

**INTO** 



**QUEEN'S  
UNIVERSITY  
BELFAST**

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# **International Foundation Programme Engineering and Science**

## **Student Programme Handbook January Intake 2021/22**

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# 1 PROGRAMME OVERVIEW

- 1.1 The International Foundation Programme in Engineering and Science (IFPES) provides international students who will normally have completed a minimum of 12 years of school education, and who do not yet meet the English language or academic requirements for direct entry into the first year of undergraduate study in the University, with the opportunity to develop the necessary English language and foundational academic knowledge and skills to progress to Year One of an undergraduate degree in the Faculty of Engineering and Physical Sciences<sup>1</sup> or the Faculty of Medicine, Health and Life Sciences<sup>2</sup> at Queen's University Belfast
- 1.2 The programme is delivered in a university environment with the pastoral and language support that is necessary to ensure well-being and success, and where the study programme is focused on preparation for university study.
- 1.3 Students study four modules: two compulsory modules, English Language and Study Skills (ELSS) and Foundation Mathematics; and two optional academic modules, selected from Foundation Biology, Foundation Chemistry, Foundation Physics and Foundation Further Mathematics. Each module is worth 30 credits. Students must attain a total of 120 credits for successful completion of the programme. The English Language and Study Skills module is designed to integrate with and provide support for the three academic modules. An outline of the programme is shown in section 3.5
- 1.4 To gain entry to the International Foundation Programme in Engineering and Science, students must have an acceptable English language qualification equivalent to IELTS 5.0 or higher with at least IELTS 5.0 in writing and no less than 4.5 in all other sub-skills. Students who have met the academic entrance requirements but who do not meet the English language requirement may be accepted on to the Extended International Foundation Programme in Engineering and Science. The Extended International Foundation Programme in Engineering and Science commences with a concentrated period of Academic English (AE). This may be one or two terms in duration, depending on English Language ability on entry, and is designed to bring a student to a level equivalent to IELTS 5.0 or higher with at least IELTS 5.0 in writing and no less than 4.5 in all other component sub-skills. Students following the extended programme must achieve this level in order to continue and undertake the remainder of the Foundation programme. Academic English (AE) does not carry credit and is assessed on a Pass/Fail basis only. However, it is a formal requirement of the course and must be completed satisfactorily.

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<sup>1</sup> Except for Agricultural Technology

<sup>2</sup> Except for Dentistry, Medicine, Social Work

Module	Category	Credits	Progression Routes	Progression Requirements
English Language and Study Skills	Compulsory	30	Undergraduate degree programmes in the Faculty of Engineering and Physical Sciences <sup>3</sup> and the Faculty of Medicine, Health and Life Sciences <sup>4</sup>	<p><u>Academic Modules</u> The module subject and grade requirements set by the University for progression are dependent on the undergraduate degree subject (see Section 6 for details)</p> <p><u>English Language and Study Skills</u> The grade requirements set by the University for progression are dependent on the undergraduate degree subject; progression requirements apply to the overall average score and to individual scores in the reading, writing, listening and speaking sub-skills (see Section 6 for details)</p>
Foundation Mathematics	Compulsory	30		
Foundation Physics	Optional <sup>†</sup>	30		
Foundation Chemistry	Optional <sup>†</sup>	30		
Foundation Biology	Optional <sup>†</sup>	30		
Further Mathematics for Engineering and Science	Optional <sup>†</sup>	30		
†Choose <b>TWO</b> optional modules (choice will depend on preferred progression degree(s) requirements)				

Table 1-1 Outline of International Foundation Programme in Engineering and Science

<sup>3</sup> Except for Agricultural Technology

<sup>4</sup> Except for Dentistry, Medicine, Social Work

## 2 EDUCATIONAL AIMS OF THE PROGRAMME

- 2.1 To provide students with a high quality education and learning experience at pre-undergraduate foundation level.
- 2.2 To prepare students for progression to Year One of undergraduate degree programmes in the Faculty of Engineering and Physical Sciences<sup>5</sup> and the Faculty of Medicine, Health and Life Sciences<sup>6</sup> at Queen's University Belfast.
- 2.3 To enhance the subject knowledge, learning skills and English language proficiency of students to enable them to communicate and study effectively and confidently at undergraduate level.
- 2.4 To assist international students to become accustomed to student life in the UK and to provide practical experience of the learning, teaching and assessment methods found in Queen's University Belfast and in other UK universities.
- 2.5 To cultivate a commitment to good practice in academic work.
- 2.6 To provide students with the necessary personal and key skills to enable them to develop as independent, autonomous learners.
- 2.7 To provide a qualification to allow alternative progression routes for those students who either (i) do not meet the entry criteria for progression to undergraduate degree programmes at Queen's University Belfast, or (ii) who do meet the entry criteria for progression to undergraduate degree programmes at Queen's University Belfast but wish to follow an undergraduate course at another university.
- 2.8 Appendix A summarises the skills that will be developed and learning outcomes attained by studying on the International Foundation Programme.

## 3 STRUCTURE AND MODULES

- 3.1 The International Foundation Programme in Engineering and Science is delivered over a minimum of 24 teaching weeks.
- 3.2 Students study a total of four modules: three academic subject modules and an English Language and Study Skills module.
- 3.3 Two modules, English Language and Study Skills, and Foundation are compulsory (or core) modules; **TWO** modules are chosen from four optional modules Table 3-1. The choice of optional modules will depend on the entry requirements of the preferred progression degree(s).
- 3.4 The timetabled contact time is (an average of) a minimum of 12 hours per week for the subject modules (4 hours per academic module) and (an average of) 8 hours per week for the English Language and Study Skills module.
- 3.5 APPENDIX C gives detailed information on the content and learning outcomes of each of the academic modules listed in Table 3-1 Modules. The module lecturer will give additional detail on the form and structure of the assessments.

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<sup>5</sup> Except for Agricultural Technology

<sup>6</sup> Except for Dentistry, Medicine, Social Work

Code	Title	Credits	Duration	Core	Optional
IFYF001	English Language and Study Skills	30	24 weeks	✓	
IFYF016	Foundation Mathematics	30	24 weeks	✓	
IFYF008	Foundation Physics <sup>†</sup>	30	24 weeks		✓
IFYF009	Foundation Chemistry <sup>†</sup>	30	24 weeks		✓
IFYF010	Foundation Biology <sup>†</sup>	30	24 weeks		✓
IFYF015	Further Mathematics for Engineering and Science <sup>†</sup>	30	24 weeks		✓
<sup>†</sup> <b>TWO</b> optional modules are chosen (the choice will depend on the entry requirements of the preferred progression degree(s))					

Table 3-1 Modules

## 4 MODULE ASSESSMENT

### Formative Assessment

- 4.1 Formative Assessments are any homework or class based exercises which do not count towards your final grade, but which aim to help you monitor your learning and improve your skills in particular areas, or to give you practice for a Summative Assessment.

You will be given feedback on formative coursework that will assist you with your learning. You may be given guidance grades on your performance according to Table 4-1.

Equivalent Percentage Score	Performance Descriptor	Indicative Grade
80+	Outstanding	A*
70 - 79	Excellent	A
60 - 69	Very Good	B
50 - 59	Good	C
40 - 49	Adequate	D
35 - 39	Marginal Fail	E
0 - 34	Unsatisfactory/Poor	F

Table 4-1 Formative Assessment Guidance Marking Scale

## **Summative Assessment**

- 4.2 Summative assessments are those that contribute to the final score of a module. Each subject module will have summative assessments by examination and/or by continuous (coursework) assessment.
- 4.3 The table in APPENDIX B gives the weighted contribution of examination, practical and coursework (continuous) assessments to the overall score for each module in Table 3-1. The module lecturer will further describe and clarify the form(s) of continuous assessment and contribution for each module.

