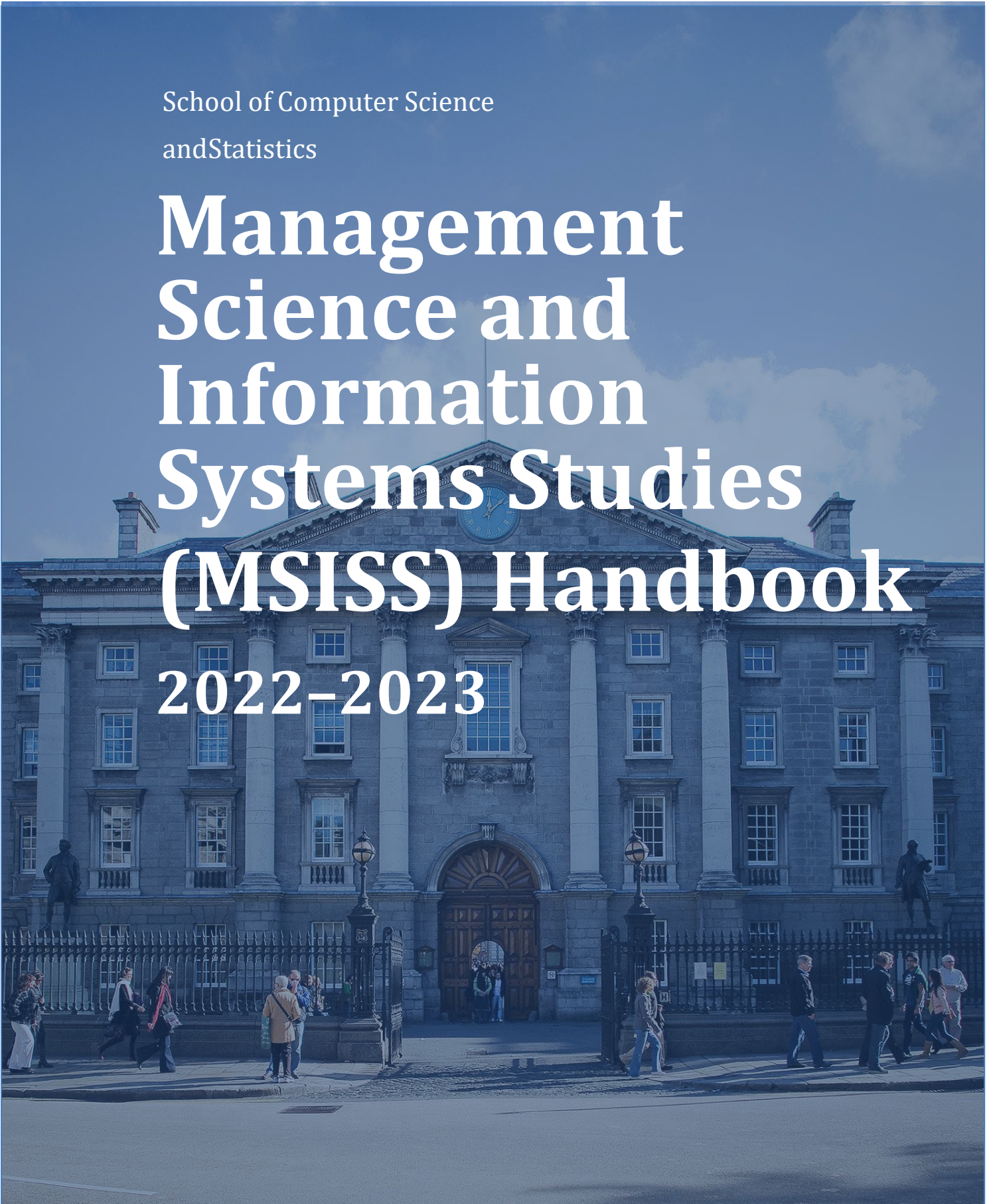**Trinity College Dublin**
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

