Computing in Medicine (MPHY0020)

Description
The aim of this module is to provide an introduction to topics that are important in the application of computing in a medical context.

Students completing this course will be able to:
- Identify and explain the function of key components of a modern computer
- Describe the major uses of computers in a healthcare setting (e.g. PACS)
- Explain key regulatory, legal, and ethical principles of medical data security and protection
- Represent numbers using different binary number representations (e.g. floating point)
- Demonstrate an understanding of the fundamental concepts of computer programming, including recommending appropriate data types for different forms of data, and demonstrating a working knowledge of basic MATLAB commands
- Write a MATLAB program to perform simple analysis and visualisation of biomedical data
- Demonstrate an understanding of the principles and application of key elements of digital signal and image processing, including sampling theory; quantisation; representing a signal in both the time/space and frequency domains; convolution; the Discrete Fourier Transform; representing and storing binary, greyscale, and colour images; linear filtering; image edge detection; computing gradients; interpolation; morphological filters; and an introduction to image segmentation and image registration.

This module is assessed by written examination (66%) and coursework (34%) in the form of a MATLAB programming assignment.

A video description can be found at the UCL Media Central.

Key information

<table>
<thead>
<tr>
<th>Year</th>
<th>2019/20</th>
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<tbody>
<tr>
<td>Credit value</td>
<td>15 (150 study hours)</td>
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<tr>
<td>Delivery</td>
<td>UG L6, Campus-based</td>
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<td>Reading List</td>
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<tr>
<td>Tutor</td>
<td>Dr Dean Barratt</td>
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<td>Term 1</td>
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<td>Timetable</td>
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</tbody>
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Assessment

- Written examination (main exam period): 66%
- Coursework: 34%

Find out more

For more information about the department, programmes, relevant open days and to browse other modules, visit ucl.ac.uk.
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Key information

- Year: 2019/20
- Credit value: 15 (150 study hours)
- Delivery: PGT L7, Campus-based
- Reading List: View on UCL website
- Tutor: Dr Dean Barratt
- Term: Term 1
- Timetable: View on UCL website

Assessment

- Written examination (main exam period): 66%
- Coursework: 34%

Find out more

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Disclaimer: All information correct as of August 2019. Please note that aspects of the module may be subject to change. UCL will make best efforts to inform applicants of major changes.
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- **Year**: 2019/20
- **Credit value**: 15 (150 study hours)
- **Delivery**: UGM L7, Campus-based
- **Reading List**: View on UCL website
- **Tutor**: Dr Dean Barratt
- **Term**: Term 1
- **Timetable**: View on UCL website

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