

## Foundation Year in the Sciences

|   |   |
|---|---|
| Awarding Institution:                       | The University of Reading                     |
| Teaching Institution:                       | The University of Reading                     |
| Relevant QAA subject benchmarking group(s): | N/A   |
| Faculty of Science                          | Programme length: 1 year or 2 year p.t.       |
| For students entering in 2004               | Date of specification: <b>Sept 18th, 2004</b> |
| Programme Director: Dr Ben Cosh             |   |
| Programme Adviser: Dr Ben Cosh              |   |
| Board of Studies: Foundation Programme      |   |
| Accreditation: -IMechE, IEE, IoP            |   |

### Summary of programme aims

The Foundation Year in the Sciences aims to provide a route into the Faculties of Life Sciences and Science for students whose background is not that of the standard A-level route, or whose subjects at school or college are not suitable for direct entry to the degree programme they wish to study. It provides a foundation year extending the standard three year BSc to a four year BSc programme, with corresponding changes to other programmes. This will be achieved by the provision of high quality teaching which is sympathetic to the needs of students with a range of different educational backgrounds. On completion of the one year Foundation Programme students should be suitably prepared to embark upon the undergraduate degree course for which they have qualified academically.

### Transferable skills

The University's Strategy for Teaching and Learning has identified a number of generic transferable skills that all students are expected to have developed by the end of their degree programme. In following the full four (or five) year programme, students will have had the opportunity to enhance their skills relating to career management, communication (both written and oral), information handling, numeracy, problem-solving, team working and use of information technology.

As part of the foundation year students are expected to have gained experience and show competence in scientific writing, oral presentation, team-working, problem-solving, use of library resources, and time-management, although the skills developed will depend to some extent upon the modules pursued.

### Programme content

During the Foundation Year students must study modules totalling 120 credits and these will be divided into three 40-credit module-groups. Two of these 40-credit groups must be subject-pairs from the list of foundation modules in the table below. The remaining 40-credit group will usually be another foundation level subject-pair but in some cases (for instance, where a student is already qualified in a particular science subject with at least an A-level grade C, or some equivalent) a suitable combination of foundation level modules and/or relevant alternative Level C modules will be permitted. Each student's choice of subject-pairs will depend upon their intended destination programme. The table in Annex A lists the module pairs that must be studied for destination programme areas in the Faculties of Science and Life Sciences.

| Subject Pair       | Module Code | Module  | Credits | Level |
|--------------------|-------------|---|---------|-------|
| Maths              | CE0EMA      | Foundation Maths A (Autumn only)                    | 20      | 0     |
|                    | CE0EMB      | Foundation Maths B (Spring only)                    | 20      | 0     |
| Physics            | PH0A        | Foundation Physics A                                | 20      | 0     |
|                    | PH0B        | Foundation Physics B                                | 20      | 0     |
| Electrical Science | EE0A        | Foundation Electrical Science A (Autumn and Summer) | 20      | 0     |
|                    | EE0B        | Foundation Electrical Science B (Spring and Summer) | 20      | 0     |
| Biology            | AM0BIA      | Foundation Biology A (Autumn and Summer)            | 20      | 0     |
|                    | AM0BIB      | Foundation Biology B (Spring and Summer)            | 20      | 0     |

|           |      |                                 |    |   |
|-----------|------|---------------------------------|----|---|
| Chemistry | CH0A | Foundation Chemistry A (Autumn) | 20 | 0 |
|           | CH0B | Foundation Chemistry B (Spring) | 20 | 0 |

### Progression requirements

#### Passing the Foundation Year

The performance threshold for successful completion of the Foundation Year is achievement of an overall average of the pass marks in the modules taken, and individual marks of at least 30% in each of a collection of modules totalling 100 credits. Thus the pass mark for students taking all modules at foundation level is 55%. For students for whom part of the material taught is at foundation level (pass mark 55%) and part at level C (pass mark 40%) the mark required to pass the foundation year will be the weighted average of the pass marks for the modules taken in the foundation year.