## **Continuous (Coursework) Assessment**

- 4.4 Continuous assessment may take different forms e.g. essays, laboratory reports, written class tests, design assignments, experimental observations, field work, group work, presentations, portfolios or oral tests. There may be one or more continuous assessment component for any module.
- 4.5 Under normal procedures, students can expect to receive a provisional grade and an overview of their performance in a summative assessed coursework. The grades in Table 4-1 will be used to give an indication of your performance. Numerical marks can only be released after they are approved at the end-of-year examination board by the external examiners.
- 4.6 Coursework submitted for summative assessment will be retained by teaching staff for the purposes of internal moderation and external review. Students may instead receive a feedback sheet from their module lecturer.

## **Assessment Submission Regulations**

- 4.7 Students must submit an electronic copy of reports and other documents created on a word-processor (e.g. MS Word) to the Turnitin plagiarism detection service on or before the submission deadline indicated by the module lecturer. It is important that you submit your coursework to the correct class assignment. The submission process is considered incomplete until the electronic copy has been submitted to Turnitin and late submission penalties (see 4.10) will accrue.
- 4.8 Turnitinuk.com is a plagiarism detection service which provides detailed reports on the degree and sources of similarity between a submitted document and an extensive database of sources such as journals, books, etc., and other students' work. Turnitin helps students maintain academic integrity and allows lecturers to identify where plagiarism has occurred. You will be guided through the process of setting up an account on Turnitin during the ELSS module.
- 4.9 You must present work for assessment which has been written by yourself in your own words and which is the result of your own intellectual endeavour. Evidence of academic misconduct in coursework will be treated seriously and may result in you receiving no credit for your work. Serious and/or persistent evidence of impropriety may result in the discontinuation of your programme of study. Each instance of academic misconduct will be recorded on your academic record and may accrue into the duration of your undergraduate degree (see Policy handbook - ACADEMIC MISCONDUCT).

## Late Submission Penalties

- 4.10 Assessed coursework submitted after a deadline will be penalised at the rate of 5% (of the total marks available for the coursework) for each working day after the deadline date, up to a maximum of five working days, after which a mark of zero will be awarded, i.e. day one will incur a penalty of minus 5%; day two will incur a penalty of minus 10% etc. Where the assessed work element accounts for a certain proportion of the module mark, the 5% penalty will apply to the assessed element only and not to the overall module mark.
- 4.11 Each continuous assessment will have a specific marking scheme and maximum mark attainable. The application of a late submission penalty is applied as a proportion of the maximum marks for that piece of coursework e.g. Table 4-2 gives an example of the penalty applied and the subsequent mark awarded where the coursework is scored from 100 marks and awarded 70 marks if submitted by the deadline; Table 4-3 gives an example of the penalty applied and the subsequent mark awarded where the coursework is scored from 20 marks and awarded 14 marks if submitted by the deadline.
- 4.12 A coursework assessment mark may be subsequently scaled to the relevant contribution of the continuous assessment to the final module score e.g. an assessment may be scored from 100 marks, but only represent 10% of the final module grade. In the example shown in Table 4-2, if the coursework has been submitted 2 days late and therefore 60 marks are awarded after the late penalty is applied, the coursework would contribute 6% to final score for the module, rather than 7% if it had been submitted on time.

Coursework Maximum Score: 100		Assessed Score: 70
Days Late	Penalty Applied	Mark Awarded
0	none	70
1	-5	65
2	-10	60
3	-15	55
4	-20	50
5	-25	45
>5	full	0

Table 4-2 Example late submission penalty application for coursework scored out of 100

Coursework Maximum Score: 20		Assessed Score: 14
Days Late	Penalty Applied*	Mark Awarded
0	none	14
1	-1	13
2	-2	12
3	-3	11
4	-4	10
5	-5	9
>5	Full	0

\* 5% of maximum mark of 20 marks is 1 mark

Table 4-3 Example late submission penalty application for coursework scored out of 20

- 4.13 Exemptions shall be granted only if there are exceptional circumstances (see Policy handbook – EXCEPTIONAL CIRCUMSTANCES) and where the student has made a case in writing to the Programme Manager within three working days of the deadline for submission or where a concession has been agreed on the grounds of a student's disability.

### **Examination Assessment**

- 4.14 There will be a 1-week formal examination session at the end of semester 1 during which modules studied during semester 1 will be examined.
- 4.15 There will be a 2-week formal examination session at the end of semester 2 during which modules studied during semester 2 will be examined and the English Language and Study Skills (ELSS) module will be examined.
- 4.16 You are not allowed to take into the examination room any unauthorised book, manuscript, notes or any means whereby you may improperly obtain assistance in your work. All bags, cases or other receptacles should be left in a designated location and not taken to your desk. Small handbags and pencil cases may be left on the floor by the desk. Exceptions to these regulations, for particular examination papers, may be approved by INTO Queen's University Belfast. Details will be printed at the head of the examination question paper. For instance, you may be issued with formula booklets which must be returned at the end of the examination.
- 4.17 Mobile telephones are not permitted in the examination room.
- 4.18 You must only use an approved calculator in continuous assessment exercises and examinations. The use of personal organisers, wearable computing smartphone-type devices, electronic dictionaries or any other electronic device with the capacity for the storage and retrieval of text information is not permitted.
- 4.19 You must sit in the place allocated to you.
- 4.20 You must not use any means to communicate with any other candidate or with other persons either inside or outside the examinations room.
- 4.21 You must not indulge in any behaviour which may disturb or distract other candidates or which may disrupt the progress of an examination. Chiming watches and alarm clocks must be switched off.
- 4.22 You must not use any means to obtain directly or indirectly, assistance in your work or give, or attempt to give, directly or indirectly, any assistance to any other candidate.
- 4.23 The impersonation of examination candidates is prohibited and you must not allow yourself to be impersonated.
- 4.24 You must not remove from the examination room any examination papers, answer books or other items of examination stationery.
- 4.25 You are required to hand your scripts, including any rough work, to the invigilator and to remain seated and in silence until dismissed by the invigilator.
- 4.26 You are not permitted to smoke in an examination room.
- 4.27 No food should be brought into the examination room.
- 4.28 You must obey the instructions of invigilators at all times.

- 4.29 Any suspected breach of the foregoing regulations will be investigated by the Academic Director or his/her nominee. The student(s) concerned will normally be permitted to complete the sequence of examinations. The outcomes of the investigation will be reported to the Board of Examiners which will decide on appropriate action. Confirmed cases of serious misconduct will normally result in failure. Students will be informed in writing of the decision taken by the Board.
- 4.30 Information regarding any online examinations will be made available by Academic Support if applicable.

### External Examiners

- 4.31 The External Examiner system enables INTO Queen's to ensure that it awards qualifications at an appropriate standard and that student performance is judged appropriately. The External Examiner does not carry out marking of assessed work but they may make recommendations if they think any awarded marks do match the marking criteria for a module. The External Examiner has the opportunity to see and comment on all examination papers, examination scripts and other assessed work. They sit on examination boards and their views are taken very seriously. At the end of the academic year, the External Examiner provides a report on the programme and INTO provides a response to any issues raised. Where the External Examiner has raised issues with INTO Queen's, the Academic Director provides a response. You are entitled to see the report for your programme and should ask your Programme Manager how this will be made available. You should not contact the External Examiner directly.

International Foundation Programme in Engineering and Science	External Examiner name and institution
Biology, Chemistry	TBC
Physics, Mathematics, Further Mathematics	Dr Butorac Bozidar, King's College London
English Language and Study Skills	Ms Louise Greener, Durham University

Table 4-4 External Examiners

## 5 FOUNDATION CERTIFICATE AWARD CRITERIA

- 5.1 Successful completion of the International Foundation Programme in Engineering and Science will result in the award of an International Foundation Certificate in Engineering and Science from Queen's University Belfast. This will list all modules taken and grades attained.
- 5.2 In order to be successfully awarded the International Foundation Certificate in Engineering and Science students must accumulate 120 CATS points, comprised of 90 CATS points attained through passing 3 academic subject modules of 30 CATS points each, and 30 CATS points awarded for passing the English Language and Study Skills (ELSS) module. Note that these criteria mean you must **PASS ALL MODULES** i.e. you **CANNOT FAIL ANY MODULE** if the award is to be given. A transcript of your grades will be provided in the case where you are not awarded an International Foundation Certificate.
- 5.3 Candidates must achieve a minimum passing mark of 40% to be awarded the 30 CATS points for an academic subject module.

