear Age: Global Nuclear Threats from Hiroshima to Today
Philosophy in Action: Philosophical Approaches to the Big Problems of our Time
Understanding China's Rise in a Globalising World
Understanding Mental Health

Student Experience Internships
The Learning Through Research internships provide research experience for 2nd /prefinal year students
https://www.careers.manchester.ac.uk/findjobs/internships/2ndyear/sei/
</td>
</tr>
</table>

<table>
<tr><th>SKILL</th><th>WITHIN THE DEPARTMENT OF MATHEMATICS</th><th>ELSEWHERE IN THE UNIVERSITY</th></tr>
<tr>
<td>WORK BASED LEARNING</td>
<td>
Placement year
Students on all mathematics* programmes can apply for a placement year as part of their studies (between year 2 and year 3, or year 3 and year 4 for MMath students).
<table>
<tr><th>Year placement students…</th></tr>
<tr><td>have first-hand experience of applying for jobs and interviewing for graduate employment</td></tr>
<tr><td>gain invaluable work-based experience</td></tr>
<tr><td>learn more about themselves and the workplace to enable informed decisions about careers post-graduation</td></tr>
<tr><td>have knowledge and understanding of the opportunities, requirements and responsibilities involved in graduate-level employment.</td></tr>
</table>
For queries relating to placements, contact placement@maths.manchester.ac.uk

<table>
<tr><th>* Computer Science and Physics students…</th></tr>
<tr><td>Please contact your home department for details</td></tr>
</table>
</td>
<td>
UCIL [Remember to check your programme requirements!]
Students can elect to take the UCIL course:
Leadership of Learning - with Teaching Placement
Student Experience Internships
The Student Experience Internship scheme provides work experience opportunities within the university www.careers.manchester.ac.uk/findjobs/internships/2ndyear/sei/

Careers Service resources
Many employers provide internships, work placements and insight courses to help develop work-based skills. www.careers.manchester.ac.uk/findjobs/internships/

Global Graduates- meet with alumni from a range of business and industry sectors www.careers.manchester.ac.uk/findjobs/globalgraduates/
</td>
</tr>
<tr>
<td>ETHICS AND SOCIAL RESPONSIBILITY</td>
<td>
During your studies
Students are introduced to the consideration of ethical issues in
<table>
<tr><td>MATH35062: Mathematics of a finite planet</td><td>Optional</td></tr>
</table>
<table>
<tr><th>Joint honours students…</th></tr>
<tr><td>there may be alternative opportunities to study ethical issues in the non-mathematics part of your degree. (Especially for Mathematics and Philosophy students!)</td></tr>
</table>
</td>
<td>
UCIL [Remember to check your programme requirements!]
Students can elect to take UCIL courses on topics including

Creating a Sustainable World
Understanding Mental Health
Equality, Diversity, and Inclusion: Your Role in Shaping a Fairer World
…

Volunteering and Ethical Grand Challenges
Students can find opportunities to volunteer within the local community via the University’s Volunteer hub: https://find-volunteering.manchester.ac.uk/
Students are encouraged to take part in the ethical grand challenges: Sustainability, Social Justice, Workplace Ethics https://www.stellify.manchester.ac.uk/stellify-award/egc/
</td>
</tr>
</table>

<table>
<tr><th>SKILL</th><th>WITHIN THE DEPARTMENT OF MATHEMATICS</th><th>ELSEWHERE IN THE UNIVERSITY</th></tr>
<tr>
<td>SELF-REFLECTION

ACTION PLANNING

NETWORKING</td>
<td>
During your studies
Students engage in reflective practice in:
<table>
<tr><td>MATH20062: Mathematical Communication & Group project</td><td>Mandatory for single honours [Not an option for joint honours]</td></tr>
<tr><td>MATH30002: Mathematics Education</td><td>Optional</td></tr>
</table>
Outside your studies
Students are encouraged to engage with the programme of careers events and activities provided by the Department, which includes CV training (for Y1 students), fairs (Calculating Careers, and Careers in Statistics), employer showcases, and alumni panels.

Our student societies MathSoc, University of Manchester Actuarial Society (UMAS) and Manchester University Data Science Society (MUDSS) also organise networking events and hackathons.
All students are encouraged to create a LinkedIn profile, and to use LinkedIn to connect with alumni.

