

Programme Specification – BSc Nutrition and Food Science with professional training (February 2007)

BSc Nutrition and Food Science (with Professional Training)

For students entering Part 1 in Autumn 2005

UCAS code: BDK6

Awarding Institution: The University of Reading

Teaching Institution: The University of Reading

Relevant QAA subject benchmarking group(s):

- i) Biosciences and
- ii) Agriculture, Forestry, Agricultural and Food Sciences

Faculty of Life Sciences

Date of specification: February 2005

Programme Director: Dr O.Kennedy

Programme Adviser: Dr O.Kennedy

Board of Studies: Food Biosciences

Accreditation: Nutrition Society

Programme length: **4 years**

Summary of programme aims

The aim is to provide a programme of education which can enable its graduates to enter a career in government, the food industry or other sectors involved in the food chain, education or health, as scientists, and to develop their capacity to undertake research into the science of food and health. The testable learning outcomes will be the ability to:

- integrate the scientific disciplines relevant to nutrition, food and health
- communicate and apply scientific knowledge in nutrition, food and health to meet the needs of consumers, industry and food regulatory authorities for the production and marketing of safe and quality foods.

Transferable skills

The University's Strategy for Teaching and Learning has identified a number of generic transferable skills which all students are expected to have developed by the end of their degree programme. In following this 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.

Programme content

The Nutrition and Food Science programme provides an opportunity for students to follow a core curriculum that will allow them to gain post graduation registration as a 'Registered Nutritionist' with opportunity to diversify their subject knowledge through selection of specified optional modules. The programme is also designed to allow graduates from the course to be recognised as competent food and nutrition scientists with sufficient understanding and knowledge to function within the food and health industries in technical, development, advisory and marketing roles. The profile which follows states which modules must be taken (the core Nutrition and Food Science modules) and, for Part 2 and 3, the lists of modules from which the student must make a selection (the optional modules). The fundamental science modules in Part 1 have been selected to ensure students gain a thorough grounding in biology, chemistry, mathematics and aspects of physical systems, necessary to form the basis for further study in Food Science and in Nutrition. Although there is a significant degree of overlap in the foundation science requirements for both Nutrition

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and Food Science, the Human Physiology, Cell Biology and Biochemistry and Genetics and Molecular Biology modules provide an essential base for the health related and mechanistic aspects of nutrition that will be studied later in the course. The Microbiology and Chemistry are foundation modules for both subjects, whereas the Mathematics and Computing and Physical aspects of Biological Systems are modules that have been specifically designed for this programme to ensure that this group of students has sufficient numeracy and knowledge of physical systems to underpin their later studies involving food processing, food engineering and product development. For the optional modules, students are free to select any module that is not a compulsory module so as to make 120 credits in each Part.

Part 1 (three terms)

<i>Mod Code</i>	<i>Module Title</i>	<i>Credits</i>	<i>Level</i>
AM1M11	Fundamental Microbiology	10	C
PM1PB2	Human Physiology	20	C
BI1C10	Cell Biology and Biochemistry	10	C
BI1C11	Genetics and Molecular Biology	10	C
CH1C	Foundation Chemistry	20	C
FB2N1	Fundamentals of Human Nutrition	20	I
FB1GFS	Selected Topics in Food Science	10	C
FB1EM2	Mathematics and Computing for Life Sciences	10	C
FB1EPB	Physical Aspects Biological Systems	10	C

Part 2 (three terms)

Compulsory modules

<i>Mod Code</i>	<i>Module Title</i>	<i>Credits</i>	<i>Level</i>
<i>Core Nutrition/Food Science Modules</i>			
FB2C1	Fundamentals of Food Chemistry	20	I
FB2EFP	Food Processing	20	I
FB2PH1	Public Health Nutrition 1	10	I
FB2FC1	Food Choice and Regulation	10	I
FB2MF2	Microbiological Hazards in Foods	10	I
AM2C34	Introduction to human disease	10	I
PM2ES6	Statistics for Pharmacy	10	I
AP2EC1	Consumer behaviour	10	I

Optional modules (20 credits):

<i>Mod Code</i>	<i>Module Title</i>	<i>Credits</i>	<i>Level</i>
	Institution Wide Language Programme	20	C/I/H
FB2C2A	Chemistry of Food Components A	20	I
FB2MF1	Microbiology food preservation and spoilage	10	I
AM2C32	Endocrinology	10	I

Professional Training Year (between Part 2 and 3)

<i>Mod Code</i>	<i>Module Title</i>	<i>Credits</i>	<i>Level</i>
FB2PY	Industrial Training	120	I

Part 3 (three terms)

