

# De Montfort University

## Course Template

### 1. Basic information

- Course Name: Biomedical Science
- Course Code: SM002A
- Level (UG, PG): Undergraduate
- Academic Period: 2015
- Faculty: HLS - Faculty of Health & Life Sciences
- Department: School of Allied Health Sciences
- PMB ALHE
- Offered at: DM - DMU Leicester
- Type (single, joint.): SI
- Highest Award : Bachelor of Science (Honours)
- All possible exit awards : Bachelor of Arts; BA/BSc; BA/BSc (Honours); Bachelor of Arts (Honours); Bachelor of Science; Certificate of Higher Education; Diploma of Higher Education; Institutional Undergraduate Credit
- Award notes :

#### Professional Body Recognition

- Accreditation by Professional/Statutory body:
- Exemption by Professional/Statutory body:
- Details
- Modes of attendance: Main MOA: Full-Time  
Other MOA:
- Mode Notes:
- Course leader: Ruta Furmonaviciene

### 2. Entry Requirements and Profile

UCAS Points Minimum of 260 points GCSEs <ul style="list-style-type: none"><li>• Five GCSEs at grade C or above including Maths and English. Plus one of the following:</li></ul> Alevels <ul style="list-style-type: none"><li>• from a minimum of 2 A levels including Human Biology, Biology or Chemistry at grade C or above</li></ul> BTEC <ul style="list-style-type: none"><li>• BTEC National Diploma - Science BTEC with Distinction/Merit/Merit (280) points</li><li>• BTEC National Certificate - only in combination with other accepted qualifications. Must meet Science requirement</li><li>• BTEC National Award - only in combination with other accepted qualifications. Must meet Science requirement</li><li>• BTEC Extended Diploma (3 A2s) - only in combination with other accepted qualifications. Must meet Science requirement</li><li>• BTEC Diploma (2 A2s) Science - BTEC Distinction* Distinction</li><li>• BTEC 90 credit Diploma - only in combination with other accepted qualifications. Must meet Science requirement</li><li>• BTEC Subsidiary Diploma (1 A2) - only in combination with other accepted qualifications. Must meet Science requirement</li></ul>
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- BTEC certificate (1 A1) - only in combination with other accepted qualifications. Must meet Science requirement

Access course

Pass in Access to Science. English and Maths GCSE equivalency required, 12 level 2 credits in each subject.

Interview: No

Work Experience: No

International Baccalaureate:

28+ with 6 higher level points in Chemistry and another Science at Higher Level (preferably Biology)

International students:

If English is not your first language, we require an English language level of IELTS 6.5 or equivalent.

Personal Statement selection criteria

- Clear communication skills, including good grammar and spelling
- Information relevant to the course applied for
- Interest in the course demonstrated with explanation and evidence
- If relevant for the course - work and life experience

### 3. Course Description

#### Characteristics and Aims

A core team of specialised biomedical scientists at De Montfort University has offered Biomedical Science at honours degree level since 1981 and as a single subject B.Sc. (Hons) Biomedical Science from 1994. More recently the Biomedical Science experience has been associated with Integrated Vocational Pathways at undergraduate and graduate level. Recent developments now offer the Biomedical Science programme and modules as a 'Studies' option, designed for those students whose career plans do not require, or abilities do not match, the high level of laboratory competence required for entry into the Biomedical Scientist profession.

Biomedical Science subject area consists of professionally taught modules with a large practical component, which is key to an output of high quality graduates for the Biomedical Scientist profession. The Biomedical Science units encompass an ethos of highly specialised and professional learning of excellence in the taught elements of the Biomedical Science courses and in the interactive practical components, supported by computer assisted learning and other advanced learning techniques. The individual learning experience is considered to be of crucial importance and to this end every effort is made to involve the students in every aspect of course delivery and management. Student feed back on all aspects of the Biomedical Science training has always been considered to be an effective way of delivering a highly effective and imaginative learning experience. A pro-active external examinership and interaction with the healthcare professionals in the local medical laboratory directorate further enhances the quality of the Biomedical Science education, developing a course input that is at the cutting edge of medical laboratory science. In particular the recent advances in the molecular basis of disease, its diagnosis and investigation, are actively addressed and integrated into the programmes at every available opportunity.

