

Title of Programme: Initial Year in Science and Engineering (HIC), Initial Year in Physics,
Astronomy and Maths (HIC), Initial Year in Computer Science (HIC)

Programme Code: HICIYEN / HICIYRAI / HICIYMM / HICIYPHY / HICIYCS / HICIYDT

For Collaborative: External Validation at Hertfordshire International College

Programme Specification

This programme specification is relevant to students entering:
23 September 2024

Associate Dean of School (Academic Quality Assurance):
Mariana Lilley

Signature



A programme specification is a collection of key information about a programme of study (or course). It identifies the aims and learning outcomes of the programme, lists the modules that make up each stage (or year) of the programme, and the teaching, learning and assessment methods used by teaching staff. It also describes the structure of the programme, its progression requirements and any programme-specific regulations. This information is therefore useful to potential students to help them choose the right programme of study, to current students on the programme, and to staff teaching and administering the programme.

Summary of amendments to the programme:

Section	Amendment

If you have any queries regarding the changes please email AQO@herts.ac.uk

Programme Specification

Initial Year in Science and Engineering (HIC), Initial Year in Physics, Astronomy and Maths (HIC), Initial Year in Computer Science (HIC)

This programme specification (PS) is designed for prospective students, enrolled students, academic staff and potential employers. It provides a concise summary of the main features of the programme and the intended learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the teaching, learning and assessment methods, learning outcomes and content for each module can be found in Definitive Module Documents (DMDs) and Module Guides.

Section 1

Awarding Institution/Body	University of Hertfordshire
Teaching Institution	Hertfordshire International College
University/partner campuses	College Lane, Hatfield
Programme accredited by	Not applicable
Final Qualification	Not applicable
All Final Award titles (Qualification and Subject)	Not applicable
FHEQ level of award	0

A. Programme Rationale

The partnership between the College and University of Hertfordshire facilitates the acquisition of an undergraduate degree by international students who, because of their previous educational experience, are not normally able to gain direct access to the University's degree courses. The pathway has therefore been developed to satisfy important pedagogical issues:

1. To ensure that international students have a dedicated period of time, in a familial and safe setting, to adjust to and acquire the skills to prepare for further studies within a western learning environment.
2. To satisfy the University's quality protocols, which in turn are directed by the QAA Subject Benchmark requirements, for articulation purposes.
3. Facilitate access to a pathway leading to a University degree award.
4. Widen access and participation in higher education in line with the University's internationalisation agenda.
5. Commit to the provision of best practice customer service and student experience for international students and thus add value to the University's award winning student lifestyle.
6. Support the integrity of the University's QAA commitment by adopting and adapting the University's quality regime to form the basis of a robust, quality driven academic provision and administrative systems and processes.
7. Assist in the diversification of the student body.

B. Educational Aims of the Programme

Diversity and Inclusion

Our programmes are purposefully designed to enable all students to engage meaningfully with the curriculum by being accessible and representative. We will support students to shape their learning experience, removing barriers and enabling them to succeed. The curriculum explicitly includes multiple and representative perspectives, valuing collective identities and individual diversity. Learning, teaching and assessment activities help students to understand how they can enhance outcomes both for themselves and

for others. All students belong to a learning community, and during their studies we really want to hear their voices, encourage them to listen to others, and express themselves.

The programme has been devised in accordance with the University's graduate attributes of programmes of study as set out in [UPR TL03](#).

Additionally this programme aims to:

1. Prepare students, who would not normally be considered qualified, to an appropriate standard for entry into the University of Hertfordshire, School of Physics, Engineering and Computer Science, at NQF Level 4 of the prescribed undergraduate degree schemes.
2. To endow each individual with an educational pathway that augments opportunities for professional employment and development in the engineering sector at both a national and international level.
3. Develop in students a fundamental knowledge that can demonstrate an understanding of the skills and appropriate techniques in engineering so as to support their transfer into NQF Level 4 of the prescribed degree schemes.
4. Develop in students an appreciation and desire to learn based on competent intellectual and practical skills building to a set of transferable skills that will support them in all aspects of their onward academic studies/careers and assist informed decision making.
5. Ensure that students have attained the prescribed level of inter-disciplinary language competence described as Level B2 'Independent User' by the Council of Europe, see Common European Framework of Reference for languages: Learning, teaching assessment 2001, Council of Europe, CUP, Cambridge, p. 24, Table 1. Common Reference Levels: global scale.
6. Ensure that graduates have attained the prescribed level of inter-disciplinary language competence to a minimum pass mark of 50% in the ACL accredited module Interactive Learning Skills and Communication, and therein a minimum 6.0 IELTS equivalent.