- 5.4 Candidates must achieve a minimum of 50% overall (equivalent to IELTS 6.0) with a minimum of 40% (equivalent to IELTS 5.5) in each sub-skill (Reading, Writing, Speaking Listening) to be awarded the 30 CATS points for the English Language and Study Skills module.

### **Resit Examinations**

- 5.5 A student who fails a module at the first sitting shall be permitted one further attempt to achieve a pass for that module. The module resit exam will normally be retaken at the next available opportunity. The mark available for resit academic modules will be CAPPED at the module PASS mark of 40% except where special circumstances apply and have been deemed to be exceptional by the Examination Board. Please refer to Policy handbook - EXCEPTIONAL CIRCUMSTANCES for more information on Special Circumstances.
- 5.6 In the case where a student has failed multiple modules, whilst the student will be offered the opportunity to resit all failed modules, the Examination Board may advise the student if it is not in their best interest to resit the modules.

## 6 PROGRESSION CRITERIA

- 6.1 Holders of an International Foundation Certificate in Engineering and Science may progress to Year One of an undergraduate degree programme at Queen's University Belfast *only* if they have achieved, as a minimum requirement, the entry requirements in both academic subject modules and English Language and Study Skills for their chosen undergraduate degree. Table 6-1 gives the entry requirements for the most popular progression degrees
- 6.2 Please note that for each progression degree there are specific academic subject and grade requirements, and specific ELSS average score (English Language and Study Skills) and subskill scores. Some progression degrees (for example BSc Hons Nursing) will depend on the availability of placements and will be based on the normal selection criteria used by Queen's University Belfast. There may also be minimum conditions on performance in certain subjects from high school level. You will be guided in your choice of academic modules during programme induction in order to match your choice to the subject module requirements of your desired undergraduate progression degree.
- 6.3 It is important that you make yourself aware of the specific progression criteria for your preferred degree, as these may be different to those of your fellow classmates.
- 6.4 Queen's University Belfast is responsible for setting the criteria for progression to each degree from the International Foundation Programme. Most undergraduate degrees in the Faculty of Engineering and Physical Sciences or the Faculty of Medicine, Health and Life Sciences at Queen's University Belfast are progression options, with the exception of Agricultural Technology, Medicine, Dentistry and Social Work. The INTO Queen's University Progression Officer (see section 99) can advise you on the entry requirements for all other potential progression degree titles not listed in Table 6-1.
- 6.5 For more information on progression routes and requirements visit <https://www.intostudy.com/en/universities/queens-university-belfast/courses/international-foundation-in-engineering-and-science>
- 6.6 Holders of the International Foundation Certificate in Engineering and Science who do not meet the specified progression requirements for entry to Year One of their chosen undergraduate degree programme, will be advised of other progression options at Queen's by the INTO Queen's University Progression Officer and to other institutions by the INTO Placement Officer (see Section 10 STAFF CONTACT DETAILS).

Degree Subject	Grades Required	Specific Requirements	English level
Aerospace Engineering with a Year in Industry-BEng (Hons)	BBC	BBC (Mathematics and at least one from Physics (preferred), Biology, Chemistry or Further Mathematics) + GCSE Physics grade C or equivalent	C with a minimum of D in each component
Audio Engineering-BSc (Hons)	BBB	BBB including Mathematics and at least one from Physics (preferred), Biology, Chemistry or Further Maths + GCSE Physics Grade C or equivalent	B with a minimum of D in each component
Chemical Engineering-BEng (Hons)	BBC	B (Mathematics) BC (including at least one from Biology, Chemistry or Physics) + GCSE Chemistry and Physics grade C or equivalent	C with a minimum of D in each component
Civil Engineering-BEng (Hons)	BBC	BBC (Mathematics and at least one from Biology, Chemistry or Physics) + GCSE Physics grade C or equivalent	C with a minimum of D in each component
Computer Science with a Year in Industry-BEng (Hons)	BBB or BBC	BBC including Mathematics or BBB including Physics or Chemistry + GCSE Mathematics grade C or equivalent	C with a minimum of D in each component
Computing and Information Technology-BSc (Hons)	BBB	BBB and GCSE Mathematics grade 4/C or equivalent	Grade C with a minimum of grade D in each component
Electrical and Electronic Engineering-BEng (Hons)	BBC	BBC with B in Mathematics and at least one from Physics (preferred), Biology, Chemistry or Further Mathematics, and GCSE Physics grade 4/C or equivalent	Grade C with a minimum of grade D in each component
Food Science and Food Security-MSc (Hons)	ABB	ABB including Biology or Chemistry (preferably both) + GCSE Biology, Chemistry and Mathematics grade C or equivalent	B with a minimum of D in each component
Geography-BSc (Hons)	BBC	BBC + GCSE Mathematics grade C or equivalent	B with a minimum of D in each component
Mechanical Engineering-BEng (Hons)	BBC	BBC with B in Mathematics and at least one from Physics (preferred), Biology, Chemistry or Further Mathematics, and GCSE Physics grade 4/C or equivalent	Grade C with a minimum of grade D in each component
Planning, Environment and Development-BSc (Hons)	BBC	BBC + GCSE Mathematics grade C or equivalent	B with a minimum of D in each component
Product Design Engineering-BEng (Hons)	BBC	BBC (Mathematics and at least one from Physics (preferred), Biology, Chemistry or Further Mathematics) + GCSE Physics grade 4/C or equivalent	C with a minimum of D in each component
Software and Electronic Systems Engineering BEng (Hons)	BBC	BBC (Mathematics and at least one from Physics, Biology, Chemistry or Further Mathematics) + GCSE Physics grade C or equivalent	C with a minimum of D in each component
Zoology (Sandwich) with Professional Studies-MSc (Hons)	ABB	ABB including Biology and preferably Chemistry + GCSE Chemistry and Mathematics grade C or equivalent	B with a minimum of D in each component

Table 6-1 Examples of degree progression routes and requirements

## 7 ACADEMIC CALENDAR

### Semester Dates

- 7.1 The 2021/22 academic year for students beginning their academic studies on the International Foundation Programme in Engineering and Science is organised across 2 semesters. The beginning and end dates of the semesters are given in Table 7-1.
- 7.2 A calendar representation of the academic year is given in

<b>2022</b>	<b>Pathway (JANUARY)</b>
<b>W/C</b>	
<b>10-Jan</b>	<b>Induction</b>
<b>17-Jan</b>	S1-W1
<b>24-Jan</b>	S1-W2
<b>31-Jan</b>	S1-W3
<b>07-Feb</b>	S1-W4
<b>14-Feb</b>	Reading Week
<b>21-Feb</b>	S1-W5
<b>28-Feb</b>	S1-W6
<b>07-Mar</b>	S1-W7
<b>14-Mar</b>	S1-W8
<b>21-Mar</b>	S1-W9
<b>28-Mar</b>	S1-W10
<b>04-Apr</b>	S1-W11
<b>11-Apr</b>	<b>Easter</b>
<b>18-Apr</b>	<b>Easter</b>
<b>25-Apr</b>	<b>Exams</b>
<b>02-May</b>	S2-W1
<b>09-May</b>	S2-W2
<b>16-May</b>	S2-W3
<b>23-May</b>	S2-W4
<b>30-May</b>	S2-W5
<b>06-Jun</b>	S2-W6
<b>13-Jun</b>	S2-W7
<b>20-Jun</b>	S2-W8
<b>27-Jun</b>	S2-W9
<b>04-Jul</b>	S2-W10
<b>11-Jul</b>	S2-W11
<b>18-Jul</b>	<b>Exams</b>
<b>25-Jul</b>	<b>Exams</b>
<b>01-Aug</b>	Internal Boards
<b>08-Aug</b>	External Boards

7.3

<b>15-Aug</b>	Progression
<b>22-Aug</b>	Results Release**
<b>29-Aug</b>	<b>Resit exams</b>
<b>05-Sep</b>	Resit Results**

Table 7-2. Progress reports are sent out mid semester 1, and early in semester 2. Students complete evaluations on the quality of the modules and the programme near the end of semester 2.

