UNIVERSITY OF LEICESTER

Programme Specification (Undergraduate)

FOR ENTRY YEAR: 2027/28

Date created: 28/11/2024 **Last amended:** 15/10/2026 **Version no.** 2
Date approved by EQED: Click or tap here to enter text.

1. Programme title(s) and code(s):

STEM Foundation Year

The STEM Foundation Year programme provides progression onto BSc / Integrated Masters degrees in Chemistry, Computer Science, Creative Computing, Engineering, Environmental Science, Geography, Geology, Mathematics, Mathematics with Data Science and Artificial Intelligence, and Physics. It is not available as a stand-alone award.

This specification should be read in combination with the specification for the degree to which a student intends to progress for the full course structure, content and other information such as accreditation.

a) HECOS Code

Chemistry with foundation year	100417
Computer Science with foundation year	100366
Creative Computing with foundation year	100368
Engineering with foundation year	100184
Environmental Science with foundation year	100381
Geography with foundation year	100409
Geology with foundation year	100395
Mathematics with foundation year	100403
Mathematics with Data Science and Artificial Intelligence	
Physics with foundation year	100425

b) UCAS Code

Chemistry with foundation year	F991
Computer Science with foundation year	G991
Creative Computing with foundation year	G993
Engineering with foundation year	H991
Environmental Science with foundation year	XNNN
Geography with foundation year	F992
Geology with foundation year	F993
Mathematics with foundation year	G992
Mathematics with Data Science and Artificial Intelligence	G994
Physics with foundation year	F995

2. Awarding body or institution:

University of Leicester

3. a) Mode of study

Full-time

b) Type of study

Campus-based

4. Registration periods:

The STEM Foundation Year will count towards the normal and maximum registration period of the degree programme that a student may progress to.

The normal period of registration for the STEM Foundation Year is one year (progressing to a 3 or 4 year UG degree).

The maximum period of registration for the STEM Foundation Year is 2 years.

5. Typical entry requirements

A-level: BCC/CCC or points equivalent from best three A-levels, to include appropriate subject(s) For the Computer Science and Creative Computing pathways a science subject is preferred but not required.

BTEC Diploma: DDM in an appropriate scientific or engineering discipline.

Access to HE courses in Science and Engineering: 45 L3 credits, including 24 at Distinction.

International equivalents of the above.

Students must be at least 17 on the programme start date.

The STEM Foundation Year is designed to provide a route to higher education for applicants who do not have the necessary entry requirements for first year entry to the undergraduate programmes.

6. Accreditation of Prior Learning

Not applicable

7. Programme aims

The programme aims to:

- Develop the professional attributes and study skills that will equip students to thrive in an undergraduate degree programme and beyond
- Enable students to progress to an appropriate undergraduate programme through the acquisition of discipline specific knowledge at the required standard

8. Reference points used to inform the programme specification

- QAA Benchmarking Statements
- Framework for Higher Education Qualifications (FHEQ)
- UK Quality Code for Higher Education
- Education Strategy
- University Assessment Strategy [login required]
- University of Leicester Periodic Developmental Review Reports
- External Examiners' reports (annual)

- United Nations Education for Sustainable Development Goals
- Student Destinations Data
- Specification documents for various A-level mathematics qualifications
- Specification documents for various A-level science (Physics, Chemistry, Geography, Geology, Computer Science) qualifications

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9. Programme Outcomes

Unless otherwise stated, programme outcomes apply to all awards specified in 1. Programme title(s).

a) Knowledge and Critical Understanding

i) Competence in an appropriate body of knowledge

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: recall and apply discipline-specific knowledge to solve problems and draw appropriate conclusions.	Lectures Workshops Course texts/specially-prepared resources Small-group tutorials	Workshop problems Core learning exercises Group work/Peer learning in sessions Tutorial problems Mock exam	Core Learning Exercises/Portfolio End-of-Module Exams

ii) Breadth of knowledge

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: apply mathematical techniques to solve discipline-specific problems	Lectures Workshops Course texts/specially-prepared resources Small-group tutorials	Workshop problems Core learning exercises Group work/Peer learning in sessions Tutorial problems Mock exam	Portfolio End-of-Module Exams