The Department has a group for current mathematics students:
https://www.linkedin.com/groups/13837118/

Year placement
<table>
<tr><td>Year placement students…</td></tr>
<tr><td>demonstrate practical and transferable skills in a reflective statement</td></tr>
<tr><td>make valuable industry contacts during their year placement</td></tr>
</table>
</td>
<td>
Careers Service resources
The Careers Service can help students to consider their options, interests and make career choices.
www.careers.manchester.ac.uk/whichcareer/
They also offer workshops and networking events to help students meet employers, alumni and help them formulate plans and take action. Events include:

Job hunting workshops;
“Meet the Graduates” panels and events;
Applications and Interviews training;
Networking/ Using LinkedIn workshops

Details of upcoming workshops and events and how to register can be found on CareerConnect:
https://careerconnect.manchester.ac.uk/

The careers service provide more help on their website:
https://www.careers.manchester.ac.uk/

Catch up with missed workshops or sessions on their YouTube Channel playlists
www.youtube.com/c/manchestercareers
</td>
</tr>
</table>

<table>
<tr><th>SKILL</th><th>WITHIN THE DEPARTMENT OF MATHEMATICS</th><th>ELSEWHERE IN THE UNIVERSITY</th></tr>
<tr>
<td>LEADERSHIP</td>
<td>
Outside your studies
The Department of Mathematics does not provide any direct leadership training as part of the curriculum, but there are opportunities for students to develop leadership skills within the department by:

Becoming a PASS leader
Becoming a student representative

<table>
<tr><th>PASS leaders and student representatives…</th></tr>
<tr><td>have the opportunity to network, share experiences and collaborate with others</td></tr>
<tr><td>use their planning & organising, time management and communication skills to effectively liaise with staff and students</td></tr>
<tr><td>help to support, inspire, and energise others</td></tr>
</table>
</td>
<td>
UCIL [Remember to check your programme requirements!]
Students can develop leadership skills through UCIL courses such as:

Leadership In Action Online (MLP)
Leadership of Learning - with Teaching Placement

Other activities
There are a variety of student roles and activities across the university where leadership skills can be developed e.g. through student societies and sporting activities:
Students’ Union and societies
University sports clubs and teams
Sport Volunteer Scheme

Stellify
Students who take part in volunteering and leadership activities are encouraged to apply for the Stellify award:
https://www.stellify.manchester.ac.uk/stellify-award/
</td>
</tr>
</table>

SKILL	WITHIN THE DEPARTMENT OF MATHEMATICS	ELSEWHERE IN THE UNIVERSITY
ADAPTABILITY CONFIDENCE DECISION MAKING INITIATIVE PLANNING AND ORGANISATION RELIABILITY RESILIENCE SELF-AWARENESS TIME MANAGEMENT	**Within your studies** The Department of Mathematics does not provide any direct skills training in these areas as part of the curriculum, but there is an expectation that students should develop these skills throughout their studies. All students meet with their academic advisor to discuss their academic progress and may seek advice on how to develop learning strategies to improve their personal effectiveness. Students can build confidence and develop effective study skills by participation in PASS (Peer-assisted study sessions) http://www.peersupport.manchester.ac.uk/ First year students who need additional support with their academic studies are invited to attend Consolidation classes. Throughout your studies you should develop the ability to… *manage your time and prioritize workloads* *work independently, both within a managed environment and within situations that are individually determined* *take responsibility for improvements in your own work*	**UCIL** [Remember to check your programme requirements!] Students can elect to take UCIL courses, such as 'Communicating with confidence' to help build confidence. **My Learning Essentials and other useful resources** The library provides a skills training programme (My Learning Essentials), including workshops on planning and time management: https://www.library.manchester.ac.uk/using-the-library/students/training-and-skills-support/ The online resource "Building Confidence" is written by University of Manchester staff and students: https://assets.bmh.manchester.ac.uk/i3hs/confidence/#/ Ways to build resilience with these ideas www.careers.manchester.ac.uk/findjobs/skills/resilience/ **Your Careers Service can help…** If you have a particular skill in mind, check out their Transferable Skills pages for ideas to develop these skills and how employers assess job candidates for them https://www.careers.manchester.ac.uk/findjobs/skills/

SKILL	WITHIN THE DEPARTMENT OF MATHEMATICS	ELSEWHERE IN THE UNIVERSITY
COMMERCIAL AWARENESS INNOVATION NEGOTIATION ENTREPRENEURSHIP	*The Department of Mathematics does not provide any direct training or support for students to develop business focused and entrepreneurial skills.* **Within your studies** Students on some programmes have the opportunity to develop commercial awareness skills by studying BMAN units offered by the Business School. Maths with Finance, Mathematics with Financial Maths and Actuarial Science & Maths students… *acquire knowledge of models and procedures of modern financial mathematics as it is applied in banks/broker companies/insurance companies/finance departments.*	**UCIL** [Remember to check your programme requirements!] Students can develop some of these skills through the UCIL courses: • Developing an Entrepreneurial Mindset; • Essential Enterprise; • Entrepreneur: Innovator and Risk-taker **Masood Entrepreneurship Centre** Students interested in starting their own business can benefit from resources provided by the Masood Entrepreneurship Centre: https://masoodentrepreneurshipcentre.startupinfohub.co.uk/ **Careers Service resources** Explore how to build commercial awareness with experience at University www.careers.manchester.ac.uk/findjobs/skills/commercialawareness/

To find out more about the graduate skills employers look for, how they may be assessed when graduates apply for jobs, and further suggestions of opportunities to develop these skills, take a look at the Careers Service's Transferable Skills pages: www.careers.manchester.ac.uk/findjobs/skills/