C. Intended Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills and other attributes in the following areas. The programme outcomes are referenced to the QAA benchmark statements for Engineering (March 2023), Computing (March 2022) and the Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies (2014) and relate to the typical student. Additionally, the SEEC Credit Level Descriptors for Further and Higher Education (2021) have been used as a guiding framework for curriculum design.

Knowledge and Understanding	Teaching and learning methods	Assessment strategy
A1 – Demonstrate knowledge and understanding of the principles underlying the use of materials in engineering applications along with their production, use and control.	Acquisition of knowledge and understanding is through a combination of lectures, workshops, coursework and practical assignments at all levels of the programme.	Knowledge and understanding are assessed through coursework assignments and exams.
A2 - Demonstrate knowledge and understanding of the fundamentals of programming and how it is used and contributes to the engineering and computing process and solves engineering and computing problems.	Throughout, the learner is encouraged to undertake independent study both to supplement and consolidate what is being taught/learnt and to broaden their individual knowledge and understanding of the subject.	Coursework may include time-constrained assessments, in class tests, presentations (individual and group), group work, case studies and written reports or essays.
A3 - Demonstrate knowledge and understanding of the		Assessment, which is both formative and summative, individual and group based spans many forms, e.g. essay assignments, project reports, portfolios,

<p>theories and key concepts of physical science in an interdisciplinary context.</p> <p>A4 - Demonstrate knowledge and understanding of the physical laws and their relevance to engineering principles.</p> <p>A5 - Demonstrate knowledge and understanding of the application of mathematic techniques to the engineering and logical decision making process.</p> <p>A6 - Demonstrate knowledge and understanding of the purpose and processes of object-orientated programming and an introductory understanding of Java.</p> <p>A7- Demonstrate knowledge and understanding of the application of ICT as a fundamental tool for extracting, sourcing, describing and presenting data and information in a variety of relevant forms, and distributing data and information via a range of channels and formats.</p> <p>A8 - Demonstrate knowledge and understanding of the techniques and forms of effective and clear communication in a variety of academic and professional settings.</p>		<p>exhibitions and presentations.</p>
Intellectual skills	Teaching and learning methods	Assessment strategy
<p>B1 - Make full use of library and College/University e-learning search (catalogue and bibliographic) resources.</p> <p>B2 - Apply basic research techniques to sourcing and selecting appropriate academic data and literature.</p> <p>B3 - Integrate oral, written, listening, reading, non-verbal</p>	<p>Intellectual skills are developed through methods and strategies outlined in section A, above.</p> <p>Problem solving skills are further developed through in-course exercises and studio / laboratory work where applicable.</p> <p>Throughout, the learner is encouraged to develop</p>	<p>Intellectual skills are assessed through formative activities in tutorials, and summative coursework throughout. In-class tests and exams are also used to assess intellectual skills. These are clearly identified within the appropriate DMDs.</p>

