2020/1 - CMP-4002B COMPUTING PRINCIPLES

Spring Semester, Level 4 module
(Maximum 180 Students)
UCU: 20 Organiser: Dr Pierre Chardaire
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Examination with Coursework or Project
Timetable Slot:G2\+, E1\, G2/¦B2
Exam Period:SPR-02

The module introduces formulations and techniques essential for any degree in computing science.

2020/1 - CMP-4009B PROGRAMMING FOR APPLICATIONS

Spring Semester, Level 4 module
(Maximum 70 Students)
UCU: 20 Organiser: Dr James Mapp
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Examination with Coursework or Project
Timetable Slot:B1, D1, B2
Exam Paper(hrs):2 Exam Period:SPR-02

IN TAKING THIS MODULE YOU CANNOT TAKE CMP-5020B

The purpose of this module is to give you a solid grounding in the essential features of programming. The module is designed to meet the needs of the student who has not previously studied programming.

2020/1 - CMP-4011B ACTUARIAL SKILLS 1

Spring Semester, Level 4 module
(Maximum 50 Students)
UCU: 20 Organiser: Mr Will Carpenter
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Examination with Coursework or Project
Timetable Slot:G2/-B2\, I3
Exam Period:SPR-02

In taking this module, in addition to classes led by UEA academics, you will have contact with practicing actuaries. You will develop a good understand of the traditional areas in which actuaries work. You will also begin to develop and practice communication skills, particularly those related to future employment. You will be given the opportunity to identify the skills you already have and to consider how you can develop further relevant skills.

2020/1 - CMP-5010B GRAPHICS 1

Spring Semester, Level 5 module
(Maximum 80 Students)
UCU: 20 Organiser: Dr Stephen Laycock
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Examination with Coursework or Project
Timetable Slot:F2, G2/, A2¦G1
Exam Paper(hrs):2 Exam Period:SPR-02

BEFORE TAKING THIS MODULE YOU MUST TAKE CMP-4008Y OR TAKE CMP-4009B OR TAKE CMP-5020B OR TAKE CMP-4004Y OR TAKE CMP-4005Y

This module will provide you with an introduction to the fundamentals of computer graphics. You will gain a strong foundation in computer graphics, focusing on 2D graphics, algorithms and interaction. You need to have a good background in programming to take this module. OpenGL is used as the graphics API with examples provided in the lectures and supported in the laboratory classes.

2020/1 - CMP-5012B SOFTWARE ENGINEERING 1

Spring Semester, Level 5 module
(Maximum 184 Students)
UCU: 20 Organiser: Dr Rudy Lapeer
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Project
Timetable Slot:D1, A1/-F2\¦F1/-B1\, D2
Exam Period:SPR-02

BEFORE TAKING THIS MODULE YOU MUST TAKE CMP-4008Y OR TAKE CMP-4009B OR TAKE CMP-5020B

Software Engineering is one of the most essential skills for work in the software development industry. You will gain an understanding of the issues involved in designing and creating software systems from an industry perspective. You will be taught state of the art phased software development methodologies focusing on the activities of initial class model design to actual operational software systems. These activities are complemented with an introduction into software project management and development facilitation.

2020/1 - CMP-5017B APPLIED STATISTICS A

Spring Semester, Level 5 module
(Maximum Students)
UCU: 20 Organiser: Dr Aristidis K Nikoloulopoulos
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Coursework
Timetable Slot:G2\, H3, G+¦G/¦B2

BEFORE TAKING THIS MODULE YOU MUST TAKE CMP-4004Y OR TAKE CMP-

4005Y OR TAKE MTHA4001Y

This is a module designed to give students the opportunity to apply statistical methods in realistic situations. While no advanced knowledge of probability and statistics is required, we expect students to have some background in probability and statistics before taking this module. The aim is to teach the R statistical language and to cover 3 topics: Linear regression, and Survival Analysis.

2020/1 - CMP-5019B APPLIED STATISTICS B

Spring Semester, Level 5 module
(Maximum 30 Students)
UCU: 20 Organiser: Dr Aristidis K Nikoloulopoulos
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Coursework
Timetable Slot:G2\, H3, G+¦G/¦B2
Exam Paper(hrs):

This is a module designed to give students the opportunity to apply statistical methods in realistic situations. While no advanced knowledge of probability and statistics is required, we expect students to have some background in probability and statistics before taking this module. The aim is to teach the R statistical language and to cover 3 topics: Linear regression, ANOVA, and Survival Analysis.

