Nottingham Trent University Course Specification

	Basic Course Information	
1.	Awarding Institution:	Nottingham Trent University
2.	School/Campus:	Science & Technology/Clifton Campus
3.	Final Award, Course Title and Modes of Study:	BSc (Hons) Sport Science & Mathematics FT BSc (Hons) Sport Science & Mathematics SW
4.	Normal Duration:	Full Time 3 years, Sandwich 4 years
5.	UCAS Code:	CG6C

6.	**Overview and general educational aims of the course**

BSc (Hons) Sport Science and Mathematics considers the scientific aspects of sport and exercise and combines this with a broad study of mathematics and statistics. Our degree offers a multidisciplinary approach to the science that underpins the improvement of both physical fitness and sporting performance. In addition, the mathematics and statistics content is targeted at the modelling and solution of a wide range of real world problems. The course offers a high level of practical application of theoretical knowledge leading to the acquisition of the skills and attributes expected by employers or for postgraduate studies.

The degree provides you with opportunities to study human response and adaptation to sport and exercise, as well as to monitor and analyse sport and exercise performance. The course provides opportunities to examine human performance from a biomechanical, physiological, and psychological perspective. We offer outstanding facilities such as the Sport Science Environmental Chamber, which is British Olympic Association Approved, and high speed 3-dimensional imaging equipment used to digitally capture human motion for technique analysis. Practical work underpins theory so that concepts come alive and you can see and experience the response(s) of the human body to physical activity. You will also study various facets of mathematics and statistics, including numerical methods, and will develop good problem solving skills.

A placement year, usually salaried, is an important feature of the course. It is optional, but it can give you a distinct advantage in the job market on graduating. We have an experienced Placements Office to provide support in finding a placement that is right for you.

In summary, the course aims to:

- Provide an integrated and interdisciplinary degree that offers both choice and specialisation.
- Produce graduates with theoretical knowledge and practical skills relevant to Sport Science.
- Enable graduates to excel in the use of mathematical, numerical, computational and statistical techniques.
- Prepare graduates for a wide range of employment within the sport industry

and the health and fitness industry, or indeed any industry requiring high levels of numeracy, as well as for postgraduate studies.

- Recruit students from a variety of academic backgrounds and to encourage and assist them to realise their academic potential and enhance their employment and career opportunities.

7.	**Course outcomes**
	Course outcomes describe what you should know and be able to do by the end of your course if you take advantage of the opportunities for learning that we provide.

	Knowledge and understanding
	By the end of the course you should be able to:

	K1.	Contextualise fundamental scientific concepts of sport and exercise science.
	K2.	Analyse human response and adaptation to physical activity (QAA).
	K3.	Apply physiological, biomechanical, and psychological principles for the assessment of human performance.
	K4.	Interpret and analyse data, information and theories through planning and research (QAA).
	K5.	Critically evaluate a particular aspect of physiology, biomechanics or psychology (QAA).
	K6.	Demonstrate knowledge and understanding of a broad range of mathematical and statistical techniques and their applications (M).
	K7.	Construct and analyse mathematical and statistical models of real-world phenomena and assess their utility (M).
	K8.	Explain the value of a sound theoretical underpinning to support statistical applications.
	K9.	Evaluate, select, and implement appropriate numerical techniques for a range of problems (M).

	Skills, qualities and attributes
	By the end of the course you should be able to:

	S1.	Demonstrate competence in scientific methods of enquiry, interpretation and analysis of relevant data and appropriate technologies (QAA).
	S2.	Use safely and competently laboratory and field based equipment for the assessment and monitoring of human performance.
	S3.	Apply appropriate mathematical and statistical techniques to problems, and critically evaluate and interpret the results (M).
	S4.	Use professional statistical and mathematical software packages and apply them to a range of problems.
	S5.	Construct mathematical arguments, identifying assumptions and conclusions, and present them clearly (M).
	S6.	Gather, evaluate, analyse and present numerical information (M).
	S7.	Formulate, analyse, and solve a range of problems.
	S8.	Demonstrate an understanding of the philosophical basis of scientific investigation (QAA).
	S9.	Communicate confidently and proficiently in written and oral formats (M).
	S10.	Devise, evaluate and sustain logical arguments.