iii) Understanding of source materials

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: evaluate the reliability of information and numerical data	Lectures Workshops/Labs Course texts/specially-prepared resources VLE instructions/recordings Small-group tutorials	Workshop problems/Lab problems Group work/Peer learning in sessions Academic Integrity training Presentation research	Core learning exercises/Lab reports Presentation
Students should be able to: use electronic resources to find and evaluate information	Lectures VLE instructions/recordings	Academic Integrity training Presentation research	Presentation

b) Cognitive and Practical Skills

i) Selection and analysis of sources

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: evaluate the reliability of information and numerical data	Lectures Workshops/Labs Course texts/specially-prepared resources VLE instructions/recordings Small-group tutorials	Workshop problems/Lab problems Group work/Peer learning in sessions Academic Integrity training Presentation research	Core learning exercises/Lab reports Presentation

ii) Critical engagement

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: record and reflect on their learning experiences	VLE instructions/recordings Small-group tutorials	Group work/Peer learning in sessions Mock exam marking Tutorial engagement	Reflective Statement

iii) Presentation of an argument

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: use IT to summarise and communicate ideas, in verbal form	VLE instructions/recordings Small-group tutorials	Guided Independent study Practice Presentations	Presentation

iv) Independent research

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: use electronic resources to find and evaluate information	Lectures VLE instructions/recordings	Academic Integrity training Presentation research	Presentation

v) Relevant technical skills

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: recognise and describe patterns in data	Lectures Workshops/Labs Course texts/specially-prepared resources Small-group tutorials	Workshop problems/Lab problems Core learning exercises Group work/Peer learning in sessions	Core Learning Exercises/Portfolio Lab/Project reports End-of-Module Exams

Students should be able to: use IT to process data	Workshops/Labs Course texts/specially-prepared resources	Workshop problems/Lab problems Group work/Peer learning in sessions	Core learning exercises/Lab reports

vi) Autonomous working

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: demonstrate the ability to work autonomously	Induction sessions Assessment Planner	Core learning exercises Revision Notes Guided Independent study	Presentation Reflective Statement

vii) Presentation of research findings

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: use IT to summarise and communicate ideas, in verbal form	VLE instructions/recordings Small-group tutorials	Guided Independent study Practice Presentations	Presentation

c) Transferable skills

i) Verbal, written and digital communication

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: use IT to summarise and communicate ideas, in verbal form	VLE instructions/recordings Small-group tutorials	Guided Independent study Practice Presentations	Presentation
Students should be able to:	Lectures Workshops	Workshop problems Core learning exercises	Core Learning Exercises/Portfolio End-of-Module Exams

communicate discipline-specific ideas, in written form	Course texts/specially-prepared resources Small-group tutorials	Group work/Peer learning in sessions Revision Notes Tutorial problems Mock exam	

ii) Numeracy

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: apply mathematical techniques to solve discipline-specific problems	Lectures Workshops Course texts/specially-prepared resources Small-group tutorials	Workshop problems Core learning exercises Group work/Peer learning in sessions Tutorial problems Mock exam	Portfolio End-of-Module Exams

iii) Self-reflection

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: record and reflect on their learning experiences	VLE instructions/recordings Small-group tutorials	Group work/Peer learning in sessions Mock Exam Marking Tutorial engagement	Reflective Statement

iv) Problem solving

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to:	Lectures	Workshop problems	Portfolio

apply mathematical techniques to solve discipline-specific problems	Workshops Course texts/specially-prepared resources Small-group tutorials	Core learning exercises Group work/Peer learning in sessions Tutorial problems Mock exam	End-of-Module Exams

v) Organisation and management

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: engage in professional practices such as effectively managing their time and workload, organising their course materials and revision notes, maintaining consistent engagement with sessions and seeking support as necessary	Induction sessions Course texts/specially-prepared resources Assessment Planner	Induction activities Workshop engagement Assessment Planner record-keeping Revision Notes Tutorial engagement	Reflective Statement End-of-module Exams

vi) Teamwork

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: work in groups to solve discipline-specific problems	Workshops Small-group tutorials	Workshop engagement Tutorial engagement	Portfolio Engagement

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10. Progression points

This programme follows the standard Scheme of Progression set out in Senate Regulations – see the version of Senate Regulation 5 governing undergraduate programmes relevant to the year of entry.

The following additional award requirements for this programme have been approved.