School of Computer Science
andStatistics

Management Science and Information Systems Studies (MSISS) Handbook

2022–2023

Contents

PART I - Information

1. Introduction

This is the course handbook of the Management Science and Information Systems Studies (MSISS) degree programme offered by the School of Computer Science and Statistics in Trinity College Dublin. The MSISS degree programme is a four-year honours degree course leading to a BA Moderatorship in Management Science and Information Systems Studies. This handbook contains information and regulations for all MSISS students. It provides a guide to what is expected of you on this programme, and the academic and personal support available to you. Please retain it for future reference.

We are confident that you will find this programme challenging and demanding, and we hope that you will find your studies at Trinity College Dublin both stimulating and rewarding. Our courses have been designed to offer students a dynamic, structured and coherent learning experience. The MSISS programme has several features which we believe will contribute to your studies being an effective and enjoyable period of personal and academic development.

If you are a new student to university, we invite you to read First Year in University (on page 9), which may help you understand what you need to do to have an enjoyable and productive time at college. You are also very strongly recommended to meet your tutor (see page 5) as he or she is your advocate in College and can also provide you with support should you have any difficulties.

We wish you every success in the coming year.

Alessio Benavoli
Course Directors, MSISS

2. A Note on this Handbook

Information provided in this handbook is believed to be accurate at the time of preparation except where noted. Any necessary revisions will be notified by College email. Please note that, in the event of any conflict or inconsistency between the General Regulations published in the University Calendar and information contained in course handbooks, the provisions of the General Regulations will prevail. The University Calendar is available at http://www.tcd.ie/calendar/.

This handbook is available from the School of Computer Science and Statistics website.

"This Programme Handbook should be read in conjunction with the School of Computer Science and Statistics Undergraduate Student Handbook, which you can find on our website (teaching.scss.tcd.ie)."

3. MSISS Programme Information

MSISS is one of the most challenging and exciting undergraduate degree level courses available in Ireland. It was originally set up in 1980 in the Engineering faculty to provide a degree that would have a greater emphasis on management science and quantitative methods than was to be found in traditional engineering degrees; until 1995, it was called Management Science and Industrial Systems Studies. Over the past 38 years the programme has continuously evolved and changed so that, at this stage, its roots in engineering have almost disappeared to be replaced by a focus on modern information systems.

Today's MSISS programme is designed to bridge a different gap - that between business, information technology and management science. This change reflects changes in society and technology and in particular what our own graduates tell us about what is happening out there in the world of work. The demand for graduates with both business and quantitative skills and a firm understanding of information technology has grown rapidly over the past ten years and is likely to continue to increase for the foreseeable future.

The primary objective of the MSISS programme is to produce graduates who are numerate as well as business and computer literate and who have a solid understanding of how to approach and solve practical problems using a variety of tools and techniques. To do this represents a considerable challenge, which makes MSISS one of the most interesting courses around. We hope you find that MSISS is both an exciting and challenging course that keeps you on your toes for the next four years.

The programme has three main streams:

- ***Business and Management*** - Subjects covered include economics, management, finance and organisational psychology. Most of the modules in this area are taken in conjunction with Business Studies students.

- ***Quantitative Methods*** - It is a key objective of the course that students be numerate and at home with important mathematical and statistical tools. To this end, this part of the programme encompasses mathematics, statistics and management science/operations research methods.

- ***Information Technology and Systems*** - Emphasis is on the practical application of IT, but the programme starts with basics, including fundamentals of computing and use of end user tools such as spreadsheets and word processing. In later years you will go on to study information systems, databases and state of the art systems development techniques.

While the above areas make up the core of the programme, there is also a firm emphasis on personal skills such as verbal communication, interviewing, teamwork and report writing. In some cases, these will be taught explicitly. In other modules, these skills are woven into the fabric of the teaching approach. The course and, in particular, the modules in the third and fourth years, are under constant review, so it is probable that the subjects in the final two years will be slightly different by the time you get there. Changes will be incremental so don't worry too much about this. MSISS subject skills are built up in layers.

