

MSc / Postgraduate Diploma in Food Science For students entering in October 2009

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| Awarding Institution: | University of Reading |
| Teaching Institution: | University of Reading Faculty of Life Sciences |
| Programme length: | 12 months |
| Date of specification: | July 2009 |
| Programme Director: | Dr A E Bell |
| Board of Studies: | MSc Programmes in Food Science, Food Technology Quality Assurance, and Nutrition and Food Science. |

Summary of programme aims

The purpose of the course is to develop an understanding of the chemical behaviour and physical properties of food constituents in the context of their manufacture and storage, particularly from the standpoints of safety and nutritional attributes.

The expected outcomes are that students should acquire and demonstrate:

- an understanding of the science base for the production and preservation of foods;
- an understanding of methods for the assessment and control of food safety;
- an understanding of the science base of diet and health issues as they impinge on the food industry;
- an ability to elaborate methods for the assessment of food quality by means of chemical, microbiological and sensory analysis techniques;
- a capacity to undertake research in food science.

Transferable skills

As part of this programme students are expected to gain or enhance their experience and competences in the following skills: IT (word-processing, use of spreadsheets and databases, use of Web resources), scientific writing, oral presentations, team working, problem solving, use of library resources and time management.

Programme content

MSc students will follow the modules given below making 180 credits; PG Diploma students will take 120 credits (normally excluding the Project).

Compulsory Modules (MSc 170-credits / PG Diploma (110-credits))

| <i>Mod Code</i> | <i>Module Title</i> | <i>Credits</i> | <i>Level</i> | <i>Term</i> |
|-----------------|--|----------------|--------------|-------------|
| FBMF1A | Food Analysis 1 | 10 | 7 | Aut |
| FBMFCA | Chemistry of Food Components A | 10 | 7 | Aut |
| FBMFCEB | Chemistry of Food Components B | 10 | 7 | Spr |
| FBMFMI | Introductory Food Microbiology | 10 | 7 | Aut |
| FBMFMI3 | Microbial Quality Assurance | 10 | 7 | Spr |
| FBMFPI | Food Processing | 20 | 7 | Aut/Spr |
| FBMFPR | Project | 60 | 7 | Sum |
| FBMFPS1 | Sensory Properties of Foods | 10 | 7 | Spr |
| FBMNO1 | Fundamentals of Human Nutrition | 10 | 7 | Aut |
| FBMNO6 | Nutrition in Health and Disease | 10 | 7 | Aut |
| MMM052 | Entrepreneurial Management for Food Scientists | 10 | 7 | Spr |

Optional modules (10-credits)

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| FBMFP3 | Economic Manufacture | 10 | 7 | Spr |
| FBMN07 | Food Choice and Regulation | 10 | 7 | Spr |

Part-time/Modular arrangements

The modules are may be taken on a part-time basis over a maximum of three years. The taught modules may be taken in any order agreed with the Head of School and will normally be completed before the project module is taken.

Progression requirements

Diploma/MSc Students gaining an average mark of 50 or more overall in the taught modules and have no mark below 40, plus all modules below 50 must be less than 60 credits, may proceed to the MSc at the discretion of the Head of School.

See appended progression requirements for students following a post-experience certificate.

Summary of teaching and assessment

The teaching is organised in modules (totalling 180 credits) that involve a combination of lectures, tutorials, workshops, seminars, and practical sessions. Modules taken during the autumn and spring term (120 credits) will be assessed by a mixture of course work and formal examinations. The assessment of the remaining 60 credits, which will be based on a practical project or dissertation, will be based on a written report of the work undertaken.

The University's taught postgraduate marks classification is as follows:

| <u>Mark</u> | <u>Interpretation</u> |
|----------------------------|-------------------------------|
| 70 – 100% | Distinction |
| 60 – 69% | Merit |
| 50 – 59% | Good standard (Pass) |
| <u>Failing categories:</u> | |
| 40 – 49% | Work below threshold standard |
| 0 – 39% | Unsatisfactory Work |

For Masters Degrees

To pass the MSc students must gain an average mark of 50 or more overall (in 180 credits) including a mark of 50 or more for the dissertation and have a combined average of at least 40 in modules FBMFCA and FBMFCB and a mark of at least 40 in module FBMFM1. In addition the total credit value of all modules marked below 40 must not exceed 30 credits and for all modules marked below 50 must not exceed 55 credits.*

Students who gain an average mark of 70 or more overall including a mark of 60 or more for the dissertation and have no mark below 40 will be eligible for a **Distinction**. Those gaining an average mark of 60 or more overall including a mark of 50 or more for the dissertation and have no mark below 40 will be eligible for a **Merit**.

For PG Diplomas

To pass the Postgraduate Diploma students must gain an average mark of 50 or more overall (in 120 credits). In addition the total credit value of all modules marked below 40 must not exceed 30 credits and for all modules marked below 50 must not exceed 55 credits.*

Students who gain an average mark of 70 or more and have no mark below 40 will be eligible for the award of a **Distinction**. Those gaining an average mark of 60 or more and have no mark below 40 will be eligible for a **Merit**.

* The provision to permit a candidate to be passed overall with a profile containing marks below 40 is made subject to the condition that there is evidence that the candidate applied his or herself to the work of those modules with reasonable diligence and has not been absent from the examination without reasonable cause.

Admission requirements

Entrants to this programme are normally required to have obtained a honours degree in a Pure or Applied Science or an equivalent qualification. Applicants whose academic qualifications do not meet these requirements may in the first instant be admitted to a post-experience course; they may then transfer to MSc status if their performance during the first term is satisfactory.