Compulsory modules

Mod Code	Module Title	Credits	Level
<i>Core Nutrition and Food Science Modules</i>			
FB3GPD	Food Product Development	10	H
FB3GSE	Sensory Evaluation	10	H
FB3N2A	Diet and Disease	10	H
FB3N2B	Genes, lifestyle and nutrition	10	H
FB3N3	Bioavailability, Diet and Gut Health	10	H
FB3PH2	Public Health Nutrition 2	10	H
FB3PFB	Individual Research Project	40	H

Optional modules (20 credits):

Mod Code	Module Title	Credits	Level
	Institution Wide Language Programme	20	C/I/H
FB3CN1	Clinical Nutrition	10	H
AP3ED1	Food issues in Developing Countries	10	H
AM3C71	Biochemistry and Physiology CVD	10	H

Professional Experience/Training

The student on the 4 year Programme will be required to spend 12 months between Parts 2 and 3 on gaining approved industrial or professional experience. Appropriate vacation employment in at least one Summer vacation is also recommended.

Progression requirements

- Progression from Part 1 to Part 2

In order to progress from Part 1 to Part 2, a student shall normally be required to achieve a threshold performance at Part 1. To gain a threshold performance at Part 1 a student shall normally be required to achieve an overall average of 40% over 120 credits taken in Part 1, and a mark of at least 30% in all individual modules.

- Progression from Part 2 to Part 3

To gain a threshold performance at Part 2 a student shall normally be required to achieve:

an overall average of 40% over 120 credits taken in Part 2, and a mark of at least 30% in all compulsory modules amounting to 100 credits. In order to progress from Part 2 to Part 3, a student shall normally be required to achieve a threshold performance at Part 2.

- To pass the Professional Training Year students must achieve 40%. Students who fail the Professional Training Year will be required to transfer to the 3 year Programme.
- To obtain the degree at the end of Part 3, students must obtain an overall average of 40%. The final degree assessment is based on the following weightings:

For students registered for a 4 year programme:

Part 2 Modules	23 %
Industry Year	10%
Part 3 Modules	67 %

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Summary of teaching and assessment

As indicated above, teaching is organised into modules – each module will consist of lectures, practicals, or a combination of these. Students are assessed on each module, usually by a formal examination, although modules consisting only of practicals (or similar coursework) may not have a formal examination. All course work is assessed and the assessment contributes towards the modular marks. The Part 3 project is an individual study requiring the submission of formal report for assessment.

Admission requirements

Entrants to this programme are normally required to have obtained:

GCSE: Grade C or better in Mathematics and English in GCSE; and achieved Advanced Level (AS and A2):

- Grades B,C, C at A2 with at least two science subjects, preferably chemistry and biology. Related subjects at AS level that will be taken into account include food technology, environmental science and human biology
- A UCAS Tariff of 260 with 80 obtained in at least one core science

International Baccalaureat: 29 points

Irish Leaving Certificate: BBBBC

Admissions Tutor: Dr R.Frazier

Support for students and their learning

University support for students and their learning falls into two categories. Learning support includes IT Services, which has several hundred computers and the University Library, which across its three sites holds over a million volumes, subscribes to around 4,000 current periodicals, has a range of electronic sources of information and houses the Student Access to Independent Learning (S@IL) computer-based teaching and learning facilities. There are language laboratory facilities both for those students studying on a language degree and for those taking modules offered by the Institution-wide Language Programme. 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.

Career prospects

There are many varied job opportunities for scientifically trained graduates in nutrition. This course specifically trains graduates who are equipped to operate in many organisations and industries involved in the development, supply and regulation of food and food products. Graduates are equipped to work in education, consumer information and government departments concerned with assurance of nutrition quality and health as well as in public health nutrition. Other opportunities arise in companies supplying the food industry with ingredients, equipment and packaging and in specialist food and nutrition research laboratories.

Opportunities for study abroad or for placements

The School participates in a number of exchange programmes under the EU Socrates scheme which includes the opportunity to take industrial training in another European country. Students have, as a result, been to a number of countries including Germany, France, Spain and Italy. Although not common, industrial training attachments have also been arranged in other countries including the United States of America and Australia.

Educational aims of the programme

The Nutrition and Food Science programme aims to:

- Provide a programme of education which can enable its graduates to enter a career in a wide range of public and private organisations, as scientists, capable of supporting the relation between food and health through development, production, regulation and consumer acceptance of quality food.
- Provide a broadly based scientific education whose graduates can also enter into employment in related scientific sectors where they can apply their scientific skills.
- Allow individuals to develop their capacity to undertake research into the science of food and health.
- Provide students with an opportunity to experience the application of their course work through a short placement in industry.
- Provide undergraduates with opportunities to develop their inter-personal and communication skills.
- Enable graduates from the course to meet the qualification and curriculum requirements for post graduate qualification as ‘Registered Nutritionist’.