### Term Dates and Attendance

- 7.4 Whilst the academic calendar of INTO Queen's and Queen's University Belfast currently operates according to the 2 semester structure shown in Table 7-1 the enrolment and attendance terminology used for INTO programmes still refers to a traditional "3 term" academic year. Term start and end dates in Table 7-1 are determined by both holiday periods and by semester dates.
- 7.5 Students are expected to attend INTO Queen's University Belfast between the beginning and end dates of each term in Table 7-1 *inclusively* i.e. students are expected to be present for classes and assessment or examination sessions from the first day of the beginning of each term and to attend for classes and assessment or examination sessions until the last day of each term, unless there is a set vacation period in the middle of a term. Authorisation will NOT be given to any student requesting late arrival after the start-of-term dates or early departure before the end-of-term dates, as given in Table 7-1, EXCEPT in the case of exceptional circumstances - the availability or pre-booking of cheaper flights is NOT specified as an exceptional circumstance.

		<b>From</b>	<b>To</b>	
<b>Semester 1</b>	<b>Induction week</b>	10 January 2022	14 January 2022	<b>Term 1</b>
	<b>Teaching – 4 weeks</b>	17 January 2022	11 February 2022	
	<b>Reading week (no classes)</b>	14 February 2022	18 February 2022	
	<b>Teaching – 4 weeks</b>	21 February 2022	18 March 2022	
	<b>Teaching – 3 weeks</b>	21 March 2022	8 April 2022	<b>Term 2</b>
	<b>Interim Break</b>	11 April 2022	22 April 2022	
<b>Semester 1 Exams</b>	25 April 2022	29 April 2022		
	<b>Teaching – 6 weeks</b>	2 May 2022	10 June 2022	
<b>Semester 2</b>	<b>Teaching – 5 weeks</b>	13 June 2022	15 July 2022	<b>Term 3</b>
	<b>Semester 2 Exams</b>	18 July 2022	29 July 2022	
	<b>Exam Boards</b>	1 August 2022	12 August 2022	
	<b>Progression</b>	15 August 2022	19 August 2022	
	<b>Results Release</b>	22 August 2022	26 August 2022	
	<b>Re-sit Exams</b>	29 August 2022	2 September 2022	
	<b>Re-sit Results Release</b>	5 September 2022	9 September 2022	

Table 7-1 Semester and Key Dates 2021-22

<b>2022</b>	<b>Pathway (JANUARY)</b>
<b>W/C</b>	
<b>10-Jan</b>	<b>Induction</b>
<b>17-Jan</b>	S1-W1
<b>24-Jan</b>	S1-W2
<b>31-Jan</b>	S1-W3
<b>07-Feb</b>	S1-W4
<b>14-Feb</b>	Reading Week
<b>21-Feb</b>	S1-W5
<b>28-Feb</b>	S1-W6
<b>07-Mar</b>	S1-W7
<b>14-Mar</b>	S1-W8
<b>21-Mar</b>	S1-W9
<b>28-Mar</b>	S1-W10
<b>04-Apr</b>	S1-W11
<b>11-Apr</b>	<b>Easter</b>
<b>18-Apr</b>	<b>Easter</b>
<b>25-Apr</b>	<b>Exams</b>
<b>02-May</b>	S2-W1
<b>09-May</b>	S2-W2
<b>16-May</b>	S2-W3
<b>23-May</b>	S2-W4
<b>30-May</b>	S2-W5
<b>06-Jun</b>	S2-W6
<b>13-Jun</b>	S2-W7
<b>20-Jun</b>	S2-W8
<b>27-Jun</b>	S2-W9
<b>04-Jul</b>	S2-W10
<b>11-Jul</b>	S2-W11
<b>18-Jul</b>	<b>Exams</b>
<b>25-Jul</b>	<b>Exams</b>
<b>01-Aug</b>	Internal Boards
<b>08-Aug</b>	External Boards
<b>15-Aug</b>	Progression
<b>22-Aug</b>	Results Release**
<b>29-Aug</b>	<b>Resit exams</b>
<b>05-Sep</b>	Resit Results**

Table 7-2 Academic Calendar 2021-22

\*\* Results will be released during this week-exact day to be confirmed nearer the time and students will be informed of this.

## Bank and Public Holidays

- 7.6 National holidays are called "Bank and Public Holidays". The centre will be closed on the dates of the Bank and Public holidays listed below in table 7-3.

Bank and Public Holiday	Date
St Patrick's Day	Thursday 17 March 2022
Good Friday	Friday 15 April 2022
Easter Monday	Monday 18 April 2022
Early May Bank Holiday	Monday 2 May 2022
July Holidays	Tuesday 12 and Wednesday 13 July 2022

Table 7-3 Bank and Public Holidays 2021-22

## 8 ACADEMIC TUTORIALS

- 8.1 As an INTO student you will be allocated a personal Academic Tutor for the duration of your programme. Your Academic Tutor will meet with you a number of times each semester, either individually or as part of a small group of tutees, to advise and guide you.
- 8.2 It is intended that your tutorial sessions will help you:
- Become a more effective, independent and confident self-directed learner.
  - Understand how you are learning and relate your learning to a wider context.
  - Articulate your personal goals and evaluate progress towards your achievement.
  - Encourage a positive attitude to learning throughout life
- 8.3 The aim is to help you to begin your studies, to reflect on and learn from feedback you receive, and to become more aware of your own learning style, strengths and weaknesses. Your tutor will discuss your progress and to give you any help or advice on matters relating to your studies or preparing for your university programme.
- 8.4 The tutorials are not a confidential discussion. In order to support you and give you the best possible advice your tutor may need to share information with other relevant members of staff such as the Programme Manager or the Welfare Officer.
- 8.5 Your tutor will contact you with times and dates of meetings.
- 8.6 Table 8-1 Table 8-1 Semester 1 Academic Tutorial Schedule and Table 8-2 Semester 2 Academic Tutorial Schedule outline an example schedule, showing the number and timings of academic tutorial meetings. It is important that you attend all scheduled meetings with your tutor.

Table 8-1 Semester 1 Academic Tutorial Schedule

<b>Week 1-2</b>	Overview of the tutorials process You will find out who your tutor is and they will contact you.
<b>Week 2-4</b>	First group meeting with tutor
<b>Week 6-8</b>	First individual meeting with tutor Bring all assignment feedback sheets and completed tutorial sheet

Table 8-2 Semester 2 Academic Tutorial Schedule

<b>Week 1-2</b>	Second individual meeting with tutor- post exam results
<b>Week 5-8</b>	Third individual meeting with tutor Discussion on progress and exam/assignments marks to date Bring all assignment feedback sheets and examination results Bring all assignment feedback sheets and completed tutorial sheet Discussion on progression options/predicted grades

- 8.7 If you have any problems with the process, please contact your tutor or the Programme Manager.