A number of universities offer a Biomedical Science degree course and many require the undergraduate to choose a subject speciality within the laboratory based medical sciences. The Biomedical Science Team at De Montfort University believes in a broad base foundation and a multidisciplinary approach to the medical laboratory sciences within the Biomedical Science Programme. The course was designed to encompass the major laboratory specialities (haematology & transfusion science, immunopathology, histopathology & cytopathology, chemical pathology, medical microbiology). Indeed, this reflects the philosophy of the statutory body, the Health Professions Council, and the profession itself, who wish to see multiskilling in the NHS laboratories and a more generic Biomedical Scientist. A multidisciplinary profession is now present in many of the pathology laboratories in the UK.

The specific aim of the Biomedical Science Programmes at De Montfort University is to produce high quality graduates practised in experimental and routine aspects of the biomedical pathology laboratory, with theoretical knowledge and practical skills appropriate to the study and interpretation of the physiological and molecular biological processes relating to normal and diseased states in humans, as required of a biomedical scientist at the leading edge of professional practice. The delivery aim is to produce an environment in which this highly specialised learning in the taught elements of the Biomedical Science courses and in the interactive practical components is supported.

**Professional Body Associations:** The only route to state registration, and thus qualification for practice in an accredited NHS, private or pharmaceutical pathology laboratory, is the single subject B.Sc. (Honours) Biomedical Science degree. A graduate may present a non-biomedical science honours degree, acceptable to the HPC, which with the “top-up” Graduate Diploma in Biomedical Science is approved as a route for state registration purposes.

**Career Opportunities:** The single subject B.Sc. (Honours) Biomedical Science degree is the only qualification acceptable to the HPC for entry into state registration as a Biomedical Scientist and thus empowers successful candidates for practice in NHS pathology laboratories, Public Health Laboratories and those pathology laboratories in the private sector of the United Kingdom. Significant opportunities for state registered Biomedical Scientists do exist abroad, for example in Australia, New Zealand, USA, Middle and Far East. However, it should be noted that Biomedical Scientists are highly sought after and are employed in the pharmaceutical industry, government and university laboratories, forensic science laboratories, clinical trials management, and the food industry, as well as the laboratory supply and in vitro diagnostic industries that supply the NHS. The undergraduate Biomedical Science foundation is also highly appropriate for entry into post-graduate academic study and research. Career opportunities in teaching are available and this is enhanced by the facility, offered by the Biomedical Science suite of courses, to use the Supervised Work Experience year to gain Qualified Teacher Status. Finally, graduates also find advancement in a very wide range of lifetime opportunities.

**Special Opportunities:** Those students registered on the single subject Biomedical Science programme may take the 48 week Supervised Work Experience year with the IBMS portfolio training and become state registered as Biomedical Scientists just after graduation. Qualified Teacher Status may be gained by single honours Biomedical Science, Biomedical Studies, again utilising the 48 week Supervised Work Experience year for the appropriate training. From September 2004 we have also offered the 'co-terminus' option for East Midlands SHA HWD-sponsored NHS trainees to attend University on a full-time basis, with intercalated laboratory training during the University vacation.

Direct entry to the second year of the degree programme is considered for those candidates offering a BTEC/Edexcel Higher National Diploma or a recognised Certificate of Higher Education in an appropriate area of science. Direct entry to the final year of the vocational Biomedical Science degree programme is considered for those candidates offering a BTEC/Edexcel Higher National Diploma in Medical Laboratory Science, with one year of Pathology Laboratory experience, or candidates with an appropriate science based honours degree. Transfer from the Biomedical Science to the Biomedical Studies degree programme may be considered at any point that would benefit the progression of a student.

#### *Teaching, Learning and Assessment Strategies*

Each of the Biomedical Science modules has a certain amount of time available for it and while individual modules will vary somewhat in the use they make of this, all of them will involve three types of activity. One will require fairly formal discussions of information, concepts, etc. (lectures/tutorials); and the second will be basically experimental in nature where students will work singly or in various groups on investigations, data analysis, case studies, etc. The majority of the practical sessions are intended to introduce the student to important laboratory techniques as well as support the academic content of the course. Revision and tutorial/seminar sessions will be used for conceptual and laboratory based

seminars, for small group discussions of general and individual student difficulties with the lecture programme, for a discussion of illustrative problems and examples and to place the background science into a Biomedical Science context. The third will generally not involve academic staff, i.e. the work will be 'student centred'. Here the student is expected to undertake fairly clearly defined work and generally on their own. Students will be given thorough guidance on these exercises, which are just as important, and as likely to be assessed in course work or in the end of module examinations, as the more formally taught material. The time a student is allowed during the day on these student centred activities is not a substitute for study in their own time, which will be necessary to support and consolidate both taught and student centred material.

