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Mathematics Summer School 2024

Who is it for?
The School of Computing, Engineering and Built Environment (SCEBE) is running a Mathematics Summer School (MSS). The MSS for 2024 will be delivered online for two weeks (19th – 30th August 2024) using GCU's virtual learning environment (VLE) GCULearn followed by two days of on-campus revision sessions (2nd & 3rd September 2024) before the online exam on the final day of the MSS, 4th September 2024. Lecture notes and supporting materials will be hosted on GCULearn and live online classes will be delivered via Collaborate Ultra.

The MSS is designed for students who have received a conditional offer to join their selected course in Engineering or the Built Environment. Students with an unconditional offer, who would like to update their mathematical knowledge and study skills, may also attend. There will be no cost for attendance at the MSS.

When and Where?
The MSS teaching takes place on weekdays from **Monday 19th until Wednesday 4th September 2024** inclusive with an online examination on **Wednesday 4th September**. Examination times may vary depending on which MSS group you are in and further details will be given in class. The MSS starts each weekday morning at 10 am and details of the daily schedule for your group can be found in the appropriate timetable at the end of this document.

An overview of the structure and content of the MSS will be presented on the first day, **Monday 19th August at 9:30 am**. Note that you must be logged in to Collaborate Ultra 5 - 10 minutes prior to this live overview commencing. The link to access the overview will be emailed to you the week before the MSS and it will be available on GCULearn. Teaching will begin at 10 am, which will be the starting time of all morning teaching sessions for the duration of the MSS. The structure of the MSS groups and topics covered is set out later in this document in the 'Timetables' section.

Teaching and Assessment
Teaching is a mixture of lectures and tutorials and, in general, will take the form of online lecture-style presentations and online tutorials on GCULearn using Collaborate Ultra. Note that for each group the delivery of classes on the Monday and Tuesday of Week 3 will be on-campus (see your timetable for details). During lectures, you are expected to take notes and at tutorials discuss any questions arising from the lecture material. Additionally, you are expected to undertake at least 50 hours of directed independent study (e.g. 3.5 hours

per day on weekdays and 2 hours per day at weekends). You are urged to speak with your lecturer if you have any problems with the material.

The MSS is taught online to the following two groups over a period of 2 ½ weeks:

Level 2 Entry – Engineering
Lecturer: David Hodge (email tbc)

Level 3 Entry – Engineering
Lecturer: Calum Macdonald (cmd9@gcu.ac.uk)

Lecture materials including notes, slides, worked examples and audio recordings of lectures will be made available on GCULearn within the online community (organisation) for each MSS group.

A strict condition of entry to your selected degree programme is that you successfully complete the MSS by demonstrating regular attendance at classes and passing the compulsory online exam. The exam format will vary depending on which MSS group you are enrolled on and further information will be given in class.

- Students applying for Level 2 or Level 3 entry to Engineering programmes must achieve at least 40% to pass the exam.

Resits will only be considered where there are genuine mitigating circumstances.

Attendance
Attendance at lectures and tutorials is mandatory for all compulsory attendees and will be monitored. Anyone who thinks they may experience difficulty attending sessions for reasons such as; caring responsibilities, illness, access to relevant IT equipment, etc. must notify Donna McAlpine by email at Donna.McAlpine@gcu.ac.uk as soon as possible detailing your reasons. Further guidance will then be provided depending on individual circumstances.

Disability
We have taken an inclusive approach in our arrangements for MSS online exams. Our planning has taken into consideration connectivity, family responsibilities and disabilities amongst other factors. Please see later in this document for more information regarding examination arrangements for each MSS group.

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Any student that has disclosed a disability at the application stage has been sent via email information about the Student Wellbeing service. Our Student Wellbeing team are meeting students virtually over the summer period and if any student wants to speak with them regarding their specific circumstances they can email disability@gcu.ac.uk.

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Accessing Maths Summer School Communities

Registration

Access to the online Mathematics Summer School (MSS) communities (organisations) and learning materials on GCULearn will be via a Limited Access Account (LAA) assigned to you by GCU's IT service. You should receive two joining instructions emails from a GCU IT email address the week before the MSS starts or early in the first week of the MSS. One email will contain your unique GCULearn LAA username and the other a GCULearn LAA password - if you are not in receipt of such emails please first check your junk email folder. You should then login to GCULearn using these credentials. If you are unable to locate such an email please email the contact below for assistance. Continuing GCU students or GCU pathways students, attending the MSS, should login to GCULearn using your GCU student credentials (you won't be issued with a LAA).