2020/1 - CMP-5020B PROGRAMMING FOR NON-SPECIALISTS

Spring Semester, Level 5 module
(Maximum 40 Students)
UCU: 20 Organiser: Dr James Mapp
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Examination with Coursework or Project
Timetable Slot:B1, B2, B3
Exam Paper(hrs):2

IN TAKING THIS MODULE YOU CANNOT TAKE CMP-4009B OR TAKE CMP-4008Y

The purpose of this module is to give you a solid grounding in the essential features of programming. The module is designed to meet the needs of the student who has not previously studied programming.

2020/1 - CMP-5037B NETWORKS

Spring Semester, Level 5 module
(Maximum 100 Students)
UCU: 20 Organiser: Dr Ben Milner

(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Examination with Coursework or Project
Timetable Slot:C2/, B3, D3¦E2\+
Exam Paper(hrs):2 Exam Period:SPR-02

BEFORE TAKING THIS MODULE YOU MUST TAKE CMP-4008Y OR TAKE CMP-4009B

Explore how networks are designed and implemented to provide reliable data transmission. You will take a layered approach to the study of networks, with emphasis on the functionality of the OSI 7 layer reference model and the TCP/IP model. You will examine the functionality provided by each layer and how this contributes to overall reliable data transmission that the network provides, with a focus on the practical issues associated with networking such as real-time delivery of multimedia information (e.g. VoIP) and network security. Labs and coursework are highly practical and underpin the theory learnt in lectures.

2020/1 - CMP-5042B Applied Statistics

Spring Semester, Level 5 module
(Maximum 999 Students)
UCU: 10 Organiser: Professor Elena Kulinskaya
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Coursework
Timetable Slot:ANY
Exam Paper(hrs):

This module considers both the theory and practice of statistical modelling of time series. Students will be expected to analyse real data using R.

2020/1 - CMP-5043B LINEAR REGRESSION USING R

Spring Semester, Level 5 module
(Maximum 60 Students)
UCU: 10 Organiser: Dr Aristidis K Nikoloulopoulos
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Coursework
Timetable Slot:G2\¦G2+¦G2/, B2, H3

This is a module designed to give you the opportunity to apply linear regression techniques using R. While no advanced knowledge of probability and statistics is required, we expect you to have some background in probability and statistics before taking this module. The aim is to provide an introduction to R and then provide the specifics in linear regression.

2020/1 - CMP-5044B UBIQUITOUS COMPUTING

Spring Semester, Level 5 module
(Maximum 45 Students)
UCU: 20 Organiser: Dr Min Aung

Module Type: Coursework and Project
Timetable Slot:F2, A2-G1\

BEFORE TAKING THIS MODULE YOU MUST TAKE CMP-4008Y OR TAKE CMP-4009B

In this module we will introduce the multifaceted topic of Ubiquitous Computing. You will learn about how computing power can be taken away from desktop computer setting and be applied anywhere. The module draws upon many other areas such as Signal Processing, Machine Learning, Human Computer Interaction, Internet of Things, Networks, and the use of hardware such as microcontrollers, various sensors to create systems that sense and interpret the outside world to help solve a wide range of problems. These systems can be wearable devices, smartphone apps that use the phone's sensors, or bespoke devices that can be deployed in buildings, vehicles, urban and natural environments. This is project and coursework orientated module with an emphasis on developing your own ideas to gain the skills needed to take the power of computing to be everywhere.

2020/1 - CMP-6002B MACHINE LEARNING

Spring Semester, Level 6 module
(Maximum 60 Students)
UCU: 20 Organiser: Professor Tony Bagnall
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Examination with Coursework or Project
Timetable Slot:F1*A2\, B1¦D1
Exam Paper(hrs):3 Exam Period:SPR-02

This module covers the core topics that dominate machine learning research: classification, clustering and reinforcement learning. We describe a variety of classification algorithms (e.g. Neural Networks, Decision Trees and Learning Classifier Systems) and clustering algorithms (e.g. k-NN and PAM) and discuss the practical implications of their application to real world problems. We then introduce reinforcement learning and the Q-learning problem and describe its application to control problems such as maze solving.