#### Progression to Part 1

The table in Annex A, splits the compulsory subject-pairs for each degree programme into *key* compulsory subject-pairs and *other* compulsory subject pairs. In order to progress from the Foundation Year to Part 1 of a programme, a student shall normally be required to have achieved the performance threshold for successful completion of the year and have achieved an average not less than 55% in the key compulsory subject-pairs and not less than 40% in the other compulsory subject-pairs, for their intended destination programme.

In some cases (for instance, where a student is already qualified in some subject) the subject-pair requirements may vary from those provided in Annex A. All students will complete the form in Annex B when they begin study on the Foundation Year. This form gives an individual statement of progression requirements, and can cater for the special cases that cannot be considered in a general document such as this programme specification.

#### Summary of teaching and assessment

Teaching is organised in modules that typically involve lectures, seminars, problem solving sessions and practical classes. Most modules will be assessed by a mixture of coursework and final examinations. The pass mark for programmes containing all modules at foundation level is 55%. All examinations will have a significant proportion of compulsory questions.

A feature of the Foundation Programme is to enhance the motivation of students enrolled and improve their prospects of progression. This is achieved by specific teaching methods which emphasise:

- close association with the school/department staff involved in delivering the destination degree programme .
- small group tutorials and seminars.
- a dedicated pastoral support programme.

#### Admission requirements

Entrants will normally required to have obtained Grade C or better in English and Mathematics in GCSE or equivalent and typically students with science subject backgrounds will be considered with UCAS tariffs of roughly 200pts. However, there is **no standard entry offer** for this programme and the admissions tutor will consider each application on its merits. Applications from mature learners and those whose educational backgrounds does not normally provide access to undergraduate science programmes will be welcomed. Priority will be given to candidates who can demonstrate

- ability to self-organise and work independently
- motivation to succeed, and/or
- genuine interest in science.

Admissions will be conducted by the Programme Director, in consultation with admissions tutors from the destination department determined by the ultimate degree programme to be followed by the student.

#### Support for students and their learning

Learning support which includes IT Services and the University Library is available to all students on the foundation year. The University library has a range of electronic sources of information and houses the Student Access to Independent Learning (S@IL) computer-based teaching and learning facilities. Student

guidance and welfare support is provided by Personal Tutors, the Careers Advisory Service, the University's Special Needs Advisor, Study Advisors, Hall Wardens and the Students' Union.

The Foundation Year Programme in the Sciences places particular emphasis on the individual support of students. It is anticipated that many of these students will derive from non-standard educational backgrounds and require both motivation and encouragement in order to succeed. Although students registering for this programme will have a choice of degrees available at Part 1, they will be registered for a particular programme on entry and assigned a personal tutor from the relevant school. Through the Personal Tutor system students will follow the PAR (Personal Academic Record) scheme in which tutors see their students at least once per term and appraise performance in academic and transferable skills. In this way problems can be identified and addressed at an early stage. Results from continual assessment carried out in modules will be relayed to personal tutors for discussion at PAR interviews.

### **Career prospects**

Whilst not directly involved with career planning or management the Foundation Year in the Sciences provides access to most degree programmes in the Faculties of Science and Life Sciences.

### **Opportunities for study abroad or for placements**

There are no arrangements for study abroad or placements on this one year programme.

