

Programme Specification

BSc Sports Science and Physics

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 full advantage is taken 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 Specifications and other programme documentation and online at <http://www.lboro.ac.uk/>

The accuracy of the information in this document is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.

Awarding body/institution;	Loughborough University
Department;	Physics
Teaching institution (if different);	
Details of accreditation by a professional/statutory body;	Full accreditation by the Institute of Physics.
Name of the final award;	BSc
Programme title;	Sports Science and Physics
UCAS code;	FC36/CF63
Date at which the programme specification was written or revised.	3 rd Jan 2008

1. Aims of the programme:

To communicate to students the laws and phenomena that comprise the world view of the physicist.

To educate students as physicists in preparation for employment in industry, public service or academic research by providing the knowledge, competence and skills expected of a physicist.

To enable students to apply a broad understanding of the basic principles of physics to the solution of physical problems.

To provide the student with enhanced skills in mathematics, problem solving, experimental techniques, scientific report writing and the collection and analysis of information.

To provide the student with enhanced skills in presenting information and the use of information technology.

To provide an environment that gives students opportunities to develop their own interests, self-reliance and career aspirations.

To develop knowledge, understanding and skills in core sport sciences

To provide students with selected specialised areas of study so that they experience the frontiers of research in sports science.

2. Relevant subject benchmark statements and other external and internal reference points used to inform programme outcomes:

The national benchmark statement for Physics
The national benchmark statement for Hospitality, Leisure, Sport and Tourism
Institute of Physics degree accreditation guidelines
University Teaching and Learning Strategy
Framework for Higher Education Qualifications

3. Intended Learning Outcomes

Knowledge and Understanding

The degree programme in Physics covers the fundamental topics of physics, provides a selection of advanced topics and develops experimental, mathematical, computational and other transferable skills. On successful completion of this programme students should have demonstrated

1. Knowledge and understanding of most fundamental physical laws and principles and competence in the application of these principles to diverse areas of physics.
2. An ability to solve problems in physics using appropriate mathematical tools.
3. An ability to identify physical principles relevant to a problem and to make approximations necessary to obtain solutions.
4. An ability to execute and analyse critically the results of an experimental investigation and to draw valid conclusions with an estimate of the uncertainty in the result. The ability to critically compare experimental results with the predictions of theory.
5. An ability to use competently IT packages and a knowledge of computer programming.
6. An ability to communicate scientific information especially in the form of clear and accurate scientific reports.
7. Understanding of core sports science from both a theoretical and practical perspective.

8. Knowledge of the techniques required for a range of sports.
9. Understanding of the tactical/strategic factors involved in sport.
10. Knowledge of specialist areas in sports science chosen from a wide range of optimal modules in, for example, biomechanics, sociology, physiology and psychology.

Teaching, learning and assessment strategies to enable outcomes to be achieved and demonstrated:

Knowledge and understanding of areas 1 – 3, 7, 8, 10 is acquired through lectures, tutorials, problem classes and guided independent study. The practically oriented knowledge of areas 4 – 6, 8,9 is acquired in practical classes in the physics and sports science laboratories as well as in sports sessions. This is supported by associated lectures.

Assessment is by a combination of examinations, coursework and practical assignments.

Skills and other attributes:

(a) Subject specific cognitive skills:

On successful completion of the programme students should be able to

1. Demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to areas 1-10.
2. Apply such knowledge and understanding to the solution of qualitative and quantitative problems of a familiar and unfamiliar nature.
3. Recognise and analyse novel problems and plan strategies for their solution.
4. Evaluate, interpret and collate information and data.

Teaching, learning and assessment strategies to enable outcomes to be achieved and demonstrated:

Cognitive skills are promoted by lectures, practicals, tutorials and supervision of advanced work in the final year and by guided independent study.

Cognitive skills are assessed by examinations and coursework. Examinations show how well a student can understand and apply an area of knowledge by applying their knowledge and understanding to an unseen question in a limited time period. Coursework allows the student to demonstrate wider skills by incorporating experimental skills, literature research, report writing skills and presentation skills in the assessment. In the final year the student demonstrates all of the above skills in an

academic research project that may be theoretically or experimentally based.

(b). Subject-specific practical skills:

On successful completion of the programme students should be able to

1. Observe, accurately record and analyse, including estimates of accuracy, the results of experiments into physical processes.
2. Design an experiment to test a physical theory.
3. Communicate ideas effectively by means of written reports and orally.
4. Plan and execute a research project on a topic of current scientific interest.
5. Apply appropriate mathematical or computing tools to a physical problem.
6. Analyse skills, techniques and tactics in sport.
7. Demonstrate practical skills relevant to a range of core sports.
8. Show skills specific to their chosen specialist area of sports science.

