

ES9ZU-60 Research Project (Diagnostics, Data, Digital Health)

24/25

Department

School of Engineering

Level

Taught Postgraduate Level

Module leader

Georgia Kremmyda

Credit value

60

Module duration

45 weeks

Assessment

100% coursework

Study location

University of Warwick main campus, Coventry

Description

Introductory description

Research project for the MSc in Diagnostics, Data and Digital Health. Students will demonstrate that they have independently contributed primary data and/or a new analysis of secondary data within their chosen advanced research topic. The module offers a chance for students to build upon the skills and research experience they acquired during the Group Research Project and all taught modules.

Module aims

The aims of the module are to:

1. Offer critical insights into diverse methods and concepts needed to conduct high quality applied health research.
2. Offer an opportunity to contribute independently to primary data and/or a new analysis of secondary data with their chosen advanced research topic.
3. Offer an opportunity to develop advanced skills in the discovery of new knowledge through the development of skills in experimentation, modelling, analysis and the review of topical literature.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

A series of lectures, seminars and tutorials are provided to cover generic skills (e.g. methods and professional skills) and relevant subject-specialist skills. A project topic may be selected from published lists or, alternatively, students may themselves propose suitable topics in consultation with potential supervisors.

Projects are allocated during term 2 and preparatory work takes place during terms 2 and 3. The main work is undertaken during term 3. Students will utilise research skills and methodologies appropriate to the project using the information provided during the lectures, seminars and tutorials, the guidance of their supervisor.

Learning outcomes

By the end of the module, students should be able to:

- 1. Display enhanced knowledge and understanding of scientific principles of the topic of their individual project.
- 2. Exhibit critical awareness of the state of the art and current developments in the field of the project.
- 3. Design and plan a project defining aims and objectives, timescales, requirements, constraints and commercial & environmental context as appropriate.
- 4. Apply and integrate knowledge and principles from a range of disciplines as appropriate to analyse and solve a problem.
- 5. Comprehensively analyse and assess results and communicate feasibility of implementation to technical and non-technical audiences.
- 6. Demonstrate experience of conducting and reporting on a piece of 'original' individual research.
- 7. Evaluate risk issues including general project risks, time, uncertainty, information, data, ethical, intellectual property rights, codes of practice and standards and create a project plan which demonstrates appropriate risk management.

Indicative reading list

A full project handbook will be provided. An indicative example provided below.

<https://warwick.ac.uk/fac/sci/eng/eso/students/pgt/project>

Research element

Students will conduct research in an area allied to their degree programme in the field of medical diagnostics, digital health and imaging.

Interdisciplinary

The research area will cross multiple disciplines involving academic staff from Warwick Medical School, Warwick Manufacturing Group and Engineering.

Subject specific skills

Ability to be pragmatic, taking a systematic approach and the logical and practical steps necessary for, often complex, concepts to become reality

Ability to seek to achieve innovative solutions to problems and to have strategies for being creative and innovative

Ability to be risk, cost and value-conscious, and aware of their ethical, social, cultural, environmental, health and safety, and wider professional responsibilities

Transferable skills

Apply problem solving skills, information retrieval, and the effective use of general IT facilities

Communicate (written and oral; to technical and non-technical audiences) and work with others

Plan self-learning and improve performance, as the foundation for lifelong learning/CPD

Exercise initiative and personal responsibility, including time management.

Overcome difficulties by employing skills, knowledge and understanding in a flexible manner

Ability to formulate and operate within appropriate codes of conduct, when faced with an ethical issue

Be professional in their outlook, be effective communicators, and be able to exercise responsibility and sound management approaches.

Apply computational methods to communicate parameters, model and optimize solutions

Study

Study time

Type	Required
Lectures	4 sessions of 1 hour (1%)
Project supervision	20 sessions of 1 hour (3%)
Private study	276 hours (46%)
Assessment	300 hours (50%)
Total	600 hours

Private study description

Guided independent learning and responding to advice received from project supervisor during the course of the project.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A

	Weighting	Study time	Eligible for self-certification
Research Project	85%	250 hours	No
Students will undertake a research project in their chosen area of specialism relating to diagnostics, digital health and imaging. The assessment of the dissertation involves a viva.			
Project Management Plan and Logbook	15%	50 hours	No
Project management and log book			

Feedback on assessment

Supervisory meetings;

Student support through advertised advice and feedback hours;

The project report will be independently marked by two assessors (one being the Project Supervisor), and a third academic will act as the moderator combining feedback for the student. Comments will be given in support of project marks.

Availability

Courses

This module is Core for:

- TESA-H1CA Postgraduate Taught Diagnostics, Data and Digital Health
 - Year 1 of H1CA Diagnostics, Data and Digital Health
 - Year 1 of H1CB Diagnostics, Data and Digital Health (Medical Diagnostics)
 - Year 1 of H1CC Diagnostics, Data and Digital Health (Medical Imaging)