## 9. STAFF CONTACT DETAILS

Title	Name	Role	email
Ms	Nuala Corr	Centre Director	<a href="mailto:n.corr@qub.ac.uk">n.corr@qub.ac.uk</a>
Mr	Liam O'Hagan	Academic Director	<a href="mailto:l.ohagan@qub.ac.uk">l.ohagan@qub.ac.uk</a>
Ms	Sarah Prince	IFP Programme Manager Biology teacher	<a href="mailto:s.prince@qub.ac.uk">s.prince@qub.ac.uk</a>
Ms	Joanne Hagan	Biology teacher	<a href="mailto:j.hagan@qub.ac.uk">j.hagan@qub.ac.uk</a>
Dr	Mohamed Elshikh	Chemistry teacher	<a href="mailto:m.elshikh@qub.ac.uk">m.elshikh@qub.ac.uk</a>
Dr	Philip Gillespie	Maths teacher	<a href="mailto:p.gillespie@qub.ac.uk">p.gillespie@qub.ac.uk</a>
Dr	Erell Bonnot	Further Mathematics teacher Mathematics teacher Physics teacher	<a href="mailto:e.bonnot@qub.ac.uk">e.bonnot@qub.ac.uk</a>
Mr	Glenn McSpadden	Mathematics teacher	<a href="mailto:g.mcspadden@qub.ac.uk">g.mcspadden@qub.ac.uk</a>
Dr	Marina McLoughlin	ELSS teacher and Learning Support coordinator	<a href="mailto:m.mcloughlin@qub.ac.uk">m.mcloughlin@qub.ac.uk</a>
Ms	Julie McEvoy	Nursing tutor and ELSS teacher	<a href="mailto:j.mcevoy@qub.ac.uk">j.mcevoy@qub.ac.uk</a>
Dr	David Bandy	Academic Support Manager	<a href="mailto:d.bandy@qub.ac.uk">d.bandy@qub.ac.uk</a>
Ms	Tsvety Donova	Attendance Officer	<a href="mailto:t.donova@qub.ac.uk">t.donova@qub.ac.uk</a>
Ms	Aine McComb	Head of Student Services	<a href="mailto:a.mccomb@qub.ac.uk">a.mccomb@qub.ac.uk</a>
Ms	Beverley Quinn	Student Services Coordinator	<a href="mailto:beverley.quinn@qub.ac.uk">beverley.quinn@qub.ac.uk</a>
Ms	Katriona Doran	Student Support Officer	<a href="mailto:katriona.doran@qub.ac.uk">katriona.doran@qub.ac.uk</a>
Ms	Cherri Li	Chinese Language Support Officer	<a href="mailto:cherry.li@qub.ac.uk">cherry.li@qub.ac.uk</a>
Ms	Ciara Murray	Queen's Progression Officer	<a href="mailto:ciara.murray@qub.ac.uk">ciara.murray@qub.ac.uk</a> <a href="mailto:progression@qub.ac.uk">progression@qub.ac.uk</a>

Table 9-1 Staff Contact Details

## 10 GENERAL INFORMATION

- 10.1 The programme is subject to the University General Regulations <http://www.qub.ac.uk/directorates/AcademicAffairs/GeneralRegulations/>
- 10.2 The information in this section is taken from the QUB International student's handbook. Further information can be obtained from the International Office at Queen's University Belfast.

### Access to University Services

- 10.3 Students have access to the INTO Queen's Student Support Services as well as the University Health and Counselling Services, Students' Union, University Careers Service and Student Support Services. Students have access to all University libraries, University open access computer facilities and other resources at the INTO Centre.

## **Library Information**

- 10.4 The University has a number of major libraries which registered students may use. As well as this, the individual schools and institutes have their own collections. Most of the books and pamphlets in the Library can be borrowed, but some categories of material are not available on loan.
- 10.5 In addition to its traditional libraries, the University also has its purpose built interdisciplinary McClay Library specifically designed to meet the needs of undergraduate students. In addition to providing multiple copies of recommended textbooks and course reading, a large number of the study places are equipped with PCs. The computing facilities enable students to use computer-based learning materials; commonly used software such as word processing, spreadsheets and database packages; bibliographic databases; electronic journals and other full-text material; access to the Library's CD-ROM network; and access to the Internet.
- 10.6 All books and journals in all branches of the Library are included in the Library's computer catalogue. There are dedicated terminals in all the branches and the catalogue is also accessible over the campus network. The Library also makes available a range of electronic information services for the retrieval of bibliographic, statistical and other data.
- 10.7 The University has six libraries, the opening hours of which are generally between 8.30am and 10.00 pm during the week and extended hours during the examination period. For further information please visit: [www.qub.ac.uk/lib/](http://www.qub.ac.uk/lib/)

## **Computing Facilities**

- 10.8 All international students will have access to email. You will be given your username and password to access your account when you register. This service is free. You can use any of the Student Computer Centres around the University to access the Internet. Assistance on using the Internet is provided at Orientation and daily in the Computer Centres.
- 10.9 Central computing facilities for students are provided in Student Computer Centres. There are thirteen Student Computer Centres with a total of 660 PCs all of which operate Windows NT. The majority of the Centres are within easy access of the central campus with 240 PCs in the Seamus Heaney Library. All students have access to e-mail and the Internet and have their own filestore account on the campus network. In addition to these central facilities, many schools have their own computing facilities. The University extensively uses email and the Web to communicate with, and provide information to, students. All Elms Village accommodation has internet access.
- 10.10 Computer Based Learning (CBL) materials are available on all the systems in the Student Computer Centres to help students become familiar with the core IT products. They include Introduction to PCs, Windows, Word, Excel, Access and PowerPoint.
- 10.11 During semester the Student Computer Centres are normally open from 9.00 am to 9.30 pm or 11.30 pm from Monday to Friday, with a number open on Saturday and Sunday.

## **Equipment and facilities for disabled students**

- 10.12 The University has developed specialised Assistive Technology provisions for students with disabilities over recent years. The main facilities are as follows:

- 10.13 A dedicated equipment facility located in one of the Student Computer Centres. Students can make use of up-to-date technology (including CCTVs, scanners with synthesised speech and Braille printing options and associated PC hardware and software).
- 10.14 In the University's network of seven Student Computer Centres located throughout the campus over 600 work stations are available to any member of the academic community. Specialised software is available at all these locations to enlarge text and graphics on all existing installed packages. Specific software facilities are also available for use by those with visual impairment and dyslexia who have typing, spelling and reading difficulties.
- 10.15 IT provisions for deaf and hard of hearing students are housed in a new "Hearing Enhancement Technology Room", sited at the centre of the campus. Facilities include the following: a desktop PC, offering access to email, the Internet and standard applications; a laptop PC which can be borrowed, offering standard applications and the package HI LINC (designed to let deaf and hard of hearing students receive information in lectures simultaneously with other hearing students); printing and photocopying facilities; a minicom; an amplified handset; hearing-aid related supplies including batteries and a spare Phonic Ear Personal FM; a portable loop; and a monitor and video unit (suitable for playing and recording subtitled videos). A stock of video materials for use as courseware is also being developed.

## APPENDIX A Skills and Learning Outcomes

On successful completion of the **International Foundation Programme in Engineering and Science** or the **Extended International Foundation Programme in Engineering and Science**, students will be able to:

- Provide students with a high quality education and learning experience at pre-undergraduate foundation level.
- Prepare students for progression to Year One of a range of undergraduate degree programmes at Queen’s University Belfast.
- Provide a qualification to allow alternative progression routes for those students who either (i) do not meet the entry criteria for progression to undergraduate degree programmes at Queen’s University Belfast, or (ii) who do meet the entry criteria for progression to undergraduate degree programmes at Queen’s University Belfast but wish to follow an undergraduate course at another university.
- Enhance the subject knowledge, learning skills and English language ability of students to enable them to communicate and study effectively and confidently at undergraduate level at Queen’s or in another English medium university.
- Assist international students to become accustomed to student life in the UK and to provide practical experience of the learning, teaching and assessment methods found in Queen’s University Belfast and in other UK universities.
- Cultivate a commitment to good practice in academic work and provide students with the necessary personal, interpersonal and key skills to enable them to develop as independent, self-directed learners.