<p>and diagrammatic skills to effect clear communication.</p> <p>B4 - Ability to analyse data and various modes of information using appropriate techniques.</p> <p>B5- Ability to begin to evaluate and start to apply, reasoned thinking and supportive evidence collation to conflicting sets of information and academic opinion.</p>	<p>intellectual skills further by independent study</p>	<p>Reports provide an opportunity to apply skills in secondary research, analysing data, synthesis of key theoretical literature, examinations of trade information etc. Exams test very specific areas of knowledge within the breadth of the curriculum, and require concentration on specific problems and issues.</p>
<p>Practical skills</p> <p>C1 - Employ key communication skills appropriate to undergraduate study, inclusive of written, oral, reading, speaking, numerical, graphical and diagrammatic manipulation and presentation of information.</p> <p>C2 - Employ analytical skills and methodologies as a basis to further study.</p> <p>C3 - Ability to begin to engage critically with regard to the sciences.</p>	<p>Teaching and learning methods</p> <p>Practical skills are developed through students undertaking individual and group coursework.</p> <p>Throughout, the learner is expected to consolidate their development of practical computing skills by use of computers available in the learning resources centre.</p>	<p>Assessment strategy</p> <p>Practical skills are assessed through group-work, individual project, essay and report assignments and through oral presentations.</p>
<p>Transferable skills</p> <p>D1- Select, read, digest, summarise and synthesise information material in a variety of forms, both qualitative and quantitative (text, numerical data and diagrammatic) and in an appropriate manner to identify and determine key facts/themes and relevancy.</p> <p>D2 - Use and clearly communicate discursive, numerical, statistical and diagrammatic ideas, concepts, results and conclusions using appropriate technical and non-technical language and language style, structure and form.</p>	<p>Teaching and learning methods</p> <p>Transferable skills are developed through the programme by workshops, group-work and individual coursework.</p>	<p>Assessment strategy</p> <p>Transferable skills are assessed through individual and group oral presentations to assess both preparation and delivery, and assessed written assignments.</p>

D3 - Apply basic research and referencing techniques to all aspects of study, information collation, information presentation and formulation of academic opinion.

D4 - Embed the importance of self-study and reliance. This involves cultivating and developing a responsibility within each student to take cognizance for their own learning, initiative, effective time-management and self-discipline within the academic and professional environments.

D5- Begin to develop a very good conceptual understanding and evaluation of the main aspects of the cognate area and the wider context.

D. Programme Structures, Features, Levels, Modules, and Credits

Entry is normally at Level 0 for EU and international students who hold the equivalent of a High School certificate.

Intake is normally in Semester A (September) and Semester B (January)

Professional and Statutory Regulatory Bodies

Not applicable

Work-Based Learning, including Sandwich Programmes

Not applicable

Student Exchange programme

Incoming Exchange

Not applicable

Study Abroad

Not applicable

Programme Structure

The programme structure and progression information below (Table 1a and 1b) is provided for the Honours award. Any interim awards are identified in Table 1b. The Programme Learning Outcomes detailed above are developed and assessed through the constituent modules. Table 2 identifies where each learning outcome is assessed.

Table 1a Outline Programme Structure

Mode of study Full Time

Entry point Semester A or Semester B

Level 0

Initial Year in Science and Engineering (HIC) / Initial Year in Physics, Astronomy and Maths (HIC)

Compulsory Modules Module Title	Module Code	Credit Points	Language of Delivery	% Examination	% Coursework	% Practical	Semesters
Interactive Learning Skills and Communication	0FBS0001	15	English	30	70	0	A, B, C
Principles of ICT	0FTC1029	15	English	60	40	0	A, B, C
Mathematics 1	0FTC1030	15	English	70	30	0	A, B
Physics 1	0FTC1032	15	English	70	30	0	A, B
Mathematics 2	0FTC1031	15	English	70	30	0	B, C
Introduction to Programming	0FTC1035	15	English	50	50	0	B, C
Statistics	0FTC1034	15	English	70	30	0	B, C
Physics 2	0FTC1033	15	English	70	30	0	B, C

Progression to level 4 requires a minimum 120 credits.

Table 1a Outline Programme Structure

Mode of study Full Time

Entry point Semester A or Semester B

Level 0

Initial Year in Computer Science (HIC)

Compulsory Modules Module Title	Module Code	Credit Points	Language of Delivery	% Examination	% Coursework	% Practical	Semesters
Interactive Learning Skills and Communication	0FBS0001	15	English	30	700	0	A, B, C
Principles of ICT	0FTC1029	15	English	60	40	0	A, B, C
Mathematics 1	0FTC1030	15	English	70	30	0	A, B
Business Studies	0FBS0002	15	English	60	40	0	A,B, C
Mathematics 2	0FTC1031	15	English	70	30	0	B, C
Introduction to Programming	0FTC1035	15	English	50	50	0	B, C
Statistics	0FTC1034	15	English	70	30	0	B, C
Introduction to Mass Communications	0FHE1020	15	English	0	100	0	A,B, C

Progression to level 4 requires a minimum 120 credits.

