Accessibility statement

Data 1 - COM00017C

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- **Department**: Computer Science
- **Module co-ordinator**: Dr. Simos Gerasimou
- **Credit value**: 10 credits
- **Credit level**: C
- **Academic year of delivery**: 2020-21
  - See module specification for other years: 2019-20

Module summary

Introduction to Data Science

Module will run

Occurrence	Teaching cycle
A	Spring Term 2020-21 to Summer Term 2020-21

Module aims

Students will be introduced to key concepts required to undertake rigorous and valid data analysis. Students will be introduced to processes for collecting, manipulating and cleaning data, while gaining experience in judging the quality of data sources. Students will be introduced to the key statistical tests for frequentist data science, where specific theories are explored and tested via descriptive and inferential statistics. Students will apply their existing programming knowledge to execute these tests in an appropriate programming language using existing statistical libraries.

Module learning outcomes

D101	Distinguish between different types of data that are generated in science, engineering and design.
D102	Identify the types of questions that can be asked of data in satisfaction of a particular information goal.
D103	Employ strategies for ensuring data quality
D104	Identify aspects of data governance to judge whether and how data can be used in analyses
D105	Collect, transform, prepare and clean data for purposes of analysis
D106	Use appropriate visualisations to present and explore data sets
D107	Apply descriptive statistics to understand the basic features of the data
D108	Apply inferential statistics to test hypotheses about features and relationships within data sets

D109	Retrieve data from a variety of different data sources in a variety of different formats
D110	Identify the ethical concerns regarding the provenance of data, the privacy of individuals, and the impact data analytics can have on society.
D111	Describe and apply topics from a code of ethics from a professional, national or international body in relation to data protection.

Assessment

Task	Length	% of module mark
Practical Data 1 Lab Exam	3 hours	100

Special assessment rules

None

Reassessment

Task	Length	% of module mark
Practical Data 1 Lab Exam	3 hours	100

Module feedback

Feedback is provided through work in practical sessions, and after the final assessment as per normal University guidelines.

Indicative reading

*** Spiegelhalter, D., *The Art of Statistics: Learning from Data*, Pelican, 2019.

*** VanderPlas, J. *Python Data Science Handbook: Essential Tools for Working with Data*, O'Reilly, 2016.

** Igual, L. Segui, S. *Introduction to Data Science: A Python Approach to Concepts, Techniques and Applications*, Springer, 2017

The information on this page is indicative of the module that is currently on offer. The University is constantly exploring ways to enhance and improve its degree programmes and therefore reserves the right to make variations to the content and method of delivery of modules, and to discontinue modules, if such action is reasonably considered to be necessary by the University. Where appropriate, the University will notify and consult with affected students in advance about any changes that are required in line with the University's policy on the Approval of Modifications to Existing Taught Programmes of Study.

Coronavirus (COVID-19): changes to courses

The 2020/21 academic year will start in September. We aim to deliver as much face-to-face teaching as we can, supported by high quality online alternatives where we must.

Find details of the measures we're planning to protect our community.

Course changes for new students