Progression from Year 0 to Year 1:

Students are required to achieve a mark of at least 40% in **all** STEM Foundation Year modules within their stream, and to meet any School-specific progression requirements as detailed in the module specification(s) and in the table below.

Degree Programme	School-Specific Progression Requirements
Chemistry *BSc with Foundation Year*	In addition to achieving a module mark of at least 40% in FS0030, a mark of at least 40% must be obtained in the FS0030 exam. In addition to achieving a module mark of at least 40% in CH0062, at least six out of eight practical sessions and associated write-ups must be completed.
Computer Science *BSc with Foundation Year*	None
Creative Computing *BSc with Foundation Year*	None
Engineering *BEng with Foundation Year*	In addition to achieving a module mark of at least 40% in FS0071, a mark of at least 40% must be obtained in the FS0071 exam.
Environmental Science *BSc with Foundation Year*	In addition to achieving a module mark of at least 40% in CH0062, at least six out of eight practical sessions and associated write-ups must be completed.
Geography *BSc with Foundation Year*	In addition to achieving a module mark of at least 40% in CH0062, at least six out of eight practical sessions and associated write-ups must be completed.
Geology *BSc with Foundation Year*	In addition to achieving a module mark of at least 40% in CH0062, at least six out of eight practical sessions and associated write-ups must be completed.
Mathematics *BSc with Foundation Year*	In addition to achieving a module mark of at least 40% in FS0071, a mark of at least 40% must be obtained in the FS0071 exam.
Mathematics with Data Science and Artificial Intelligence *BSc with Foundation Year*	In addition to achieving a module mark of at least 40% in FS0071, a mark of at least 40% must be obtained in the FS0071 exam.
Physics *BSc with Foundation Year*	In addition to achieving a module mark of at least 40% in FS0071, a mark of at least 40% must be obtained in the FS0071 exam.

Compensation is not permitted on the STEM Foundation Year.

Semester 1 Review:

Following the Semester 1 Panel, each student's academic profile will be reviewed. Where a student is not in a position to meet the progression requirements of the programme, they will be informed of their available options.

Reassessment:

Resits will **normally** be offered for all modules, except for certain coursework assessment components, as detailed in the module specifications.

No reassessment is offered for the following lab-based modules:

- FS0023 Laboratory Skills
- FS0024 Engineering Principles and Experimentation
- CH0062 Introductory Chemistry Practical

Discretion may be given by the Board of Examiners, who can request (re)submission of one or more assessed coursework elements of a lab module, where it is possible for students to pass the module by either improving their mark in individual coursework elements and/or by meeting a progression requirement. There are no resit opportunities for missed practical work.

Reassessment will ordinarily be offered on one occasion only.

Transfer Options:

A student who achieves a mark of at least 40% in each of the modules in their stream, but fails to meet the School-specific progression requirements described above after reassessment, may be offered a transfer to another course with alternative progression requirements, at the discretion of the School. Transfers are permitted only to courses with fewer progression requirements, or progression requirements which are equivalent to those which have been met.

In cases where a student has failed to meet a requirement to progress, and there is no offer to transfer to another course, the student will be required to withdraw from the course.

Upon progression to Year 1, students may be eligible to transfer to any undergraduate degree offered by the School, within their discipline.

A foundation certificate is available on request to any student who achieves a pass mark of at least 40% on every module in the Foundation Year but does not progress to Year 1 of the degree programme.

11. Research-inspired Education

Students on this programme will advance through the four quadrants of the University of Leicester Research-inspired Education Framework as follows:

RiE Quadrant	Narrative
	Students on the STEM Foundation Year engage with the Research-inspired Education Framework in a way that prepares them for their progression in their discipline-specific integrated degrees.
Research-briefed Bringing staff research content into the curriculum.	•Research-briefed: Foundation Year modules incorporate staff research and recent developments in STEM fields. Students encounter authentic research content in all streams.
Research-based	•Research-based: Structured inquiry activities, such as lab experiments and guided research, develop students' skills in exploring existing knowledge. These

Framed enquiry for exploring existing knowledge. **Research-oriented** Students critique published research content and process. **Research-apprenticed** Experiencing the research process and methods; building new knowledge.	experiences provide a foundation for more advanced research tasks in their chosen disciplines. •Research-oriented: Students critique and analyse published research through presentations and data analysis tasks. These activities nurture critical thinking and familiarise students with the research process, preparing them for independent inquiry. •Research-apprenticed While opportunities to undertake original research are limited in the Foundation Year, students gain foundational skills and insights, enabling deeper engagement in research and innovation as they progress further in their degree programmes. The STEM Foundation Year serves as a springboard, introducing students to research culture and inquiry-based learning while building transferable skills. As students advance to their respective Schools, they engage further with discipline-specific research opportunities, projects, and creative activities.