Programme Outcomes

Knowledge and Understanding

<p>A. Knowledge and understanding of:</p> <ol style="list-style-type: none">1. food and nutrient composition, nutrient action, adaptation to food and nutrient supply (FB2N1;CH1C; FB2C1; FB2EFB; FB3N2)2. biological basis of the interaction between food and health (PM1PB1; BI1CI10; BI1C11; FB2N1;AM2C34; FB2N2; FB3N3; FB3PH2)3. methods and data for acquiring and interpreting information about diet and health and evidence based food policy (PM2ES2;FB2PH1;FB3PH2)4. role of agriculture, food production, marketing, economic, social and behavioural factors affecting dietary adequacy (FB1GFS;FB2EFP; FB2PH1; FB2FC1; AP2EC1; FB3GPD; FP3GSE; FB3N2)	<p>Teaching/learning methods and strategies Lectures and practical classes provide the basic knowledge. A variety of coursework gives opportunities for extending knowledge and techniques. Individual and group projects reinforce techniques and give experience of practical applications</p> <p><i>Assessment</i> Most knowledge is tested through a combination of coursework and unseen formal examinations. Project work, reports, oral presentations and computer-based exercises also contribute to the final assessment.</p>
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Skills and other attributes

<p>B. Intellectual skills – able to:</p> <ol style="list-style-type: none"> 1. analyse and solve problems (FB2C1;FB2MF2; FB2PH1;PM2ES2; FB3GPD; FB3GSE; FB3PH2) 2. critically evaluate scientific literature, recognising strengths and weaknesses in research findings (FB2PH1;FB3N2;FB3PFS;FB3PH2;FB3N3;FB2C1;FB2EFP) 3. assess problems and design experiments to test hypotheses (FB3GPD;FB3PFS; FB3PH2) 4. apply knowledge to new problems (FB3GPD; FB3PFS) 5. plan, conduct and report on an individual research project (FB3PFS). 	<p>Teaching/learning methods and strategies Topics 1 and 2 are essential components of the programme and are embedded in many parts of the programme. Topics 3 and 4 are introduced in Part 2 and Part 3 course-work. Topics 3, 4 and 5 are fully developed during product development module and the individual research project in Part 3 of the programme.</p> <p><i>Assessment</i> Coursework is structured to assess topics 1, 2, 3 and 4. Topics 3, 4 and 5 are assessed as components of the individual research project</p>
<p>C. Practical skills – able to:</p> <ol style="list-style-type: none"> 1. develop and perform chemical, nutritional, microbiological and sensory laboratory tests to assess the quality and safety of foods (CH1C;FB2C1; FB2MF2; FB3GSE) 2. appreciate principles associated with assessment and formulation of diets to meet specified requirements for individuals or populations (FB2N1; FB2FC1; AP2EC1) 3. ability to record, collate and analyse nutrition related data using appropriate statistical methods (FB1EM2;PM2ES2; FB3PFS) 	<p>Teaching/learning methods and strategies Topic 1 is introduced by lectures but is developed fully by appropriate laboratory exercises during all Parts of the programme. Topics 2, 3 and 4 are developed during lectures, exercises and group work in Parts 2 and 3 of the programme.</p> <p><i>Assessment</i> All topics will be assessed by coursework.</p>

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D. Transferable skills – able to:

1. work as an individual, in a small group or as part of a larger team (FB2C1;FB2EFP; FB2NF2; FB2N1;FB2PH1; FB3PFS; FB3GPD)
2. prepare reports and make presentations that effectively present the results of investigations carried out (FB2PH1;FB3PH2;FB3N2;FB3N3;FB3PFS)
3. make effective use of information technology (FB1EM2;PM2ES2;FB3PFS)
4. consider and manage career choice (FB1GFS; vacation employment visit)
5. digest, summarise and communicate information concerning food and nutrition at a level appropriate to the needs of both specialist and non-specialist target audiences (FB2PH1;FB2FC1; FB3PH2; FB3PFS).

Teaching/learning methods and strategies

The development of transferable skills is integrated into many parts of the programme. Students are required to work both as individuals and as part of groups. Career skills (topic 4) are introduced in a Part 1 module and reinforced by the work experience period between part 1 and part 2. Skills in communication and presentation are developed as part of seminar presentations (specialist and non-specialist), presentations of specialist material from laboratory classes, research project

Assessment

All topics are assessed both by coursework within the modules and in formal examinations.

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 be expected 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 the module description and in the programme handbook. The University reserves the right to modify this specification in unforeseen circumstances, or where the process of academic development and feedback from students, quality assurance processes or external sources, such as professional bodies, requires a change to be made. In such circumstances, a revised specification will be issued.