Please note access to GCULearn by the LAA will be time-limited to two months. On registration for your course you will be provided with a GCU student ID, GCU email address and password. Note that once you become a GCU student it is your GCU student password you should always use and not the LAA password provided to you for the MSS. If you wish to have access to the MSS community (organisation) and notes once you become a registered GCU student please contact the email addresses below and this access can be provided once the MSS has been completed.

If you have any problems completing your GCU registration for the MSS, you should email joanna.marshall@gcu.ac.uk for further assistance.

Accessing GCULearn

GCULearn is a web-based system which supports and provides information (learning materials, assessments, announcements, contacts, etc.) about the modules you are enrolled on at university. It also provides access to features that can help facilitate communication and collaboration with groups/other students in GCULearn. Since GCULearn is used to provide information and display messages about your modules once you become a GCU student you should get into the habit of logging in regularly.

As GCULearn is a web-based system it can be accessed from any computer that is connected to the internet. If using GCULearn from home you will require internet access and browsing software such as Google Chrome or Mozilla Firefox. Once you have opened an internet browser there are two ways to access GCULearn:

1. via the following address: http://blackboard.gcal.ac.uk
2. on the student home page (https://www.gcu.ac.uk/currentstudents) under "Top services" click on the GCULearn link.

When logging in from home you will be asked to Sign On with your personal email address and the LAA password assigned to you by GCU's IT service. Once you have logged in and clicked on the Sign On button, you will then be asked to agree to a Privacy policy about cookies. You should click on the OK button and you will be taken to your GCULearn page.

Accessing MSS communities

Under the Organisations menu tab on GCULearn, the Mathematics Summer School community (organisation) you have been enrolled on will be listed. It will be one of the following two depending on which point of entry you hold an offer for at GCU:

Maths Summer School - Level 2 Entry Engineering

Maths Summer School - Level 3 Entry Engineering

Clicking on the appropriate community link will take you to relevant MSS materials for your course and provide access to online lectures and tutorials.

Accessing MSS lectures and tutorials

A link to the Collaborate Ultra lectures and tutorials will be posted in an announcement within your community on GCULearn and will also be emailed to your personal address. Access to these sessions is allowed up to 15 minutes before the start time to enable students to check their connection.

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Accessing audio recordings, slides, worked examples and more

These materials will be made available via appropriate links within your community on GCULearn. Specific guidance on how to access the material will be provided by MSS lecturers and instructions uploaded to GCULearn.

Browser Recommendations for GCULearn

For Blackboard Learn, Anthology supports Google Chrome™, Mozilla® Firefox®, Apple® Safari®, and Microsoft® Edge® desktop and mobile browsers. All these browsers apply updates automatically for most users. Anthology makes every effort to support the most recent version upon release. For these supported browsers, these are the supported versions:

Google Chrome™, most recent stable version and two preceding versions.

Mozilla® Firefox®, most recent stable version and two preceding versions.

Apple® Safari® for MacOS and iOS, two most recent major versions.

Microsoft® Edge®1 most recent stable version and two preceding versions

Run the browser checker to see whether Blackboard Learn supports your browser. (https://help.blackboard.com/Learn/Student/Ultra/Getting_Started/Browser_Support/Browser_Checker)

Blackboard Learn does not require any specific browser plug-ins, although added content may require plug-ins to view. Recent updates to several browsers have included changes to how the browser handles third-party cookies. These changes may affect tools from other providers that integrate with Blackboard Learn. If you have trouble accessing an integrated tool after a browser upgrade, edit your browser's settings to allow sites to save and read cookie data. You can find instructions for Chrome, Safari, Firefox, and Edge online.