### Learning Outcomes: Cognitive Skills

	<b>On the completion of this course successful students will be able to:</b>	<b>Teaching/Learning Methods and Strategies</b>	<b>Methods of Assessment</b>
1	Interpret criteria and specifications and plan their implementation.	Cognitive skills are developed throughout the programme by posing problems aimed at exercising and developing knowledge in each unit. Throughout the programme, elements of applied work focus the development of cognitive skills. As well as taking part in lectures, laboratories and seminars, students also form learning groups which meet regularly under guidance to discuss progress and problems. Independent enquiry, critical evaluation and interpretation are key elements in all modules and are further reinforced in the Study Skills component of the English Language and Study Skills	Self-assessment and reflection are developed by formative feedback. Assessment of cognitive skills, both summative and formative, occurs in the form of course assignments, oral presentations, project work, field work, coursework and examinations.
2	Identify, analyse and solve a range of science based problems using appropriate techniques and principles.		
3	Formulate solutions to problems through the synthesis of ideas from a range of sources.		
4	Formulate solutions to problems through the synthesis of ideas from a range of sources.		
5	Assess and analyse problems that involve a degree of complexity, taking account of conflicting priorities and the wider impacts and limitations in decision-making.		

		module.	
<b>Learning Outcomes: Transferable Skills</b>			
	<b>On the completion of this course successful students will be able to:</b>	<b>Teaching/Learning Methods and Strategies</b>	<b>Methods of Assessment</b>
1	Use computers and information technology effectively.	<p>Transferable skills development permeates the teaching and learning on the International Foundation Programme. Successful completion of projects, laboratories and coursework requires students to gather additional information from a range of sources, select and assimilate relevant information and to complete tasks within deadlines.</p> <p>ICT skills are consolidated throughout the course as an aid to report writing, visual presentation, literature searching and data handling. Although not formally assessed, qualities such as self-reliance, good time management and the ability to undertake independent study are fostered and encouraged throughout the course.</p>	<p>Assessment of coursework requires students to use a range of media (e.g. essays, PowerPoint or similar presentations, case studies and lab reports) to demonstrate their learning.</p> <p>Students will be assessed through formative and summative examinations, class tests, group project work, fieldwork and coursework.</p>
2	Manage time and resources, prioritise and work to deadlines.		
3	Work and learn independently.		
4	Interact professionally with peers, staff and others, including appropriate written and oral skills.		
5	Work effectively as a member of a group or team.		
6	Communicate effectively in writing, verbally and through graphical media.		
7	Evaluate qualitative and quantitative data.		
8	Use online computer sources for information retrieval and critically appraise the information and sources		
9	Develop and implement sustainable practices with an understanding of the impact on climate change		
<b>Learning Outcomes: Knowledge and Understanding</b>			
	<b>On the completion of this course successful students will be able to:</b>	<b>Teaching/Learning Methods and Strategies</b>	<b>Methods of Assessment</b>
1	Demonstrate knowledge and understanding of essential facts, concepts, theories and principles of a range of science topics.	<p>Throughout the programme emphasis is placed on the integration of language learning, study skill development and the acquisition and/or re-orientation of subject knowledge.</p>	<p>Summative assessment of subject-specific skills is an integral part of all subject modules and includes end-of-term exams, lab reports, class tests,</p>
2	Demonstrate a knowledge of mathematical facts, principles and statistical techniques relevant to a variety of discipline		

	areas and use them to solve real life problems.	Students' knowledge and understanding is developed through lectures, seminars, tutorials, group-work, presentations and report writing.	presentations, assignments and project-work. Formative assessment of student learning occurs both in tutorial and small-group activities. Up-to-date subject-related literature is integrated into the curriculum, and the ability to communicate, debate and critique the literature is developed within the ELSS module and assessed in written and oral presentations both in the subject modules and in the ELSS module.
3	Analyse and combine information from a variety of sources and apply science concepts to practical situations and topical issues.		

**Learning Outcomes: Subject Specific Skills**

	<b>On the completion of this course successful students will be able to</b>	<b>Teaching/Learning Methods and Strategies</b>	<b>Methods of Assessment</b>
1	Apply knowledge and understanding, cognitive and transferable skills within each subject module as well as across modules at programme level.	Lectures, Seminars, Tutorials, group-work, presentations, report writing.	Examinations, Assignments, Projects, Practical classes (laboratory classes and / or fieldwork)
2	Demonstrate competence in a range of appropriate practical techniques and skills relevant to science.		
3	Demonstrate the ability to communicate scientific ideas in a range of formats, including formal scientific reporting		

## APPENDIX B Module Assessment

Module Code	Module Title	Credits	Duration	Core	Optional	Assessment		
						Coursework %	Practical %	Examination %
IFYF001	English Language and Study Skills	30	24 weeks	✓		40	0	60
IFYF008	Foundation Physics	30	24 weeks		✓	20	20	60
IFYF009	Foundation Chemistry	30	24 weeks		✓	20	20	60
IFYF010	Foundation Biology	30	24 weeks		✓	20	20	60
IFYF015	Further Mathematics for Engineering & Science	30	24 weeks		✓	40	0	60
IFYF019	Foundation Mathematics	30	24 weeks	✓		40	0	60

## APPENDIX C Module Specifications

### IFYF001 English Language and Study Skills

<b>Career</b>	Undergraduate
<b>Credit</b>	30 CATS
<b>Course Components</b>	Lecture Required Seminar Required

<b>Enrolment</b>	September and January intake
<b>Contact Teaching Methods</b>	Lectures -24 hours Seminars/Tutorials -78 hours
<b>Assessment</b>	Coursework – 40% Examination – 60%
<b>Prerequisites</b>	IELTS 5.0 (or equivalent) or higher, with a minimum of IELTS 5.0 (or equivalent) in writing and a minimum of IELTS 4.5 (or equivalent) in all other sub-skills  OR  A Pass in English for University Study (EUS) or Academic English (AE) (a change in module title change from EUS to AE is operational from September 2017) (for students on the Extended International Foundation Programme)
<b>Co-requisites</b>	None
<b>Compulsory elements</b>	None

#### Course Content

1. Academic Writing Skills
  - Analysis of elements of academic texts and the process of writing
  - Writing academic texts of genre appropriate to programme pathway (e.g. extended essay, report, data response)
  - Incorporating sources and referencing appropriately
  - Competent use of a good range of sentence and grammatical structures and vocabulary; register and style appropriate to task
  - Drafting, editing and error correction
  - Exam skills
2. Academic Reading Skills
  - Reading programme pathway specific academic texts; identifying key points and details
  - Note-taking and summary-writing
  - Dealing with unfamiliar vocabulary
  - Incorporating material into written work and oral presentations/seminar discussions
  - Exam skills
3. Listening and Note-taking Skills
  - Listening to programme pathway specific mini-lectures and extracts; identifying key points and details
  - Note-taking and review/summary skills
  - Dealing with unfamiliar vocabulary
  - Exam skills
4. Seminar and Presentation Skills
  - Planning, organising, structuring and delivering an oral presentation
  - Using PowerPoint with appropriate visual aids
  - Participating actively in seminar discussions
  - Exam skills

5. Independent Learning and Study Skills
  - Effective time management
  - Active learning strategies
  - Preparation for study in a UK institution
  - General exam skills
6. Tutorials
  - House rules
  - Organisational skills
  - Group and individual meetings with tutors
7. ICT
  - Using the Microsoft Office suite to support requirements of subjects
  - Creating and editing files (e.g. Word documents, spreadsheets, PowerPoint presentations, databases) to meet subject requirements
  - Using search engines to locate appropriate material to support learning and subject requirements

### Learning Outcomes

On successful completion of this module, students should be able to:

#### Overall

1. Demonstration of English language ability at a level equivalent to at least IELTS 6.0 or 6.5 (50% or 60%), depending on progression requirement, with a minimum of IELTS 5.5 equivalent (40%) in all language components/sub-skills (reading, writing, speaking and listening).

#### Academic Writing Skills

2. Use a satisfactory range of sentence and grammatical structures and vocabulary; register and style appropriate to task at this level.
3. Organise, structure, revise, edit and proof-read an academic text.
4. Incorporate in-text citation and bibliographical referencing adhering to academic conventions.
5. Understand the issue of plagiarism and how this can be avoided.