PART II - Regulations

3.1.   Programme Architecture

Students typically enter Year 1 from secondary school via the Central Applications Office (CAO) system. Suitably qualified students may also join the programme on the recommendation of the Course Director. Students normally exit the programme at the end of Year 4, with a B.A. (Mod.) in Management Science and Information Systems Studies, though provision is made for students to exit the programme with an ordinary B.A. degree at the end of Year 3.

The terms *Junior Freshmen*, *Senior Freshmen*, *Junior Sophister* and *Senior Sophister* are widely used in Trinity to refer to a first-year, second-year, third-year and fourth-year student respectively; thus, for example, Junior Freshmen year, (or JF year), refers to Year 1. The teaching year is divided into two twelve-week semesters. The first semester (running roughly September to December) is known as Michaelmas Term (MT), the second (running roughly January to April) is known as Hilary Term.

In the Freshmen years (JF and SF) instruction is given in the foundations of MSISS with compulsory courses taken in its three main strands of *Business and Management, Quantitative Methods, and Information Technology and Systems*. In the Sophister years (JS and SS), students may select a number of options in addition to core courses. In the final SS year students undertake a capstone project working with a real client.

3.1.1.   Rules for Handing in in-term Assessments

Many MSISS modules include an element of continuous assessment. Different departments have their own rules on assessments and homework. You should make sure that you are familiar with these rules and that you understand them.

A coversheet should be completed and attached to **ALL** work submitted in hard or soft copy or via Blackboard. A template is available at: https://scss.tcd.ie/undergraduate/msiss/quicklinks.php

The coversheet includes the declaration:

> **I have read and I understand the plagiarism provisions in the General Regulations of the University Calendar for the current year, found at http://www.tcd.ie/calendar.**
>
> **I have also completed the Online Tutorial on avoiding plagiarism 'Ready Steady Write', located at http://tcd-ie.libguides.com/plagiarism/ready-steady-write.**

The MSISS rules for handing in and marking of assessments are summarised below.

1.   Unless otherwise stated, the deadline for all MSISS continual assessment work will be 12.00 noon on a Monday. The lecturer will give notice of alternative deadlines. Where non-standard procedures apply, they will give notice of:

- the deadline;
- where and how assessments are to be submitted;
- the penalties for late submission;
- the procedures for granting permission for late submissions.

Otherwise the default rules as set out below will apply.

2.   The default procedure for assignment submission is as follows.

All module work must be handed in to the School Reception. When handing in an assignment or project, you must sign the "Student Assessment Sign-in" sheet. The date and time the assessment is handed in is noted on this sheet. Assessments must be clearly labelled and show:

- Your name;
- The correct description of the assignment (e.g. Applied Prob. Exercise 3);
- The name of the appropriate lecturer.

3.   **Penalties** for late submission are as follows. Material submitted late will be deducted 20% of the mark that would otherwise have been awarded for each day (or part thereof) that it is late. Work submitted more than 24 hours late will incur a penalty of 40% and so on. Work submitted more than 96 hours late will receive a mark of zero. For MSISS this means that work submitted after 12.00noon on the Friday of the relevant week will receive a mark of zero.

4.   **Extensions** are normally granted only if you can present a good reason for not being able to submit on time, and not retrospectively. If you need an extension you should speak to your tutor not to the Lecturer. Lecturers will normally grant you an extension following a letter from your tutor who must ask for a specified number of days extension. Tutors will only recommend extensions if the difficulties could not have been foreseen.

Sometimes, where there is a general problem, a Lecturer may award an extension to the entire class. In this case, the details of the extension will be notified to all students. The penalty will operate as before, after the extension. If the assessment in question is a team project, and the extension is sought - through the tutor - by one team member, the maximum extension that can be given is 1 week.