Honours classification

The University has approved structure and assessment regulations common to all programmes. Full details are provided in [UPR AS14](#), Section D.

Table 1b Final and interim awards available

The programme provides the following final and interim awards:

No final award, grade transcript issued by HIC on request

Programme-specific assessment regulations

The programme complies with the University's academic regulations (in particular, [UPR AS11](#), [UPR AS13](#) and [UPR AS14](#)).

Progression routes:

- a) All progression routes outlined below are currently valid; however available progression will be updated on an annual basis in accordance with changes in UH provision.
- b) Entry is to integrated Level 4 delivery.

Awards included in the Articulation Agreement:

Science and Engineering Integrated Level 4 Pathways:

Pathways
BEng (Hons) Aerospace Engineering with Space Technology
BEng (Hons) Aerospace Engineering
BEng (Hons) Aerospace Engineering with Pilot Studies
BEng (Hons) Automotive Engineering
BEng (Hons) Automotive Engineering with Motorsport
BEng (Hons) Civil Engineering
BEng (Hons) Electrical and Electronic Engineering
BEng (Hons) Mechanical Engineering
BEng (Hons) Robotics and Artificial Intelligence
BSc (Hons) Automotive Technology
BSc (Hons) Motorsport Technology

Computer Science Integrated Level 4 Pathways:

Pathways
BSc (Hons) Computer Science
BSc (Hons) Computer Science (Artificial Intelligence)
BSc (Hons) Computer Science (Cyber Security and Networks)
BSc (Hons) Computer Science (Software Engineering)
BSc (Hons) Information Technology

Physics, Astronomy and Maths Integrated Level 4 Pathways:

Pathways
BSc (Hons) Astrophysics
BSc (Hons) Data Science
BSc (Hons) Financial Mathematics
BSc (Hons) Mathematics
BSc (Hons) Physics

For some of the modules listed above that include student presentations, video recordings of these presentations will be made for moderation purposes.

These recordings will be managed in accordance with Navitas' Data Protection & Privacy Policies.

We will share the videos with internal moderators at HIC and external moderators at the University of Hertfordshire securely and destroy these in accordance with our Records Management, Retention and Disposal Policy.

Should you have any questions around this process and privacy please contact privacy@navitas.com.

E. Management of Programme & Support for student learning.

Management

The programme is managed and administered through:

- A Head of Teaching and Learning to help students understand the course / programme structure
- Student Representatives on the College Learning and Teaching Board
- A designated Academic Services Coordinator / Academic and Student Services Officer

Support

Students are supported by:

- Attractive modern study environments in two Learning Resource Centres, incorporating libraries and computer centres
- StudyNet, a versatile on-line inter-active intranet and learning environment
- Moodle, a versatile on-line inter-active intranet and learning environment
- Access to extensive digital and print collections of information resources
- Office of the Dean of Students, incorporating Chaplaincy, Counselling and nursery
- Medical Centre
- Careers Enterprise and Employment Services
- The Students' Union

At HIC, students are supported by:

- An induction week at the beginning of each academic semester
- Module tutors to provide academic support
- A Manager of Academic Services / Manager of Student Services to provide pastoral support and confidential academic and welfare advice
- A College Services Team that provides advice on issues such as finance, accommodation, well-being, welfare, international student support, etc.
- Three Collaborative Partnership Leader's (CPL's) who are the link between the School of Engineering, PAM and Computer Science and HIC and helps to ensure that students have a seamless transition to the School of Physics, Engineering and Computer Science
- Academic Services Officers to deal with day-to-day administration associated with the modules within the programme

F. Other sources of information

In addition to this Programme Specification, the University publishes guidance to registered students on the programme and its constituent modules:

- A Programme (or Student) Handbook;
- A Definitive Module Document (DMD) for each constituent module.