#### Academic Reading Skills

6. Read and understand academic texts appropriate to the subject discipline.
7. Use appropriate reading strategies.
8. Evaluate and think critically about a range of source materials.
9. Expand and practice academic vocabulary, including the Academic Word List, and science- and engineering-related vocabulary.

#### Lecture and Note-taking Skills

10. Follow the structure of an academic lecture, identify main points and key information.
11. Demonstrate effective note-taking skills and ability to synthesise in a verbal or written summary.

#### Seminar and Presentation Skills; Tutorials

12. Develop spoken grammar and vocabulary with regard to both academic and social situations.
13. Prepare and deliver an oral presentation suitable for an undergraduate study environment.
14. Actively engage in seminar, tutorial and group discussions.
15. Be aware of levels of formality in spoken English.

#### Independent Learning and Study Skills

16. Effectively manage time.
17. Recognise learning requirements and engage in active learning strategies to meet these.
18. Develop understanding of Western culture for living and studying in the UK.
19. Develop systematic independent learning skills through self-study tasks conducted at home and in class.

#### ICT

20. Use Microsoft Office to create and edit a range of files and documents to support and meet the requirements of the programme pathway subjects.

<p>21. Use search engines to locate appropriate material to support learning</p>
<p><b>Skills</b></p>
<ul style="list-style-type: none"> <li>• Develop note-taking skills: recognising explicit discourse markers that signal key and specific information, e.g.: definition, exemplification, comparison and contrast</li> <li>• Demonstrate some basic summarising skills – e.g. give an outline of appropriately adapted texts, or summarize and paraphrase simple/adapted texts</li> <li>• Use a reasonable range of skills and strategies for writing academic texts</li> <li>• Complete increasingly complex coursework using the writing process, adapting in response to feedback</li> <li>• Develop skills in planning and time management, strategies for revision and exams, and working effectively as part a group</li> </ul>
<p><b>Supplementary Notes</b></p>
<p>English Language &amp; Study Skills module closely supports the content-based academic modules by support providing an opportunity for the English and the academic module teachers to prepare students for content-based lectures and to follow up on relevant language development and skills</p>

## IFYF008 Foundation Physics

<b>Career</b>	Undergraduate
<b>Credit</b>	30 CATS
<b>Course Components</b>	Lecture Required Seminar Required

<b>Enrolment</b>	September and January intake
<b>Contact Teaching Methods</b>	Lectures – 42 hours Practicals – 12 hours Seminars/Tutorials – 42 hours
<b>Assessment</b>	Coursework – 20% Practical – 20% Examination – 60%
<b>Prerequisites</b>	Students should have a minimum of Grade C (or Equivalent) in GCSE (or Equivalent) Mathematics.
<b>Co-requisites</b>	None
<b>Compulsory elements</b>	None

Course Content
<p><b>MECHANICS</b></p> <ul style="list-style-type: none"> <li>• Physical quantities and units</li> <li>• Scalars and vector</li> <li>• Kinematics</li> <li>• Dynamics</li> <li>• Newton's laws of motion</li> <li>• Statics</li> <li>• Work and conservation of energy</li> <li>• Kinetic and potential energies</li> <li>• Collisions</li> <li>• Circular motion</li> </ul> <p><b>MATERIALS</b></p> <ul style="list-style-type: none"> <li>• Solid, liquid and gases</li> <li>• Elasticity</li> <li>• Thermal properties of materials</li> <li>• Thermal physics</li> <li>• Ideal gases</li> </ul> <p><b>ELECTRICITY</b></p> <ul style="list-style-type: none"> <li>• Charge and current</li> <li>• Resistance</li> <li>• Capacitance</li> <li>• E.m.f. and p.d.</li> <li>• Power</li> <li>• D.C. circuits</li> </ul> <p><b>FIELDS</b></p> <ul style="list-style-type: none"> <li>• Electric fields</li> <li>• Magnetic fields</li> <li>• Electromagnetism</li> <li>• Gravity</li> </ul>

<p>WAVES</p> <ul style="list-style-type: none"> <li>• Wave motion</li> <li>• Electromagnetic waves</li> <li>• Diffraction</li> <li>• Interference</li> <li>• Stationary waves</li> </ul>
<p><b>Learning Outcomes</b></p>
<p>On successful completion of this module, students should be able to:</p> <ol style="list-style-type: none"> <li>1. Demonstrate and apply knowledge and understanding in a broad range of physical topics that will provide students with a foundation for degree level study;</li> <li>2. Describe, explain and interpret phenomena and effects covered in the syllabus in terms of physical principles and concepts;</li> <li>3. Employ relevant methodologies and techniques in the solution of simple problems in the physical sciences;</li> <li>4. Plan and perform practical exercises in physics in a safe and competent manner;</li> <li>5. Demonstrate competence and a degree of proficiency in the recording, analysis, interpretation and presentation of scientific results;</li> <li>6. Use appropriate software in the analysis of data and presentation of findings.</li> </ol>
<p><b>Skills</b></p>
<ul style="list-style-type: none"> <li>• use a wide range of sources to assist independent learning and the selection and proper management of information drawn from these sources, e.g. textbooks, scientific articles, internet, etc.;</li> <li>• Interact effectively within a group, both in and out of a practical environment;</li> <li>• Apply ICT skills in the context of the study of physics;</li> <li>• Communicate scientific information clearly and effectively.</li> </ul>
<p><b>Supplementary Notes</b></p>
<p>Students should have a minimum of Grade C (or Equivalent) in GCSE (or Equivalent) Mathematics.</p>

**IFYF009 Foundation Chemistry**

<b>Career</b>	Undergraduate
<b>Credit</b>	30 CATS
<b>Course Components</b>	Lecture Required Seminar Required

<b>Enrolment</b>	September and January intake
<b>Contact Teaching Methods</b>	Lectures – 42 hours Practicals – 12 hours Seminars/Tutorials – 42 hours
<b>Assessment</b>	Coursework – 20% Practical – 20% Examination – 60%
<b>Prerequisites</b>	None
<b>Co-requisites</b>	None
<b>Compulsory elements</b>	None

<b>Course Content</b>
<ol style="list-style-type: none"> <li>1. Atomic structure and atomic mass</li> <li>2. Electronic structure of atoms, and the Periodic Table</li> <li>3. Chemical Bonding</li> <li>4. Metallic bonding, hydrogen bonding and simple intermolecular forces, and shapes of molecules</li> <li>5. Molarity and balanced equations</li> <li>6. Empirical and molecular formulae – Oxidation and reduction</li> <li>7. The Periodic Table</li> <li>8. Group II</li> <li>9. Group VII</li> <li>10. Transition Elements</li> <li>11. Organic chemistry: bonding, isomerism, nomenclature and reactions</li> <li>12. Alkanes and alkenes</li> <li>13. Alcohols</li> <li>14. Halogenoalkanes to illustrate substitution mechanisms</li> <li>15. Aldehydes and ketones</li> <li>16. Carboxylic acids and esters</li> <li>17. Aromatic chemistry</li> <li>18. Physical chemistry; energetics, equilibrium and Gibbs free energy</li> <li>19. Bronsted-Lowry theory of acids and bases</li> <li>20. Kinetics</li> <li>21. Spectroscopy</li> </ol>
<b>Learning Outcomes</b>

On successful completion of this module, students should be able to:

1. Demonstrate and apply knowledge and understanding in a broad range of chemistry topics that will provide students with a foundation for degree level study
2. Describe, explain and interpret phenomena and effects covered in the syllabus in terms of chemical principles and concepts;
3. Employ relevant methodologies and techniques in the solution of simple problems in the chemical sciences;
4. Plan and perform practical exercises in chemistry in a safe and competent manner.
5. Demonstrate competence and a degree of proficiency in the recording, analysis, interpretation and presentation of scientific results.
6. Use appropriate software in the analysis of data and presentation of findings.