5.   **You should always retain a copy of everything submitted in case of dispute; a paper copy is recommended**. If kept in electronic form, you should have a backup copy. This is important. If, for example, a Lecturer says he/she never received your submission and you do not have a copy, it may be difficult to prove that you ever submitted it.

Coursework is an integral part of MSISS and it is essential that every student participate fully in the coursework associated with each module. If a student does not make a serious attempt at the coursework in a module this is considered in the same way as if a student does not make a serious attempt at an examination.

Any student who submits less than two thirds of their coursework in a module is considered as not making a serious attempt. In such circumstances, if the student fails the module overall, they may be excluded from the degree programme at the discretion of the Examination Board.

In really exceptional problems, e.g. your tutor is ill, you should speak to the Course Director.

3.2.   **Programme Structure, Module Descriptors, & Workload**

Brief descriptions of the modules listed below are provided on the relevant year page of the course website https://teaching.scss.tcd.ie/ Full details, including learning outcomes, book recommendations and important evaluation and assessment criteria are available at http://my.tcd.ie.

Assessment in each subject is generally a combination of an exams and coursework. The method which is used to combine exam and coursework marks into the overall mark is at the discretion of the course lecturer and is set out in each Module Descriptor. Students should make themselves aware of the assessment regulations for each module. Module Descriptors are available through the course website.

Management Science and Information Systems Studies follows the common **Science** curriculum architecture[1].

In Year 1 and Year 2, students are required to study:
- 40 credits in core subject (Statistics, Management Science, Information Systems and Mathematics)
- 20 credits in Open Modules in Business, Economics, Computer Science or other disciplines that complement the MSISS curriculum.

In Year 3, students are required to study:
- 40 credits in core subject (Statistics, Management Science, Information Systems and Mathematics)
- 10 credits in Open Modules in Business, Economics, Computer Science or other disciplines that complement the MSISS curriculum.
- 10 credits in Trinity Elective Modules

In Year 4, students must undertake a 20 credit capstone project and a further 40 credits in other modules.

[1] https://www.tcd.ie/TEP/curriculum_principles_&_programme_architecture.php

3.2.1. Year 1 – Junior Freshmen 2022/2023

MSISS students take the following modules:

Year 1 - MSISS	
2022/23 (Operational From: 2019/2020)	
Michaelmas Term	**Hilary Term**
Software Applications I STU11001 / 5 credits	Statistical Analysis I STU11002 / 5 credits
Introduction to Programming I CSU11011 / 5 credits	Introduction to Programming II CSU11012 / 5 credits
Introduction to Management Science STU11004 / 10 credits	
Engineering Mathematics I MAU11E01 / 5 credits	Engineering Mathematics II MAU11E02 / 5 credits
OPEN MODULES 20 credits (There is no elective choice in Year 1; the BUU and ECU modules are considered by College to fulfil the Open Module requirements for Year 1 MSISS)	
Open Modules	
Fundamentals of Management and Organisation BUU11510 / 10 credits	
Introduction to Economics A ECU11011 / 5 credits	Introduction to Economics B ECU11012 / 5 credits

3.2.2. Year 2 – Senior Freshmen 2022/2023

MSISS students take the following modules:

Year 2 - MSISS	
2022/23 (Operational From: 2020/2021)	
Michaelmas Term	**Hilary Term**
Engineering Mathematics III MAU22E01 / 5 credits MSISS pre-req MAU11E01 & MAU11E02	Software Applications II STU2201A / 5 credits MSISS pre-req STU11001
Applied Probability I STU22004 / 5 credits MSISS pre-req MAU11E01 & MAU11E02	Applied Probability II STU22005 / 5 credits MSISS pre-req STU11002 & STU22004
Management Science Methods STU22006 / 10 credits MSISS pre-req STU11004	
Algorithms and Data Structures I CSU22011/5 Credits	Algorithms and Data Structures II CSU22012/5 Credits Pre-req CSU22012
OPEN MODULES 20 credits	
Open Modules	
Introduction to Accounting BUU22530 / 5 credits Prerequisites BUU11510	Introduction to Finance BUU22550 / 5 credits
Intermediate Economics A ECU22011 / 5 credits prerequisite ECU11011	Intermediate Economics B ECU22012 / 5 credits prerequisite ECU11012
Economy of Ireland A ECU22021/5 credits prerequisite ECU11011	Economy of Ireland B ECU22022/5 credits prerequisite ECU11012