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Maths Summer School Timetables

Level 2 Entry Engineering – Maths Summer School 2024 - Timetable

Date	Topic	Lecture / Tutorial
19 Aug	**Introduction & Overview**	**09:30 – 10:00**
19 Aug	Algebra	Lecture: 10:00 – 11:30 + Lecture: 12:30 – 14:00
20 Aug	Algebra	Tutorial: 10:00 – 11:30 + Lecture: 12:30 – 14:00
21 Aug	Matrices	Lecture: 10:00 – 11:30 + Lecture: 12:30 – 14:00
22 Aug	Matrices Vectors	Tutorial: 10:00 – 11:30 + Lecture: 12:30 – 14:00 + Lecture 14:30 – 15:30
23 Aug	Vectors	Lecture: 10:00 – 11:30 + Tutorial: 12:30 – 14:00
26 Aug	Complex Numbers	Lecture: 10:00 – 11:30 + Lecture: 12:30 – 14:00
27 Aug	Complex Numbers Differentiation	Tutorial: 10:00 – 11:30 + Lecture (Differentiation): 12:30 – 14:00
28 Aug	Differentiation	Lecture: 10:00 – 11:30 + Tutorial: 12:30 – 14:00
29 Aug	Differentiation Integration	Lecture: 10:00 – 11:30 + Lecture (Integration): 12:30 – 14:00 + Tutorial (Integration): 14:30 – 15:30
30 Aug	Integration	Lecture: 10:00 – 11:30 + Lecture: 12:30 – 14:00
02 Sep	Integration (on-campus) Revision (on-campus)	Tutorial: 10:00 – 11:30 + Tutorial: 12:30 – 14:30
03 Sep	Revision (on-campus)	Tutorial: 10:00 – 12:00 + Tutorial: 13:00 – 15:00
04 Sep	**Exam**	**10:00 – 12:30 (online)**

Contact Hours

Lectures: 15 × 1.5 + 1 × 1 = 23.5 hours; Tutorials: 6 online + 4 on-campus = 16 hours

Total: 39.5 hours

Additional support with the course material is available on weekdays between 10am and 4pm. Students requiring additional support should contact their lecturer to arrange an agreed time.

Online written exam: Available: 10:00 to 12:30 on Wednesday 4th September 2024.

Additional information and lecture materials can be found at the following link : https://www.gcu.ac.uk/study/undergraduate/collegestudents/collegeconnect/summerschool/mathssummerschool

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Level 3 Entry Engineering – Maths Summer School 2024 – Timetable

Date	Topic	Lecture / Tutorial
19 Aug	**Introduction & Overview**	**9:30 – 10:00**
19 Aug	Partial Differentiation	Lecture: 10:00 – 11:30 + Lecture: 12:30 – 14:00
20 Aug	Partial Differentiation Ordinary Differential Equations	Tutorial: 10:00 – 11:30 Lecture: 12:30 – 14:00
21 Aug	Ordinary Differential Equations	Lecture: 10:00 – 11:30 + Tutorial: 12:30 – 14:00
22 Aug	Ordinary Differential Equations	Lecture: 10:00 – 11:30 + Lecture: 12:30 – 14:00 + Tutorial: 14:30 – 15:30
23 Aug	Laplace Transforms	Lecture: 10:00 – 11:30 + Lecture: 12:30 – 14:00
26 Aug	Laplace Transforms	Tutorial: 10:00 – 11:30 + Lecture: 12:30 – 14:00
27 Aug	Laplace Transforms	Lecture: 10:00 – 11:30 + Tutorial: 12:30 – 14:00
28 Aug	Laplace Transforms	Lecture: 10:00 – 11:30 + Lecture: 12:30 – 14:00
29 Aug	Linear Systems of ODEs	Lecture: 10:00 – 11:30 + Lecture 12:30 – 14:00 + Tutorial: 14:30 – 15:30
30 Aug	Linear Systems of ODEs	Lecture: 10:00 – 11:30 + Lecture: 12:30 – 14:00 + Tutorial: 14:30 – 15:30
02 Sep	Revision (on-campus)	Tutorial: 10:00 – 12:00 + Tutorial: 13:00 – 15:00
03 Sep	Revision (on-campus)	Tutorial: 10:00 – 12:00 + Tutorial: 13:00 – 15:00
04 Sep	**Exam**	**10:00 – 12:30 (online)**

Contact Hours

Lectures: 16 × 1.5 = 24 hours; Tutorials: 7 online + 4 on-campus = 17 hours

Total: 41 hours

Additional support with the course material is available on weekdays between 10am and 4pm. Students requiring additional support should contact their lecturer to arrange an agreed time.

Online Mobius exam: Available: 10:00 to 12:30 on Wednesday 4th September 2024.

Additional information and lecture materials can be found at the following link :

https://www.gcu.ac.uk/study/undergraduate/collegestudents/collegeconnect/summerschool/mathssummerschool