The Ask Herts website provides information on a wide range of resources and services available at the University of Hertfordshire including academic support, accommodation, fees, funding, visas, wellbeing services and student societies.

As a condition of registration, all students of the University of Hertfordshire are required to comply with the University's rules, regulations and procedures. These are published in a series of documents called 'University Policies and Regulations' (UPRs). The University requires that all students consult these documents which are available on-line, on the UPR web site, at: <http://www.herts.ac.uk/secreg/upr/>. In particular, UPR SA07 'Regulations and Advice for Students' Particular Attention - Index' provides information on the UPRs that contain the academic regulations of particular relevance for undergraduate and taught postgraduate students.

In accordance with section 4(5) of the Higher Education and Research Act 2017 (HERA), the UK Office for Students (OfS) has registered the University of Hertfordshire in the register of English higher education providers. The Register can be viewed at: <https://www.officeforstudents.org.uk/advice-and-guidance/the-register/the-ofs-register/>.

G. Entry requirements

For current entry tariff point requirements, please refer to the relevant page for the Course on the HIC (hic.navitas.com) website or on the online prospectus.

The programme is subject to the University's Principles, Policies and Regulations for the Admission of Students to Undergraduate and Taught Postgraduate Programmes (in UPR SA03), along with associated procedures. These will take account of University policy and guidelines for assessing accredited prior certificated learning (APCL) and accredited prior experiential learning (APEL).

If you would like this information in an alternative format please contact:
AskHIC (ask@hic.herts.ac.uk).

Initial Year in Science and Engineering (HIC) / Initial Year in Physics, Astronomy and Maths (HIC)

Table 2: Development of Intended Programme Learning Outcomes in the Constituent Modules

This map identifies where the programme learning outcomes are assessed in the constituent modules. It provides (i) an aid to academic staff in understanding how individual modules contribute to the programme aims (ii) a checklist for quality control purposes and (iii) a means to help students monitor their own learning, personal and professional development as the programme progresses.

Module Title		Programme Learning Outcomes (as identified in section 1 and the following page)																								
		Knowledge & Understanding								Intellectual Skills					Practical Skills			Transferable Skills								
		A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	C1	C2	C3	D1	D2	D3	D4	D5				
Level 0	Interactive Learning Skills and Communication	0FBS0001			x					x	x		x				x				x	x	x	x		
	Principles of ICT	0FTC1029							x	x		x	x	x	x	x					x	x	x	x		
	Mathematics 1	0FTC1030					x			x			x	x	x	x	x	x			x	x		x	x	
	Physics 1	0FTC1032	x		x	x					x	x	x		x	x	x	x	x	x	x	x	x	x	x	
	Mathematics 2	0FTC1031					x				x			x	x	x	x	x	x			x	x		x	x
	Introduction to Programming	0FTC1035			x						x	x	x		x	x	x	x	x			x		x	x	x
	Statistics	0FTC1034					x							x	x	x	x	x	x			x	x		x	
	Physics 2	0FTC1033	x		x	x						x	x	x		x	x	x	x			x	x	x	x	x

Initial Year in Computer Science (HIC)

Table 2: Development of Intended Programme Learning Outcomes in the Constituent Modules

This map identifies where the programme learning outcomes are assessed in the constituent modules. It provides (i) an aid to academic staff in understanding how individual modules contribute to the programme aims (ii) a checklist for quality control purposes and (iii) a means to help students monitor their own learning, personal and professional development as the programme progresses.

		Programme Learning Outcomes (as identified in section 1 and the following page)																						
		Knowledge & Understanding								Intellectual Skills					Practical Skills			Transferable Skills						
Module Title	Module Code	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	C1	C2	C3	D1	D2	D3	D4	D5		
Level 0	Interactive Learning Skills and Communication	0FBS0001			x				x	x		x			x			x	x	x	x			
	Principles of ICT	0FTC1029						x		x		x	x	x	x	x		x	x	x	x			
	Mathematics 1	0FTC1030				x				x			x	x	x	x	x	x	x		x	x		
	Business Studies	0FBS0002						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
	Mathematics 2	0FTC1031					x			x			x	x	x	x	x	x	x		x	x		
	Introduction to Programming	0FTC1035		x				x	x	x	x	x		x		x	x	x	x		x	x		
	Statistics	0FTC1034					x							x	x	x	x	x	x		x	x		
Introduction to Mass Communications	0FHE1020						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			