3.2.3. Year 3 – Junior Sophister 2022/2023

MSISS students take the following modules:

Year 3 - MSISS	
Operational From: 2021/2022	
Michaelmas Term	**Hilary Term**
Multivariate Linear Analysis STU33011 / 5 credits	Information Management II CSU34041 / 5 credits
Statistical Analysis III STU33002 / 5 credits	Information Systems STU33005 / 5 credits
Forecasting STU33010 / 5 credits	Research Methods STU33004 / 5 credits
Management Science Case Studies STU33008 / 10 credits MSISS pre-req STU11002, STU11004 and STU22006	
Management Science Case Studies A (Erasmus out S2) STU33008A / 5 credits	Students out on Erasmus in S1 choose either STU34504 or STU34506
OPEN MODULES (10 credits – listed below)	
TRINITY ELECTIVE MODULE (5 credits) List released by College	TRINITY ELECTIVE MODULE (5 credits) List released by College
Open Modules	
Financial Accounting I BUU33531 / 5 credits prerequisite BUU22530 / 5 credits	Financial Accounting II BUU33532 / 5 credits prerequisites BUU22530 & BUU33531
Economics Analysis A ECU33011 / 5 Credits prerequisite ECU22011 & ECU22012	Economics Analysis B ECU33012 / 5 Credits prerequisite ECU22011 & ECU22012
Mathematical Economics A ECU33081/5 credits	
Econometrics A ECU33091/5 credits	Econometrics B ECU33092/5 credits prerequisite ECU33091
Investment Analysis A ECU33051/5 credits prerequisite ECU22011 & ECU22012	Investment Analysis B ECU33052/5 credits prerequisite ECU22011 & ECU22012
Introduction to Functional Programming CSU34016 / 5 Credits	Corporate Finance and Equity Valuation BUU33630 / 5 Credits

- Please note that not all electives may run in a given year, depending on demand and availability of appropriate staff to teach the electives.
- Students may change options by informing the Teaching Unit up to the end of the second week of Michaelmas Term.
- Late changes will not be accepted.

3.2.4. Year 4 – Senior Sophister 2022/2023

In Year 4 (Senior Sophister) students take the following modules:

Year 4 - MSISS	
Operational From: 2022/2023	
Michaelmas Term	**Hilary Term**
Final Year Project (Capstone) STU44091 / 20 credits	
Strategic Information Systems STU45006 / 10 credits	
Data Analytics STU44003 / 10 credits	
ELECTIVE MODULES (20 credits)	
Subject Electives	
Decision Analysis STU44005 / 5 Credits	
International Finance BUU44640 / 5 Credits Prerequisite BUU22550 Introduction to Finance	Derivatives BUU44650 / 5 Credits Prerequisite BUU22550 Introduction to Finance
Financial Reporting and Analysis I BUU44531 / 5 Credits Perquisites BUU33531/BUU33532	Financial Reporting and Analysis II BUU44532 / 5 Credits Perquisites BUU44531
Stochastic Models in Space and Time I STU34503 / 5 credits	Stochastic Models in Space and Time II STU34504 / 5 credits
Modern Statistical Methods I STU34505 / 5 credits	Modern Statistical Methods II STU34506 / 5 credits
Human Factors CSU44051 / 5 Credits	Entrepreneurship & High Tech Venture Creation CSU44081 / 5 Credits

- Please note that not all electives may run in a given year, depending on demand and availability of appropriate staff to teach the electives.
- Students may change options by informing the Teaching Unit up to the end of the second week of Michaelmas Term.
- Late changes will not be accepted.