A wide range of course delivery and assessment strategies will be used, which reflect the wide spectrum of knowledge and skills required by the biomedical scientist. Course delivery will include: formal, interactive lectures and tutorials; laboratory based exercises, mini-projects, demonstrations and tutorials; seminars, student-led oral presentation, student centred learning (video, slide-tape, published and PC based CAL packages); Pathology centre visits, and input from external specialist lecturers. Such activities, besides their academic value, are also designed to develop the interpersonal skills of the student, complemented by the modules of Professional Skills. Assessment will be made by examination and coursework. Apart from the modules of Professional Skills and the Project, each module will be assessed with a two or three hour written examination. Coursework will be assessed on a continuous basis from laboratory reports, essays, dissertation, oral and poster presentation, which will be used to examine problem solving, information retrieval, interpretation and presentation.

Assessment will be made by examination and a wide range of continuous assessment methods, designated coursework. Apart from the modules of Professional Skills, Supervised Work Experience and final year Project, normally each module will be assessed with a time constrained written examination. Written examinations will include short answer questions, with longer essay and problem solving questions taking increasing prominence in Level 2 through to Level 3 examinations. Coursework will be examined by means of written work set periodically during the module, by assessment of laboratory work, including assessment of manipulative and technical skills in the laboratory, essays, dissertation, poster presentations and by assessment of individual or group oral presentation of a seminar topic. All of these assessment exercises will be used to examine problem solving, information retrieval, interpretation and presentation skills. The written work can be very diverse in nature and may entail essays, computer-based assignments, interpretation of supplied experimental data, etc. Laboratory work will require the production of reports which will be marked and should normally be submitted within two weeks (10 teaching / working days) of the date on which the assignment was set. A deadline date and time will be given for each assignment. The student must comply with the instructions given and note that when work is submitted late, although it will be marked, the assessment will be recorded as a reduced maximum mark or even no mark at all.

Late submission of assessments will accrue the following penalty:

- 40% cap for work submitted UNAUTHORISED up to 7 days after the deadline
- 0% for work submitted UNAUTHORISED more than 7 days after the deadline

The pass mark in both examination and coursework is 40% - and both must be passed in order to obtain full credit for the module. Each module will carry a module mark computed from the examination and coursework marks (see syllabus outline for each module, to be found in the module templates).

At Level 1, and in the BIOM2000 series of modules in Level 2 studies, a compensation may be awarded by the Allied Health Sciences Subject Authority Board, in agreement with the External Examiner(s), should there be a fail with a minimum of 30% of the available marks in one of the two components of assessment, examination or coursework, and for which a summative module mark may be presented. If either of the component marks (examination or coursework), is below 30% then the module mark will be capped at 28%. If both coursework and examination marks are below 40%, then the module mark will be capped at 28%. Compensation within a module will not be permitted in the specialism subjects or project at

Level 3 (BIOM3001 to BIOM3006) and will be designated “Mandatory” under the University's Modular Degree Scheme Generic Regulations.

A compensation decision will not exclude the candidate from his/her right to resit the examination or retake the module of coursework on the subsequent occasions these are offered.

Progression on the BSc (Honours) Biomedical Science degree programme will follow the University's Modular Degree Scheme Generic Regulations.

Where extenuating circumstances are presented to and accepted by the Allied Health Sciences Subject Authority Board, mitigation of assessed coursework and examination components will be allowed. However, an attendance of less than 70% at the timetabled components for a module will require the coursework to be retaken with attendance.

#### 4. Outcomes

Generic outcome headings	What a student should know and be able to do upon completion of the course
<ul style="list-style-type: none"> <li>• <b>Knowledge &amp; understanding</b></li> </ul>	<p>The generic subject aim is to produce graduates with an overall understanding and competence in the major aspects of medical laboratory sciences. Completion of the full diet of Biomedical Science modules aims to produce graduates competent in all aspects of medical laboratory sciences, with the ultimate goal of an intercalated full professional training that leads to state registration and professional recognition as a Biomedical Scientist.</p>
<ul style="list-style-type: none"> <li>• <b>Cognitive skills</b></li> </ul>	<p>One of the many innovations in the Biomedical Science Programme has been the development of presentational skills within all the BIOM modules, not only in those designated Professional Skills. It is a part of the Biomedical Science module philosophy that as many of the BIOM modules should have associated with them either an essay or an oral assignment, with final year modules having both. The ability to communicate is a fundamental requirement of the biomedical scientist. It has been the experience of the course team that the development of these skills needs to be commenced at an early stage and requires routine practice spread throughout the programme. All the Level 1 &amp; Level 2 BIOM modules contain either an assessed essay assignment or individual oral presentation. Each Level 3 module has at least one essay and one oral assignment.</p>
<ul style="list-style-type: none"> <li>• <b>Subject specific skills</b></li> </ul>	<p>The Objectives of the BSc Honours degree programme in Biomedical Science at De Montfort University are formulated to produce biomedical scientists:</p> <ol style="list-style-type: none"> <li>a. who will find appropriate employment in industry or commerce,</li> <li>b. who will be acceptable for State</li> </ol>