### **Educational aims of the programme**

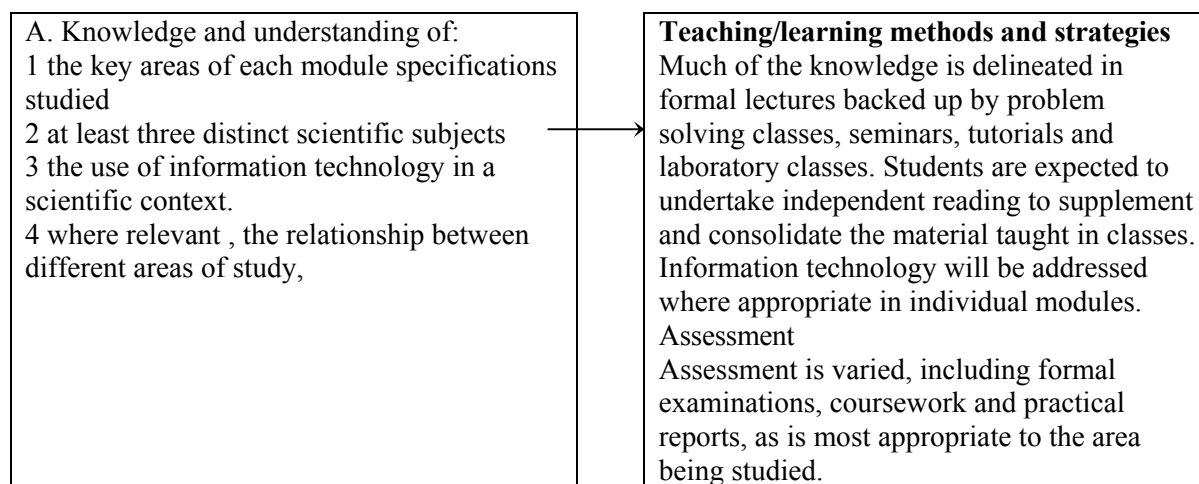
The main aims of the Programme are:

- to provide a sound knowledge base in the subject areas studied in order to progress to Part 1 of the appropriate undergraduate degree programme.
- to develop and encourage the learning skills necessary for undergraduate level study.
- to instil an understanding of the work discipline, commitment, independent learning and time management required for undergraduate study.

### **Programme Outcomes**

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills, qualities and other attributes in the following areas:

#### **Knowledge and Understanding**



## Skills and other attributes

|   |  |
|---|--|
| <p><b>B. Intellectual skills – able to:</b></p> <ol style="list-style-type: none"> <li>1 think logically</li> <li>2 analyse and solve problems</li> <li>3 explain and apply the subject material.</li> <li>4 recognise and use subject-specific theories, concepts and principles</li> <li>5 analyse, synthesise and summarise information critically</li> <li>6 apply knowledge and understanding to address familiar and unfamiliar problems</li> <li>7 collect and integrate evidence to formulate and test hypotheses</li> <li>8 Use appropriate terminology confidently and accurately.</li> </ol>   | <p><b>Teaching/learning methods and strategies</b></p> <p>Logic is an essential part of the understanding of science and is embedded throughout the programme. Most modules are designed to develop 1- 5. 4 – 7 are enhanced through the use of coursework assignments. 6-8 are addressed in practical classes.</p> <p><b>Assessment</b></p> <p>1- 4 are assessed indirectly in most parts of science, while 5 contributes to the more successful work. 1-2 in particular are assessed in problem solving classes. 6-8 are assessed in practical reports</p> |
| <p><b>C. Practical skills – able to:</b></p> <ol style="list-style-type: none"> <li>1 plan, conduct, and report scientific experiments and report reliably on their outcomes</li> <li>2 accurately collect and collate data. use data to produce a well presented and ordered report.</li> </ol>  | <p><b>Teaching/learning methods and strategies</b></p> <p>Practical skills are developed through regular practical exercises. In some modules work is laboratory or project based and data are used to produce reports.</p> <p><b>Assessment</b></p> <p>Practical skills are assessed through laboratory reports or practical examinations.</p>  |
| <p><b>D. Transferable skills – able to:</b></p> <ol style="list-style-type: none"> <li>1 communicate effectively by written and oral means.</li> <li>2 demonstrate numerical and problem solving skills appropriate to the subject matter of the module.</li> <li>3 use IT (word-processing, using standard software packages, scientific programming)</li> <li>4 interpersonal skills: ability to work independently and with others and share knowledge effectively; recognise and respect the views and opinions of other team members.</li> <li>5 use the internet critically as a source of information.</li> <li>6 apply self management and professional development: study skills, independent learning, time management, identifying and working towards targets for personal, academic and career development.</li> </ol> | <p><b>Teaching/learning methods and strategies</b></p> <p>The skills listed are developed primarily within the context of the core modules with additional support provided through problem solving workshops, seminars and tutorials.</p> <p><b>Assessment</b></p> <p>1- 3 are assessed mainly through coursework, including practical report writing. The other skills are not directly assessed but their effective use will enhance performance in later modules.</p>  |
| <p>Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably expect to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module can be found in module and programme handbooks.</p>  |  |

