**This module is principally taught by Design School**

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| Version Number | 18 Version Start Date 04/02/2019 |
| Instance Number | 01 Instance Start Date 04/02/2019 |
| Modular Weight | 10 |
| Exam Weighting | 0% |
| Credit Level | 5 |
| Student Effort (hours) | 100 |
| Prereq Modules | DSA201 |
| Excluded Combinations Distance Learning | None |
| Module Leader | Dr D Filingeri |
| Delivery Period | Semesters Two |
| Delivery Start-End Date | 04/02/2018 **-** 19/06/2019 |
| Availability | Module is available to students meeting pre-requisites but only if listed in their Programme Specifications. |

# AIMS:

The aim of this module is to develop a further understanding of experimental study design, data collection and analysis requirements in the context of design research, with particular emphasis on how to develop rigorous experimental evidence that can underpin design decision making using quantitative and qualitative methods, and the specific technology that can support the analysis of the data provided by these techniques.

# INTENDED LEARNING OUTCOMES:

A. Knowledge and Understanding

On successful completion of this module, the students should be able to demonstrate knowledge and understanding of:

* how experimental research can support the development of evidence-based products or service design
* how to develop meaningful design research questions
* how to select from an appropriate range of methodologies when addressing research questions
* the experimental study design process for quantitative and qualitative data and of how this builds on the ability to generate insights that inform practice
* how to correctly report and discuss experimental results through presentation of findings
1. Subject specific skills:

(i) Intellectual/cognitive skills:

On successful completion of this module, the students should be able to:

* Calculate means, standard deviation, 95% confidence intervals of the mean and of the mean difference
* Compare independent and paired groups with confidence intervals, using Excel for data analysis
* Produce graphical representation of experimental data in a scientific, design-oriented fashion
* Detect meaningful patterns among means and simple descriptive statistics and graphical representation
* Correctly Interpret the results from a series of experimental design exercises
1. Key/transferable skills:

On successful completion of this module, the students will demonstrate the following transferable skills

* Develop critical thinking
* Recognise the importance of experimental evidence to support the design process and decision making
* Confidence in using advanced software to increase computer skills
* Competence in data collection, presentation and analysis
* Application of knowledge to evaluate outcomes from an experimental design-oriented evaluation
* Hold a personal toolkit of appropriate quantitative and qualitative data analysis methodologies and approaches
* The application of ethical approaches to design research

# CONTENTS:

This module will involve students engaging in learning about quantitative and qualitative methods experimental methods and applying this knowledge in the design and assessment of products and services.

# TEACHING AND LEARNING:

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| --- | --- |
| **Activity type** | **Hours Comments** |
| Guided independent study |  78 |
| Practical classes and workshops | 11 |
| Lecture | 11 |

**Total:** 100

The contact time associated with the module will include weekly lectures which discuss the theory of qualitative and quantitative methods, combined with a series of labs and workshops in which the students will apply the theoretical knowledge by performing data collection, analysis and presentation exercises.

These exercises will be linked to the design processes that are ongoing in other modules to ensure that the students are applying their knowledge in a manner which supports their own design process.

# ASSESSMENT:

**Total:** 100

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| --- | --- | --- | --- | --- |
| **Assessment Title** | **Weight (%)** | **Assessment Type** | **Exam Semester** | **Exam Length** |
| Micro-project | 100 | Coursework | N/A | N/A |

One course work-based assessment will be performed, which focuses on the development of a micro-project of choice surrounding an area of experimental design research. The course work will have submission requirements which include reporting at a professional level.

# METHOD OF FEEDBACK:

1. **Feedback given to students in response to assessed work**

Individual written feedback on coursework; Feedback discussed as part of a tutorial; Individual feedback on request

# Developmental Feedback generated through teaching activities

Feedback on drafts / work plans; Group critiques on work presented;

Studio, laboratory or field trip interaction with tutors; Dialogue between students and staff in tutorials; Results of peer-marked tasks