Admissions Tutor: Dr D J Jukes

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, School Senior Tutors, the Students' Union, the Medical Practice and the Student Services Centre. The Student Services Centre is housed in the Carrington Building and includes the Careers Advisory Service, the Disability Advisory Service, Accommodation Advisory Team, Student Financial Support, Counselling and Study Advisors. Student Services has a Helpdesk available for enquiries made in person or online (www.risisweb.reading.ac.uk), or by calling the central enquiry number on (0118) 378 5555. Students can get key information and guidance from the team of Helpdesk Advisers, or make an appointment with a specialist adviser; Student Services also offer drop-in sessions on everything from accommodation to finance. The Carrington Building is open between 8:30 and 17:30 Monday to Thursday (17:00 Friday and during vacation periods). Further information can be found in the Student Diary (given to students at enrolment) or on the Student website (www.reading.ac.uk/student).

Career prospects

An MSc degree in Food Science provides a strong platform from which to undertake a wide range of careers, particularly relating to food, in industry, government and education. Food Scientists are highly valued for their problem solving skills and their ability to apply their technical knowledge to ensure the safety and quality of food in production, manufacture and distribution. Some students choose to apply their research skills by pursuing a higher degree through research or through research and development in industry.

Opportunities for study abroad or for placements

Students will be able to undertake the 60 credit project module at an approved institution or an appropriate industrial concern, but this will depend on having the necessary linguistic skills and finding a suitable placement, and appropriate supervisory arrangements being in place.

Educational aims of the programme

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| Food Chemistry: | Apply and increase knowledge of the chemical and physical behaviour of food constituents with particular reference to their safety and nutritional attributes |
| Laboratory Work | Acquire and use practical skills to develop and perform chemical, physical and microbiological laboratory tests for the assessment of food quality and consumer preference |
| Hazard Control | Participate in the assessment of a food production process by the use of techniques such as Hazard Analysis and Critical Control Points so as to ensure the hygienic production of safe and wholesome foods. |
| Food Processing: | Qualitatively evaluate the performance of the principal food processing operations used by industry, and use quantitative techniques to evaluate safety factors. |
| Food Microbiology | Identify and establish control procedures for all important food pathogens, food spoilage microorganisms and food fermentation microorganisms |
| Human Nutrition | Develop and understanding of the science base of diet/health issues that impinge on the food industry |
| Sensory Analysis | Acquire and apply knowledge of sensory tests for the assessment of food quality and consumer preference |

Programme Outcomes

Knowledge and Understanding

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| <p>A. Knowledge and understanding of:</p> <ol style="list-style-type: none">1. the concepts and techniques of the chemistry and microbiology of food and a critical awareness of their application in food quality assurance.2. the concepts and techniques of human nutrition and food processing and a critical awareness of their application in the manufacture and production of wholesome food. | <p>Teaching/learning methods and strategies</p> <p>The knowledge required is provided in formal lectures supported by practical work, seminars and presentations.</p> <p>Feed back on student work is provided by the discussion and return of work in tutorials and seminars. All practical work is marked and returned to the student.</p> <p><i>Assessment</i></p> <p>Most knowledge is tested through a combination of coursework, including oral presentations, and formal examinations, plus a written report of a practical based project.</p> |
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Skills and other attributes

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| <p>B. Intellectual skills – able to:</p> <ol style="list-style-type: none">1. think logically and evaluate critically research and advance scholarship in the discipline2. plan and implement tasks at a professional level to solve problems related to the discipline3. evaluate methodologies and where appropriate propose new hypotheses4. plan, conduct and write a report on an independent practical project. | <p>Teaching/learning methods and strategies</p> <p>Logical application of science and the critical appraisal of methodology are essential parts of the role of a Food Scientist in the food industry. These skills will underpin the lectures, practical and project work.</p> <p><i>Assessment</i></p> <p>1-3 are assessed directly and indirectly in most parts of the course 1-4 are assessed in the final project report.</p> |
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C. Practical skills – able to:

- 1 apply, or adapt, practical instructions safely and accurately
- 2 carry out a variety of experimental procedures in the laboratory or pilot plant.
- 3 interpret quantitatively the results of experiments undertaken by themselves or others
- 4 devise experimental methods appropriate for tackling a particular problem

Teaching/learning methods and strategies

A range of detailed or outline practical instructions are used to allow students to develop a range of practical skills.

Staff and postgraduate demonstrators are present during practical sessions to guide and help, to mark their reports and give feedback on their work.

Students will work on their project under the guidance of one or more members of staff.

Assessment

1-4 are assessed to different extents by the practical work associated with the various modules undertaken.

D. Transferable skills – able to:

- 1 make use of IT (word processing, spreadsheets, web sources)
- 2 communicate scientific ideas
- 3 give oral presentations
- 4 work as part of a team
- 5 use library resources
- 6 manage time

Teaching/learning methods and strategies

The use of IT is embedded throughout the programme, but is particularly addressed in modules FBMFM2, FBMFP1.

Team work is essential in the practical and role play sessions associated with modules FBMN01, FBMFM2, FBMFP2, FBMFC2.

Library resources are addressed in the first term modules and during the project and dissertation work.

Time management is essential for the timely and effective completion of the programme.

Assessment

1-5 contribute to assessed coursework during the first two terms.

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.

Appendix

Progression from Post-experience certificate to MSc course

Candidates admitted to a post-experience course who have followed the MSc programme during the Autumn term may, at the discretion of the Head of School, transfer to the MSc programme if their performance in the December/January School examination is satisfactory. The registration being back dated to the beginning of the Academic year.