	<p>Registration by the HPC and for entry into the Biomedical Science profession after appropriate vocational training. Training is included as part of an optional intercalated work experience and training programme.</p> <p>c. who will be suitably qualified for entry into postgraduate programmes leading to the award of higher degrees, such as MSc, MPhil and PhD, and professional qualifications, such as Fellowship of the Institute of Biomedical Science.</p>
<ul style="list-style-type: none"> <li>• <b>Key Skills</b></li> </ul>	<p>The Biomedical Science subject area at De Montfort University has always offered transferable skills instruction as a part of the integrated learning experience. Library and information technology skills, mathematics, statistics, and communication skills, that is the general preparation for life in the university and for future employment, are not only developed within specifically designated modules over years one and two, but form a continuous and integrated learning process within all the Biomedical Science modules.</p>

## 5. Structure and Regulations

### Relationship Details

<u>Module</u>	<u>Credits</u>	<u>Level</u>	<u>Take/Pass</u>	<u>Semester</u>	<u>Locations</u>
<b>BIOM1004</b>	<b>30.00</b>	<b>1</b>	<b>Must Take</b>	<b>Y</b>	<b>DM</b>
<b>BIOM1005</b>	<b>15.00</b>	<b>1</b>	<b>Must Take</b>	<b>Y</b>	<b>DM</b>
<b>BIOM1006</b>	<b>30.00</b>	<b>1</b>	<b>Must Take</b>	<b>Y</b>	<b>DM</b>
<b>BIOM1007</b>	<b>30.00</b>	<b>1</b>	<b>Must Take</b>	<b>Y</b>	<b>DM</b>
<b>BIOM1060</b>	<b>15.00</b>	<b>1</b>	<b>Must Take</b>	<b>Y</b>	<b>DM</b>
<b>BIOM2001</b>	<b>15.00</b>	<b>2</b>	<b>Must Take</b>	<b>Y</b>	<b>DM</b>
<b>BIOM2002</b>	<b>15.00</b>	<b>2</b>	<b>Must Take</b>	<b>Y</b>	<b>DM</b>
<b>BIOM2003</b>	<b>30.00</b>	<b>2</b>	<b>Must Take</b>	<b>Y</b>	<b>DM</b>
<b>BIOM2004</b>	<b>15.00</b>	<b>2</b>	<b>Must Take</b>	<b>Y</b>	<b>DM</b>
<b>BIOM2005</b>	<b>30.00</b>	<b>2</b>	<b>Must Take</b>	<b>Y</b>	<b>DM</b>
<b>BIOM2060</b>	<b>15.00</b>	<b>2</b>	<b>Must Take</b>	<b>Y</b>	<b>DM</b>
<b>BIOM3001</b>	<b>15.00</b>	<b>3</b>	<b>Both</b>	<b>Y</b>	<b>DM</b>
<b>BIOM3002</b>	<b>15.00</b>	<b>3</b>	<b>Both</b>	<b>Y</b>	<b>DM</b>
<b>BIOM3003</b>	<b>15.00</b>	<b>3</b>	<b>Both</b>	<b>Y</b>	<b>DM</b>
<b>BIOM3005</b>	<b>15.00</b>	<b>3</b>	<b>Both</b>	<b>Y</b>	<b>DM</b>
<b>BIOM3006</b>	<b>30.00</b>	<b>3</b>	<b>Both</b>	<b>Y</b>	<b>DM</b>
<b>BIOM3007</b>	<b>15.00</b>	<b>3</b>	<b>Both</b>	<b>Y</b>	<b>DM</b>
<b>BIOM3009</b>	<b>15.00</b>	<b>3</b>	<b>Both</b>	<b>Y</b>	<b>DM</b>
<b>BIOM3010</b>	<b>15.00</b>	<b>3</b>	<b>Neither</b>	<b>Y</b>	<b>DM</b>

### Structure

Structure notes

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Course Specific Differences or Regulations

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Numbers at sites, including partner institutions

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Relevant QAA Subject Benchmarking statement(s)

**6. Quality Assurance Information**

QA of Workbased Learning

Liaison with Collaborative Partners

Procedures for Maintaining Standards

**Course Handbook Descriptor**