3.3.   Marking Scale

Grades for individual subjects and overall grades are awarded based on the (rounded) percentage achieved as follows:

Grade	Mark
I	70%-100%
II.1	60%-69%
II.2	50%-59%
III	40%-49%

3.4.   Progression Regulations

Semester one modules students are examined at the end of the semester one and semester two modules are examined at the end of the second semester. To complete an academic year (and progress to the next year of the programme), students must be successful at the Annual and/or Supplemental Examinations.

In order to be successful in the Annual or Supplemental Examinations, students must pass all modules. The pass mark is 40%. Alternatively, students may pass by compensation if they (i) achieve an overall weighted average pass mark and (ii) pass modules totalling 50 credits, and (iii) get a 'Qualified Pass' mark (35%) in the failed module(s) (either one 10-credit module or one/two 5-credit modules).

If a student is successful in the Annual Examinations his/her overall mark will be calculated as the average of each module's mark weighted by its ECTS rating and an overall grade awarded (according to the scale above). If a student is unsuccessful in the Annual Examinations, he/she is required to take a supplemental examination or assessment in all modules in which they have not achieved a pass mark, as indicated in the examination results.

Permission to take supplemental examinations will not normally be granted to students whom the Court of Examiners considers not to have made a serious attempt at the annual examinations unless an adequate explanation is furnished. The method of assessment of modules may vary between annual and supplemental examinations.

Supplemental examinations are held in Michaelmas term each year (i.e. towards the end of the summer break).

If a student is successful in the Supplemental Examinations his/her overall mark will be calculated as the average of each module's mark (weighted by its ECTS rating and an overall grade awarded (according to the scale above). This average is based on the marks achieved in the supplemental examinations together with the marks achieved in the annual examinations for the modules in which supplemental examinations/assessments were not required.

A student who feels their returned mark is incorrect should first ask to view their script with the examiners, and may (through their tutor) request a recheck, or lodge an appeal. A student who does not pass by either of the methods above is required to repeat the year in full.

3.4.1. Repeating a Year

When a student must repeat a year, they must do so in full (i.e. repeating all modules and all assessment elements of those modules). Students may repeat years 1-4 of the programme but may only repeat a particular year once and may only repeat two years within the programme.

In exceptional circumstances some students are permitted to repeat off-books (taking only examinations in the subjects which they failed). This is applied for through the tutor.

3.5. Awards

3.5.1. Ordinary BA Degree (exit only)

Students who have passed their Year 3 examinations may have an ordinary BA degree conferred if they do not choose, or are not allowed, to proceed to Year 4 of the programme, or if they fail to complete satisfactorily Year 4 of the course. Except by permission of the University Council, on the recommendation of the Executive Committee of the School of Computer Science and Statistics, an ordinary BA degree may be conferred only on candidates who have spent at least two years in the University.

3.5.2. Moderatorship (Honors) Degree

The B.A. Mod. degree result is awarded if a student has successfully completed Years 3 and 4, based on a combined mark from the Year 3 examinations (contributes 30% of the moderatorship result) and Year 4 examinations (contributes 70% of the moderatorship result).

Where students are awarded an honours degree, the class of degree awarded is based on the weighted average mark achieved as follows: First Class Honors: 70%-100%, Second Class Honors, First Division: 60%-69%, Second Class Honours, Second Division: 50%-59%, Third Class Honors: 40%-49%.

3.6. External Examiner

The external examiner for 2021-2024 is Prof. Lesley Walls of the University of Strathclyde. They are involved in ensuring that examinations in the Sophister years are run properly in terms of how the exam papers are set and assessed.