As part of studying at a research-intensive university, students on this programme have the following extra or co-curricular opportunities available to them to gain exposure to research culture:

As per undergraduate years 1 to 4

Teaching on this programme will be research-informed (it draws consciously on systematic inquiry into the teaching and learning process itself) in the following way:

The School supports all staff involved in teaching to gain an accredited Higher Education teaching qualification, in which they demonstrate their use of teaching theory to support their own practice and reflect on their current teaching and continuing professional development. The programme incorporates teaching strategies grounded in educational research, such as active learning, collaborative problem-solving, and formative assessment techniques, ensuring effective student engagement and knowledge retention. Educators on the programme draw on scholarship in STEM education research, such as best practices for teaching complex concepts in engineering, computational thinking, or mathematical reasoning, to refine their approach and support diverse learning needs.

Some teaching staff are actively engaged in research within their fields, and their expertise and ongoing projects inform classroom teaching/tutoring, supporting a connection between education and professional research practices.

The programme design is informed by continuous feedback and systematic review, using data from student performance, engagement, and feedback to refine teaching approaches and materials.

11b. Some of the programmes to which students may progress from this foundation year carry professional accreditation. Please see the relevant programme specification for detail. Please note that the accreditation applies only to the degree to which a student progresses. The foundation year alone does not carry independent professional accreditation.

12. Indications of programme quality

The teaching methodology for the STEM Foundation Year programme has been informed from established foundation year programmes within the university, and nationally.

13. External Examiner(s) reports

The details of the External Examiner(s) for this programme and the most recent External Examiners' reports for this programme can be found at exampapers@Leicester [log-in required].

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Appendix 1: Programme structure (programme regulations)

The University regularly reviews its programmes and modules to ensure that they reflect the current status of the discipline and offer the best learning experience to students. On occasion, it may be necessary to alter particular aspects of a course or module.

Updates to the programme

Academic year	Module	Change
2026/27	FS0071 Mathematical Methods	New 30 credit module replacing Mathematics 1; Mathematics 2
2026/27	FS0072 Mechanics	New 30 credit core module replacing Mechanics 1; Mechanics 2
2026/27	FS0073 Exploring Matter and Processes	New 30 credit core module on Physics and Engineering streams
2026/27	Electromagnetism and Quantum Physics	Module removed from Physics and Engineering streams
2026/27	Waves and Matter	Module removed from Physics and Engineering streams

Stream 1: Geoscience

Credit breakdown

Status	**Year long**	**Semester 1**	**Semester 2**
Core	60 credits	15 credits	45 credits
Optional	n/a	n/a	n/a

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Year long	FS0030	Fundamental Mathematics	15 credits
Sem 2	CH0062	Introductory Chemistry Practical	15 credits
Sem 2	FS0033	Introductory Data Analysis	15 credits
Sem 1	FS0061	Scientific Computing	15 credits
Sem 2	GY0011	Principles of Earth Science and Earth Systems	15 credits
Year long	FS0045	Introductory Earth and Environmental Science	30 credits
Year long	FS0050	Academic Support	15 credits

Stream 2: Chemistry

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	30 credits	45 credits	45 credits
Optional	n/a	n/a	n/a

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Sem 1	CH0065	Introduction to Chemistry 1	15 credits
Year long	FS0030	Fundamental Mathematics	15 credits
Sem 1	FS0043	Waves and Matter	15 credits

Delivery period	Code	Title	Credits
Sem 2	CH0062	Introductory Chemistry Practical	15 credits
Sem 2	CH0066	Introduction to Chemistry 2	15 credits
Sem 2	FS0033	Introductory Data Analysis	15 credits
Sem 1	FS0061	Scientific Computing	15 credits
Year long	FS0050	Academic Support	15 credits

Stream 3: Physics

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	120	n/a	n/a
Optional	n/a	n/a	n/a