	S11. Develop strategies for problem-solving relevant to sport science, using ideas and techniques, some of which are at the forefront of the discipline (QAA).
	S12. Demonstrate a high level of IT competency and numeracy (M).
	S13. Work effectively as part of a team, and work and learn independently (M).
	(M) indicates that the outcome has been mapped to the Mathematics, Statistics and Operational Research benchmark standards. (QAA) Indicates outcomes having specific reference to Quality Assurance Agency benchmark statements (Sport Science). These benchmark standards provide a national framework for describing the content and standards of a Bachelor's degree with honours in mathematics and sport based disciplines.
8.	**Teaching and Learning Methods**

In the majority of Sport Science modules, your teaching and learning is centred on lectures supported by practical classes. Theory taught in lectures is normally underpinned by laboratory sessions. Delivery of the course is enhanced through external guest speakers from National Governing Bodies, other Universities, and Research Teams. Lecture material is supported through e-resources. The University Virtual Learning Environment (NOW) is widely used to post summary slides of lectures, resources such as relevant research papers, and additional information about the module and course.

Practical Sport Science classes emphasise the acquisition of competence in the application of the fundamental principles of physiology, biomechanics, and psychology. Laboratory sessions involve problem solving and many also involve working with your subject to measure, assess and monitor their performance. Further time is allocated to the analysis, interpretation and evaluation of the results. You are expected to engage fully in practical sessions and utilise these opportunities to apply knowledge to the development of an individual's performance. Seminars are used to offer small group teaching environments, typically led by your needs, to review, discuss and consider aspects of taught material from either lecture or laboratory classes.

In the teaching of mathematics and statistics the following practices will be adopted:
- Lectures to introduce and develop concepts and to explore the application of these concepts.
- Directed learning to supplement the development of concepts.
- Computer Workshops to develop skills and to underpin the lecture material with concrete learning experiences.
- Seminars to support the lecture course and the consolidation and application phase of your learning process.
- Supervised project work to develop a deeper understanding of concepts and applications and to promote the development of personal skills.

The course emphasises and encourages independent learning and is structured so as to improve your ability to undertake self-directed learning. Supplementary reading, research and information gathering is expected to consolidate taught material.

V2 updated 09/03/12

	The University runs an online resource to support teaching and learning, referred to as a Virtual Learning Environment and known as the NTU On-line Workspace (NOW). All modules are represented on NOW and most use it to provide you with learning material and news associated with the module or the course.
9.	**Assessment Methods**
	The course utilises a variety of assessment methods to ensure that you can demonstrate your achievement of the course's learning outcomes.

Subject knowledge and understanding is mainly tested through unseen examinations, preparation of case studies, write-up of laboratory and practical work, oral and poster presentations.

Laboratory experiments and investigations are used to assess a range of practical skills. Your ability to formulate research questions, assess human performance, collate, present, interpret and evaluate findings of an investigation are assessed through the preparation of laboratory reports.

Mathematics and statistics are mainly assessed through coursework assignments and short tests, although you will also be assessed by means of group work and formal examinations.

Your communication skills, in written and oral formats, are assessed at numerous points throughout the course. Laboratory reports, poster presentations, essays and examinations provide you with an opportunity to demonstrate your writing skills. Oral presentations and, for example, the verbal defence of a poster, offer a means for you to demonstrate your verbal communication skills. |
| 10. | **Course structure and curriculum** |
| | The course is studied either Full Time over 3 years or over 4 years for the Sandwich mode. On the Sandwich route you will undertake a placement with a company between your second year and your final year. The placement will involve working for 9 months or more. In Full Time mode, you will go directly into the final year after your second year.

You will study a range of modules as indicated below. The Sport Science and Mathematics course develops your knowledge and skills along six themes that run through all levels of the course: mathematical methods; statistics; numerical methods; physiology; exercise psychology; and biomechanics. In the final year, students will undertake a supervised Project, either in mathematics or sport.

You need to obtain 360 cps (credit points), 120 cps per year, to gain the honours qualification. Your final degree classification will be based on your year 2 mark (weighting 25%) and your final year mark (weighting 75%). Students who do not |

obtain enough credit points may be eligible for one of the following awards: Certificate of Higher Education (120 cps); Diploma of Higher Education (240 cps); or Ordinary degree (300 cps).