2020/1 - CMP-6003B SYSTEMS ENGINEERING

Spring Semester, Level 6 module
(Maximum 60 Students)
UCU: 20 Organiser: Dr Pam Mayhew
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Examination with Coursework or Project
Timetable Slot:G2\, E1, G+¦G/
Exam Paper(hrs):3 Exam Period:SPR-02

This module draws together a wide range of material and considers it in the context of developing modern large-scale computer systems. Topics such as Systems Thinking, Causal Loop Diagrams, Systems Failure, Outsourcing, Quality, Risk Management, Measurement, Project Management, Software Process Improvement, Configuration Management, Maintainability, Testing, and Peopleware are covered in this module. The module is supported by well documented case studies and includes guest speakers from industry.

2020/1 - CMP-6034B ALGORITHMS FOR BIOINFORMATICS

Spring Semester, Level 6 module
(Maximum 20 Students)
UCU: 20 Organiser: Dr Steven Hayward
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Examination with Coursework or Project
Timetable Slot:F2*D3\, E2\+
Exam Paper(hrs):3 Exam Period:SPR-02

A brief introduction to the basics of molecular biology will be given, and so no background in biology is required. Topics will include sequence analysis, RNA and protein structure, genome assembly and phylogenetics. Lecturers will highlight the relevance of the material to cutting-edge research and in applications such as understanding human diseases, developing new drugs, improving crop plants, and uncovering the origins of species. Emphasis will be focused on the fundamental algorithms that are used in each of these areas.

2020/1 - CMP-6035B COMPUTER VISION

Spring Semester, Level 6 module
(Maximum 36 Students)
UCU: 20 Organiser: Dr Michal MacKiewicz
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Coursework
Timetable Slot:G2+/, D3¦E2\+
Exam Period:SPR-02

BEFORE OR WHILE TAKING THIS MODULE YOU MUST TAKE CMP-4005Y OR TAKE CMP-5006A OR TAKE CMP-5020B OR TAKE CMP-4009B OR TAKE CMP-6026A OR TAKE CMP-6006A OR TAKE CMP-6002B

Computer Vision is about “teaching machines how to see”. You will study methods for acquiring, analysing and understanding images in both lectures and laboratories. The practical exercises and projects that you undertake in the laboratory will support the underpinning theory and enable you to implement contemporary computer vision algorithms.

2020/1 - CMP-6045B DEVELOPING SECURE SOFTWARE

Spring Semester, Level 6 module
(Maximum 60 Students)
UCU: 20 Organiser: Dr Oliver Buckley
(UG) MODULE - 40% PASS ON AGGREGATE
Module Type: Coursework and Project
Timetable Slot:F2, A2¦G1

Our increasing reliance on software systems to manage our personal data means that there is a growing requirement to deliver robust and secure software. This module will focus on the importance of designing software with security in mind. This will include elements of ethical hacking and vulnerability testing as well as the techniques and tools used to create secure software and to maintain the confidentiality, integrity and availability of the systems and data.

2020/1 - CMP-6046B UBIQUITOUS COMPUTING

Spring Semester, Level 6 module
(Maximum 45 Students)
UCU: 20 Organiser: Dr Min Aung

Module Type: Coursework and Project
Timetable Slot:H3,C1-B3\
Exam Paper(hrs):

In this module we will introduce the multifaceted topic of Ubiquitous Computing. You will learn about how computing power can be taken away from desktop computer setting and be applied anywhere. The module draws upon many other areas such as Signal Processing, Machine Learning, Human Computer Interaction, Internet of Things, Networks, and the use of hardware such as microcontrollers, various sensors to create systems that sense and interpret the outside world to help solve a wide range of problems. These systems can be wearable devices, smartphone apps that use the phone’s sensors, or bespoke devices that can be deployed in buildings, vehicles, urban and natural environments. This is project and coursework orientated module with an emphasis on developing your own ideas to gain the skills needed to take the power of computing to be everywhere.