Teaching, learning and assessment strategies to enable outcomes to be achieved and demonstrated:

Practical skills are promoted through laboratory and project work. In Parts A and B students are taught in practical classes; in Part C they undertake a short research project under the supervision and guidance of a staff member. Assessment is via coursework, mainly in the form of written reports and discussions of experimental work with staff members. In Part C the research project is assessed by report, viva voce examination and research presentation. Practical and analytical skills are taught in practicals associated with applied sports modules in Parts A and B.

c. Key/transferable skills:

On successful completion of the programme students should be able to

1. Formulate problems in precise terms and identify key issues, construct logical arguments and use technical language correctly.
2. Listen carefully, read demanding texts and present complex information in a clear and concise manner.
3. Demonstrate study skills for continuing professional development.
4. Demonstrate retrieval skills for directly taught and independently acquired information and for primary as well as secondary information sources.

Teaching, learning and assessment strategies to enable outcomes to be achieved and demonstrated:

A study skills booklet is given to each student on arrival. Students should have gained an understanding of how to clearly report experimental methodology, observations and results including the analysis of qualitative and quantitative data through written reports and their feedback. Tutorials and presentations provide an opportunity to develop skills in the oral and written presentation of information from directly taught and independently acquired information, and for primary as well as secondary information sources. They also aid interpersonal skills by interaction with other people and engagement in team-working to develop scientific arguments and problem solve. Timetabled laboratory classes, practical sessions and published coursework deadlines train students in time management, small group management and organisational skills.

4. Programme structures and requirements , levels, modules, credits and awards:

In each of the first two years the programme consists of 50% physics together with required mathematics, and 50% sports science.

More detail can be found at:

<http://www.lboro.ac.uk/departments/ph/teaching/programmes/ssp.html>

Full details are to be found in the Programme Regulations:

<http://www.lboro.ac.uk/departments/ph/teaching/regs/current/sspr.pdf>

5. Criteria for admission to the programme:

A-Level qualifications: 280 points to include a minimum of grade B in Physics and Maths at A-Level (A2) or equivalent.

6. Information about assessment regulations:

Most modules are assessed by a mixture of written examination and coursework and some will include practical assessment.

Part A and Part B assessment is for progression to the second and third year respectively. Second and third year results are weighted 40:60 in calculating final degree classification.

Students follow modules weighted at 120 credits per year. In order to progress to the next year of the programme, or to be awarded a degree at the end of Part C, students must, each year, accumulate at least 100 credits. Pass mark of 40% is applied to each module. In addition students must obtain a minimum of 30% in core Physics and Maths modules.

Any student who fails to meet these module requirements has the automatic right of reassessment on one occasion only. Candidates are permitted to undertake reassessment in modules which, if passed, would give them a maximum of 100 credits (unless a candidate has achieved 90 credits with one 10 credit module and one 20 credit module, when they may take the 20 credit module). Students can opt for reassessment in either the September following the end of the academic year or during the course of the following academic year. However, some modules (chiefly those involving practical work) are **not** available in September. Students who are reassessed in the following year may choose to take the reassessment with or without tuition. Students who are reassessed with tuition are required to take both coursework and examination components of the module (and the new mark supersedes the original mark). Students who are reassessed without tuition may be allowed to carry forward the component which has been passed. The overall mark, averaged over coursework and examination, for reassessed modules is capped at 40%.

7. What makes the programme distinctive:

This is a Joint Honours programme run in collaboration with the School of Sport and Exercise Sciences. The programme involves physics plus essential mathematics in equal partnership with physical education and sports science. The physics content is essentially that of the first two years of the Physics programme spread over three years. The Sports Science content contains a very wide choice of options. Students graduating from this programme would be eligible to pursue many higher degrees or carry out many types of research in either subject area. The degree provides a particularly good start for a teaching career in secondary schools

The optional sandwich year provides the opportunity either to study abroad for a year (in another European country or in Australia) or to work in an industrial or research environment for a year. The year of study abroad introduces students to a new academic and cultural environment and complements their studies by offering subjects that may not be covered at Loughborough and developing language and other skills. The industrial placement exposes students to a workplace environment

and develops skills such as personal management, communication and team working.

8. Particular support for learning:

i) Departmental Support

The department has an integrated structure for the management, appraisal and planning of teaching and learning. This is comprised of a Director of Teaching, who manages the department's teaching committee and has overall responsibility for teaching matters, Programme Tutors, who have responsibility for the academic content and the general organisation of the programmes, and the academic welfare of the students, Year Tutors, who monitor students performance and oversee the organisation of the examinations and exam boards, and Personal Tutors who are responsible for matters relating to academic welfare.

On the first day of their academic studies, students receive a handbook from the department with important information including the management structure of the department, programme specifications and general points relating to coursework and examination. The students are also assigned a personal tutor who is responsible for their personal welfare who arranges to see them during the first semester. Thereafter the personal tutor arranges to see their tutees at important times, such as after examinations, or when problems have been raised in respect of the tutees by Year Tutors, Programme Tutors or the Director of Teaching.

The Physics Department has a well-equipped computer room/resource centre equipped with self-teaching packages and books, notes and other documents related to the physics modules. In addition to the self help facilities the centre is staffed one day per week in order to assist students with problems they have related to their physics work. Past exam papers are placed on the LEARN server and members of the department place lecture notes, problems and answers to past exam papers and background reading lists on this facility.

ii) University Support

Please refer to <http://www.lboro.ac.uk/admin/ar/templates/notes/lps>