Successful completion of the year of industrial experience is necessary for you to gain the Sandwich award. For this, you will write a report detailing and evaluating the work you undertook and your part in the overall company context. You will also receive a Diploma in Professional Practice.

Year 1

Mathematical Methods	20cps
Data Analysis	20cps
Introduction to Numerical Methods	20cps
Introduction to Sport & Exercise Physiology	20cps
Foundations of Sport & Exercise Psychology	20cps
Principles of Biomechanics	20cps

Year 2

Differential Equations & Transform Methods	20cps
Probability and Statistical Inference	20cps
Numerical Methods for Ordinary Differential Equations	20cps
Experimental Biomechanics	20cps
Applied Sport & Exercise Physiology	20cps
Practical Applications in Sport & Exercise Psychology	20cps

Year 3

Industrial Placement year for Sandwich students

Year 3/4

Project in Mathematics	20cps
Applied Biomechanics	20cps

Choose one of the following two modules:

Statistical Modelling	20cps
Linear Systems	20cps

Choose two of the following three modules:

Numerical Analysis & Dynamical Systems	20cps
Applied Statistics	20cps
Stochastic Processes	20cps

And choose one of the following four modules:

Advanced Topics in Sport & Exercise Psychology	20cps
Environmental Sports Physiology	20cps
Exercise Testing and Prescription for Health	20cps

Strength, Power & Endurance for Sport & Exercise	20cps

Or

Sport Project & Dissertation	40cps
Applied Biomechanics	20cps

Choose one of the following two modules:

Statistical Modelling	20cps
Linear Systems	20cps

Choose one of the following three modules:

Numerical Analysis & Dynamical Systems	20cps
Applied Statistics	20cps
Stochastic Processes	20cps

And choose one of the following four modules:

Advanced Topics in Sport & Exercise Psychology	20cps
Environmental Sports Physiology	20cps
Exercise Testing and Prescription for Health	20cps
Strength, Power & Endurance for Sport & Exercise	20cps

11.	**Admission to the course**

The admissions policy for this course is administered in accordance with the University regulations including a commitment to widening participation and equal opportunities.

For entry on to the CG6C Sport Science and Mathematics course you would normally be over 18 years of age and possess GCSE grade C or above in both Mathematics and English and 280 UCAS points at A2-level including grade B or above in Mathematics and grade C or above in any Science subject, PE or Psychology. It is preferred that your UCAS points come from a maximum of three A-levels or equivalent or a combination of two A-levels and two AS levels.

Equivalent UK and International qualifications are acceptable. The equivalence of these qualifications to the standard entry requirements are usually established with reference to the published UCAS Tariff (e.g. Irish leaving certificate, Scottish National Higher and International Baccalaureate), the information published by UCAS ("International Qualifications Guide" and "UCAS Admissions Guide and Decisions Processing Manual"), and the recommendations of UK Naric. OCN and Access HE qualifications may be acceptable if a sufficient number of level 3 units in Mathematics have been taken. Non-standard qualifications are referred to the admissions tutor for assessment.

If you wish to use Accreditation of Prior Experiential Learning (APEL) or Accreditation of Prior Certified Learning (APCL) for entry to this course, you will be assessed according to the standard procedures of the School of Science and Technology.

If you wish to use APEL for entry to the start of the course, or exceptionally, for advanced entry, you will be required to provide a detailed curriculum vitae outlining relevant experience. You will be asked to complete an appropriate assignment to enable you to demonstrate your learning for which equivalence is being claimed.

If you request APCL, you will be required to produce a transcript and details of the units/modules you have studied at your former institution to assist with the curriculum mapping process. This institution may be contacted before a final offer is made to confirm your suitability for the course of study.

If English is not your first language, you are expected to have a good command of spoken and written English. The minimum recommended requirement is the British Council IELTS grade 6.5 or CBTOEFL 213 or IBTOEFL 83 or TOEFL 550. Equivalent experience may include the successful completion of a non-UK degree in the English language or a significant period of residence/work placement in an English-speaking country, for which evidence should be provided. Where your ability to communicate in English is in doubt you may be asked to an interview.