#### **Skills**

- use a wide range of sources to assist independent learning and the selection and proper management of information drawn from these sources, e.g. textbooks, scientific articles, internet, etc.
- Interact effectively within a group, both in and out of a practical environment.
- Apply ICT skills in the context of the study of chemistry.
- Communicate scientific information clearly and effectively.

**IFYF010 Foundation Biology**

<b>Career</b>	Undergraduate
<b>Credit</b>	30 CATS
<b>Course Components</b>	Lecture    Required Seminar    Required

<b>Enrolment</b>	September and January intake
<b>Contact Teaching Methods</b>	Lectures – 42 hours Practicals – 20 hours Seminars/Tutorials – 36 hours
<b>Assessment</b>	Coursework – 20% Practical – 20% Examination – 60%
<b>Prerequisites</b>	None
<b>Co-requisites</b>	None
<b>Compulsory elements</b>	None

<b>Course Content</b>
<ol style="list-style-type: none"> <li>1. Biological Molecules – carbohydrates, lipids, nucleic acids, proteins</li> <li>2. Enzymes</li> <li>3. Cells, Tissues, Organs – differences between these <ul style="list-style-type: none"> <li>• Cell types – prokaryotic &amp; eukaryotic</li> <li>• Cell structure – organelles</li> </ul> </li> <li>4. Cell membrane structure and function <ul style="list-style-type: none"> <li>• Transport across membrane</li> </ul> </li> <li>5. Digestion – structure and function of main components of digestive system. Breakdown of food by enzymes to monomers</li> <li>6. Respiration – glycolysis, Krebs cycle and electron transport chain. Anaerobic respiration.</li> <li>7. Leaf structure and Photosynthesis</li> <li>8. Ecology <ul style="list-style-type: none"> <li>• Biodiversity</li> <li>• Sampling animals</li> <li>• Simpsons Index</li> <li>• Ecosystems</li> </ul> </li> <li>9. Genetics and Molecular Biology <ul style="list-style-type: none"> <li>• Chromosomes and karyotype</li> <li>• DNA replication</li> <li>• Cell cycle, Mitosis, Meiosis</li> </ul> </li> </ol>

- Monohybrid, Dihybrid cross, back crosses
- Protein Synthesis
- Human Genetics – trisomy, autosomal dominant, autosomal recessive and sex inked traits (examples of each)

10. Physiology

- Circulatory system
- Respiratory system
- Homeostasis
- Excretory system

### Learning Outcomes

On successful completion of this module, students should be able to:

1. Demonstrate and apply knowledge and understanding in a broad range of biological topics that will provide students with a foundation for degree level study
2. Describe, explain and interpret phenomena and effects in terms of biological principles and concepts;
3. Employ relevant methodologies and techniques in the solution of simple problems in the biological sciences;
4. Plan and perform practical exercises in biology in a safe and competent manner.
5. Demonstrate competence and a degree of proficiency in the recording, analysis, interpretation and presentation of scientific results.
6. Use appropriate software in the analysis of data and presentation of findings.

### Skills

- use a wide range of sources to assist independent learning and the selection and proper management of information drawn from these sources, e.g. textbooks, scientific articles, internet, etc.
- Interact effectively within a group, both in and out of a practical environment.
- Apply ICT skills in the context of the study of biology
- Communicate scientific information clearly and effectively.

## IFYF015 Further Mathematics for Science and Engineering

<b>Career</b>	Undergraduate
<b>Credit</b>	30 CATS
<b>Course Components</b>	Lecture Required Seminar Required

<b>Enrolment</b>	September and January intake
<b>Contact Teaching Methods</b>	Lectures – 48 hours Seminars/Tutorials – 48 hours
<b>Assessment</b>	Coursework – 40% Examination – 60%
<b>Prerequisites</b>	None
<b>Co-requisites</b>	Foundation Mathematics for Engineering and Science
<b>Compulsory elements</b>	None

<b>Course Content</b>
<ol style="list-style-type: none"> <li>1. Vectors</li> <li>2. Further Vectors</li> <li>3. Kinematics of particles</li> <li>4. Statics of particles</li> <li>5. Statics of Rigid Bodies</li> <li>6. Dynamics of particles</li> <li>7. Matrices and Transformations</li> <li>8. Trigonometric Identities</li> <li>9. Complex numbers</li> <li>10. Hyperbolic functions</li> <li>11. Conic sections</li> <li>12. Further Differentiation and Function Approximation</li> <li>13. Further Integration</li> <li>14. First Order Differential Equations</li> <li>15. Second Order Differential Equations</li> </ol>
<b>Learning Outcomes</b>
<p>On successful completion of this module, students should be able to:</p> <ol style="list-style-type: none"> <li>1. Recognise, recall and apply specific mathematical facts, principles and techniques.</li> <li>2. Select, organise and present relevant information clearly and logically.</li> <li>3. Select and apply appropriate mathematical techniques to solving real life problems.</li> <li>4. Apply mathematical techniques to problems from a variety of relevant discipline areas.</li> <li>5. Present and interpret data in tables, diagrams and graphs, using generic and specific software packages.</li> <li>6. Carry out appropriate calculations using a formula booklet, a calculator and/or computer software where appropriate.</li> <li>7. Discuss and interpret results obtained, including an estimate of accuracy.</li> </ol>
<b>Skills</b>
<ol style="list-style-type: none"> <li>1. Study independently and make personal notes for problem-solving and revision purposes.</li> </ol>

2. Source and retrieve information from a variety of original and derived locations, such as textbooks, the internet, field study etc.
3. Select and employ problem-solving skills (description, formulation, solution/analysis, interpretation).
4. Use and apply information technology.

**Supplementary Notes**

**IFYF019 Foundation Mathematics**

<b>Career</b>	Undergraduate
<b>Credit</b>	30 CATS
<b>Course Components</b>	Lecture Required Seminar Required

<b>Enrolment</b>	September and January intake
<b>Contact Teaching Methods</b>	Lectures – 48 hours Seminar/Tutorial –48 hours
<b>Assessment</b>	Coursework – 40% Examination – 60%
<b>Prerequisites</b>	None
<b>Co-requisites</b>	None
<b>Compulsory elements</b>	None

<b>Course Content</b>
<ul style="list-style-type: none"> <li>• Algebra and Functions</li> <li>• Linear Equations</li> <li>• Quadratic Equations</li> <li>• Cubic Equations</li> <li>• Matrix Algebra</li> <li>• Functions and Graph Transformations</li> <li>• Sequences and Series</li> <li>• Differentiation and Applications</li> <li>• Trigonometric Functions</li> <li>• Integration and Applications</li> <li>• Introduction to Statistics</li> <li>• Correlation, Regression and Time Series Analysis</li> <li>• Set Theory, Probability and Distributions</li> </ul>
<b>Learning Outcomes</b>
<p>On successful completion of this module, students should be able to:</p> <ol style="list-style-type: none"> <li>1. Recognise, recall and apply specific mathematical facts, principles and techniques.</li> <li>2. Select, organise and present relevant information clearly and logically.</li> <li>3. Select and apply appropriate mathematical and statistical techniques to solving real life problems.</li> <li>4. Apply mathematical techniques to problems from a variety of relevant discipline areas.</li> <li>5. Present and interpret data in tables, diagrams and graphs, using generic and specific software packages.</li> <li>6. Carry out appropriate calculations using a formula booklet, a calculator and/or computer software where appropriate.</li> <li>7. Discuss and interpret results obtained, including an estimate of accuracy.</li> <li>8. Develop concepts in probability and statistics and their application to real world data.</li> </ol>
<b>Skills</b>
<ol style="list-style-type: none"> <li>1. Study independently and make personal notes for problem-solving and revision purposes.</li> <li>2. Source and retrieve information from a variety of original and derived locations, such as textbooks, the internet, field studies etc.</li> <li>3. Select and employ problem-solving skills (description, formulation, solution/analysis, interpretation).</li> </ol>

4. Use and apply information technology.