## Annex A

### Programme Areas and Compulsory Module-pairs

Please note that this list is not exhaustive and that in some circumstances progression requirements may vary. Every student should complete the form in Annex B on commencement of the Programme.

| <b>Destination Programme Area</b> | <b>Key Compulsory Module-pairs</b> | <b>Other Compulsory Module-pairs</b> |
|-----------------------------------|------------------------------------|--------------------------------------|
| Biology                           | Biology                            | Maths, Chemistry                     |
| Chemistry                         | Chemistry                          | Maths                                |
| Integrated Engineering            | Maths, Physics, Electrical Science |                                      |
| Mechanical Engineering            | Maths, Physics                     | Electrical Science                   |
| Electronic Engineering            | Maths, Electrical Science          | Physics                              |
| Physics                           | Maths, Physics                     | Electrical Science                   |
| Mathematics                       | Maths                              |                                      |
| Meteorology                       | Maths, Physics                     | Electrical Science                   |
| Other areas                       | Consult Programme Director         |                                      |

**Annex B**  
**Progression Requirements Form**

The form overleaf should be completed by every student when they begin the Foundation Year. Its purpose is to provide a clear individual statement of intended destination programme and what is required to progress to that programme. In most cases, progression requirements will be based on the table in Annex A. This form allows variations in requirements to be clearly stated when it is appropriate. An EXAMPLE of a completed form is shown below.

**University of Reading**  
**Foundation Year in the Sciences**

**Progression Requirements Form**

STUDENT NAME:

DESTINATION PROGRAMME:

| MODULE SELECTIONS: | Module-Group                                | Module Codes, Titles and Credits   |
|--------------------|---|--|
|                    | Maths<br><b>Key Compulsory</b>              | CE0EMA Foundation Maths A (20)<br>CE0EMB Foundation Maths B (20)                       |
|                    | Physics<br>Compulsory                       | PH0A Foundation Physics A (20)<br>PH0B Foundation Physics B (20)                       |
|                    | Electrical Science<br><b>Key Compulsory</b> | EE0A Foundation Electrical Science A (20)<br>EE0B Foundation Electrical Science B (20) |

PROGRESSION REQUIREMENT:

SIGNED STUDENT:  Date:

ADMISSIONS TUTOR:  Date:

PROGRAMME DIRECTOR:  Date:

**If the progression requirement or Key Compulsory Module-Pairs do not match those given in the Foundation Year Programme Specification Annex A, please attach detailed reasons – which may refer to prior qualifications or other special circumstances.**

**Copies of this form should be retained by the Student, the Admissions Tutor for the destination programme, and the Foundation Year Programme Director.**

**University of Reading  
Foundation Year in the Sciences**

**Progression Requirement Form**

STUDENT  
NAME:

DESTINATION  
PROGRAMME:

MODULE  
SELECTIONS:

| <b>Module-Group</b>  | <b>Module Codes, Titles and Credits</b> |
|----------------------|---|
| <input type="text"/> | <input type="text"/>                    |
| <input type="text"/> | <input type="text"/>                    |
| <input type="text"/> | <input type="text"/>                    |

PROGRESSION  
REQUIREMENT:

**SIGNED**  
STUDENT:  Date:

ADMISSIONS  
TUTOR:  Date:

PROGRAMME  
DIRECTOR:  Date:

**If the progression requirement or Key Compulsory Module-Pairs do not match those given in the Foundation Year Programme Specification Annex A, please attach detailed reasons – which may refer to prior qualifications or other special circumstances.**

**Copies of this form should be retained by the Student, the Admissions Tutor for the destination programme, and the Foundation Year Programme Director.**