Advanced entry would normally be into year 2 of the course, for which you would possess an appropriate qualification in Mathematics or an equivalent subject. This will normally be the completion of the first year of a University degree course elsewhere in the UK. In order to ensure potential applicants have suitable experience to enable them to successfully progress on to BSc (H) Sport Science and Mathematics, it is likely that the Admissions Tutor will request information about previous learning, for example transcripts and course content. Advanced entry into the final year may be considered in exceptional circumstances (e.g., successful completion of a Bachelor's degree and relevant certified/experiential learning).

12.	**Support for Learning**

There is an induction programme at the start of the first year. This gives an overview of the way the course runs and includes introductions to the IT and library resources. During induction you will receive a course handbook which contains the essential information about the course and the support we provide for your learning. You will also meet your Course Tutor and Year Tutor.

You are assigned a Course Tutor at the start of the course and regular meetings will take place throughout each year. Module Leaders, Year Tutors and a Course Manager oversee the smooth running of the course and they also serve as an additional source of support and advice for you.

Extensive online module information including learning materials is provided on the University Virtual Learning Environment. This also includes course information such as the course handbook and module specification documents. We have excellent

computing facilities with some 24 hour availability for IT labs.

The school has a Student Information Desk for assessment hand-in and return, queries about fees, and other general queries.

If you decide to opt for the Sandwich award, the Mathematics Placements and Employability Tutor will work with you to develop your CV and will help you to target your applications so that you get a placement that is right for you. You will be assigned a visiting tutor who will visit you at the company.

In addition to the above support, the University Student Support Services can give you extensive support and advice on a range of issues, e.g. financial problems, dyslexia and disability, and personal problems.

13.	**Graduate destinations / employability**

Graduate employability is fundamental to the strategic aims of Nottingham Trent University, as reflected by the fact that NTU is consistently placed close to the top of the league table of all UK Universities for graduate employment. Indeed 94% of our graduates* from full-time undergraduate courses are employed or engaged in further study six months after leaving (*of those available for work, HESA survey 2009/10).

There are a wide range of career opportunities in the sport and leisure, and health and fitness industries, which are available to our students upon completion of the course. Indeed, the sport, exercise, health and leisure industry is an expanding area of employment. Opportunities exist with local, regional and national authorities to develop services and facilities for sport and exercise provision; the private health and fitness sector; health consultancy; sports development agencies; and coaching, to name a few. There is also a significant demand for Mathematicians and Statisticians, for whom employment prospects are good.

As a graduate from this course, you will be equipped with the knowledge and skills needed to engage in further study, either while at your place of employment (for professional and personal development) or at university (for a higher degree).

In addition to the expertise available within the School, the University has a comprehensive careers service open to all students to assist in securing employment (http://www.ntu.ac.uk/careers/).

14.	**Course standards and quality**

All aspects of quality management within the School are in accordance with the University's Academic Standards and Quality Handbook. The Course Management Team, which includes the Course Manager and Module Leaders, oversees the operational arrangements for the Course. In addition, the Course Committee, central to which are the student representatives, meets regularly throughout the year to

review, evaluate and develop the Course. Formal Course monitoring takes place at the end of each module through the administration of questionnaires offering closed and open ended questions, which is in addition to informal feedback received from students throughout the year.

Overarching responsibility for quality control lies with the School Academic Standards and Quality Committee whose remit is to provide guidance and support to academic Courses. External Examiners offer further quality control through monitoring academic standards, moderation of assessment tasks and processes. Feedback from the Course Committee and student evaluation at modular and course level inform the Course Standards and Quality Report (CSQR), which reviews and evaluates the student experience at course level. In turn the Course Standards and Quality Report informs the Schools Standards and Quality Report (SSQR) which is presented to the University as part of the institutions quality assurance and enhancement cycle.

15.	**Assessment regulations** This course is subject to the University's Common Assessment Regulations (located in its <u>Academic Standards and Quality Handbook</u>). Any course specific assessment features are described below:
	There are no programme specific exceptions from the University regulations.

16.	**Additional Information**	
	Collaborative partner(s):	N/A
	Course referenced to national QAA Benchmark Statements:	Mathematics, Statistics and Operational Research.
	Course recognised by:	
	Date implemented:	1st September 2015
	Any additional information:	
	Course specification updated:	November 2014