KEY TO PROGRAMME LEARNING OUTCOMES

Knowledge and Understanding

- A1. Demonstrate knowledge and understanding of the principles underlying the use of materials in engineering applications along with their production, use and control.
- A2. Demonstrate knowledge and understanding of the fundamentals of programming and how it is used and contributes to the engineering and computing process and solves engineering and computing problems.
- A3. Demonstrate knowledge and understanding of the theories and key concepts of physical science in an interdisciplinary context.
- A4. Demonstrate knowledge and understanding of the physical laws and their relevance to engineering principles.
- A5. Demonstrate knowledge and understanding of the application of mathematic techniques to the engineering and logical decision making process.
- A6. Demonstrate knowledge and understanding of the purpose and processes of object-orientated programming and an introductory understanding of Java.
- A7. Demonstrate knowledge and understanding of the application of ICT as a fundamental tool for extracting, sourcing, describing and presenting data and information in a variety of relevant forms, and distributing data and information via a range of channels and formats.
- A8. Demonstrate knowledge and understanding of the techniques and forms of effective and clear communication in a variety of academic and professional settings.

Intellectual Skills

- B1. Make full use of library and College/University e-learning search (catalogue and bibliographic) resources.
- B2. Apply basic research techniques to sourcing and selecting appropriate academic data and literature.
- B3. Integrate oral, written, listening, reading, non-verbal and diagrammatic skills to effect clear communication.
- B4. Ability to analyse data and various modes of information using appropriate techniques.
- B5. Ability to begin to evaluate and start to apply, reasoned thinking and supportive evidence collation to conflicting sets of information and academic opinion.

Practical Skills

- C1. Employ key communication skills appropriate to undergraduate study, inclusive of written, oral, reading, speaking, numerical, graphical and diagrammatic manipulation and presentation of information.
- C2. Employ analytical skills and methodologies as a basis to further study.
- C3. Ability to begin to engage critically with regard to the sciences.

Transferable Skills

- D1. Select, read, digest, summarise and synthesise information material in a variety of forms, both qualitative and quantitative (text, numerical data and diagrammatic) and in an appropriate manner to identify and determine key facts/themes and relevancy.
- D2. Use and clearly communicate discursive, numerical, statistical and diagrammatic ideas, concepts, results and conclusions using appropriate technical and non-technical language and language style, structure and form.
- D3. Apply basic research and referencing techniques to all aspects of study, information collation, information presentation and formulation of academic opinion.
- D4. Embed the importance of self-study and reliance. This involves cultivating and developing a responsibility within each student to take cognizance for their own learning, initiative, effective time-management and self-discipline within the academic and professional environments.
- D5. Begin to develop a very good conceptual understanding and evaluation of the main aspects of the cognate area and the wider context.

Section 2

Programme management

Relevant QAA subject benchmarking statements	Engineering (March 2023), Computing (March 2022)
Type of programme	Foundation
Date of validation/last periodic review	November 23
Date of production/ last revision of PS	December 2023
Relevant to level/cohort	All students entering September 2024
Administrative School	School of Physics, Engineering & Computer Science
Language of Delivery	English

Table 3 Course structure

Course details			
Course Code	Course Description	HECOS	UCAS
HICIYEN	Initial Year for Extended Degree in Engineering Pathways - HIC	HECoS Code(s)	UCAS Code(s)/N/A
HICIYRAI	Initial Year for Extended Degree in Robotics and Artificial Intelligence - HIC		
HICIYMM	Initial Year for Extended Degree in Mathematics Pathways - HIC		
HICIYPHY	Initial Year for Extended Degree in Physics & Astrophysics - HIC		
HICIYCS	Initial Year for Extended Degree in Computer Science Pathways - HIC		
HICIYDT	Initial Year for Extended Degree in Digital Technology Pathways - HIC		