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Year long	FS0071	Mathematical Methods	30 credits
Year long	FS0072	Mechanics	30 credits
Year long	FS0073	Exploring Matter and Processes	30 credits
Year long	FS0023	Laboratory Skills	15 credits
Year long	FS0050	Academic Support	15 credits

Stream 4: Engineering

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	120	n/a	n/a
Optional	n/a	n/a	n/a

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Year long	FS0071	Mathematical Methods	30 credits
Year long	FS0072	Mechanics	30 credits
Year long	FS0073	Exploring Matter and Processes	30 credits
Year long	FS0024	Engineering Principles and Experimentation	15 credits
Year long	FS0050	Academic Support	15 credits

Stream 5: Mathematics

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	105 credits	n/a	15 credits
Optional	n/a	n/a	n/a

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Sem 2	FS0033	Introductory Data Analysis	15 credits
Year long	FS0071	Mathematical Methods	30 credits
Year long	FS0072	Mechanics	30 credits
Year long	FS0060	Introduction to Programming	30 credits
Year long	FS0050	Academic Support	15 credits

Stream 6: Computing

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	75 credits	15 credits	30 credits
Optional	n/a	n/a	n/a

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Sem 1	FS0062	Introductory Linux	15 credits
Sem 2	FS0033	Introductory Data Analysis	15 credits
Sem 2	FS0064	The Digital World	15 credits
Year long	FS0050	Academic Support	15 credits
Year long	FS0060	Introduction to Programming	30 credits
Year long	FS0070	Computational Mathematics	30 credits

Appendix 2: Module specifications

See undergraduate module specification database [log-in required] (Note - modules are organized by year of delivery).

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Appendix 3: Research-inspired Education: Module Mapping Matrix

Please refer to the Research-inspired Education guidance when completing the sections below. ***This is an internally-facing document which will not be shared directly with prospective or future students.***

Sub-section i: Articulation of research-inspired components within taught modules.

RiE Quadrant	Module code and name	Core[1]	How the module delivers this aspect of the RiE quadrant (one or two sentences)
Research-briefed Bringing staff research content into the curriculum.	FS0024 Engineering Principles and Experimentation FS0033 Introductory data Analysis FS0043 Waves and Matter FS0073 Exploring Matter and Processes FS0064 The Digital World GY0011 Principles of Earth Science and Earth Systems	Core	*Foundation Year modules incorporate staff research and/or recent developments in STEM fields. Students encounter authentic research content in lectures across all streams.*

RiE Quadrant	Module code and name	Core[2]	How the module delivers this aspect of the RiE quadrant (one or two sentences)
Research-based Framed enquiry for exploring existing knowledge.	CH0062 - Introductory Chemistry Practical FS0023 - Laboratory Skills FS0024 - Engineering Principles and Experimentation	Core	*Structured inquiry activities, in the form of lab experiments, develop students' skills in exploring existing knowledge. These experiences provide a foundation for more advanced research tasks in their chosen disciplines.*
	FS0045 Introductory Earth and Environmental Science	Core	*Structured inquiry activities in the form of guided research develop students' skills in exploring existing knowledge. These experiences provide a foundation for more advanced research tasks in their chosen disciplines.*

RiE Quadrant	Module code and name	Core[3]	How the module delivers this aspect of the RiE quadrant (one or two sentences)
Research-oriented Students critique published research content and process.	FS0045 Introductory Earth and Environmental Science FS0050 Academic Support	Core	*Students critique and analyse published research through presentations. These activities nurture critical thinking and familiarise students with the research process, preparing them for independent inquiry.*
	FS0033 Introductory Data Analysis	Core	*Students critique and analyse published research through data analysis tasks. These activities nurture critical thinking and familiarise students with the research process, preparing them for independent inquiry.*

	FS0064 The Digital World	Core	*Students critique and analyse published research through presentations, and data analysis tasks. These activities nurture critical thinking and familiarise students with the research process, preparing them for independent inquiry.*

RiE Quadrant	Module code and name	Core[4]	How the module delivers this aspect of the RiE quadrant (one or two sentences)
Research-apprenticed Experiencing the research process and methods; building new knowledge.			

Sub-section ii: Articulation of plans / intentions for development of Research-Inspired Education beyond the existing provision. *Please capture any future ideas that are not already happening in the box below. This is an optional section and will not be subject to review.*
