

| Module Details |                                |
|----------------|--------------------------------|
| Module Title   | MSc Group Project              |
| Module Code    | COS7048-B                      |
| Academic Year  | 2022/3                         |
| Credits        | 20                             |
| School         | Department of Computer Science |
| FHEQ Level     | FHEQ Level 7                   |

| Contact Hours  |       |
|----------------|-------|
| Type           | Hours |
| Laboratories   | 28    |
| Lectures       | 8     |
| Directed Study | 164   |

| Availability |                                     |
|--------------|-------------------------------------|
| Occurrence   | Location / Period                   |
| BDA          | University of Bradford / Semester 2 |

| Module Aims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Conducting projects is an integral part of academic and/or professional career. Some projects fail due technical reasons, but most failures are directly related to the poor project management and not applying the principles of good project management.</p> <p>In this module, the students will learn project management processes that project teams must understand and the standards to which their projects are being held to and apply these principles in a practical project. The module gives students experience of carrying out a computer science research project that solves a particular research problem relevant to the programme of study (e.g. Artificial Intelligence, Big Data Systems, Internet of Things, etc.). The students will either provide a computational solution using scientific tools and methods and performing computational analysis, or they provide a software engineering solution by developing a fully functional software system using state-of-the-art software development techniques. The students will also analyse legal, social, ethical and professional issues related to their projects.</p> <p>By working in teams, the students are expected to demonstrate the need for a professional approach to all aspects of research and software development. As part of the project, teams will deliver reports, code, and demonstrate a working software system or a computational solution. In addition, they will present certain elements of their work in written, graphical and verbal forms through the production of materials, e.g., reports, demo, and oral presentation. The students will be guided by a supervisor from the relevant research disciplines.</p> |

| Outline Syllabus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <div>Introduction to Groupwork</div> <div>Research Methods</div> <div>Project Management</div> <div>Project Planning</div> <div>Project Execution</div> <div>Project Monitor and Control</div> <div>Project Closure</div> <div>Reporting</div> <div>Some more specific topics to be covered are: critical evaluation; software design aspects: architectures, quality assurance, maintainability, performance and scalability; testing and validation; legal, social, ethical, and professional issues; academic report writing; risk management.</div> |  |

| Learning Outcomes |                                                                                                     |
|-------------------|-----------------------------------------------------------------------------------------------------|
| Outcome Number    | Description                                                                                         |
| 1                 | Demonstrate skills related to research methods and methodologies.                                   |
| 2                 | Critically analyse a research problem and provide a computational or software engineering solution. |
| 3                 | Demonstrate ability to work collaboratively.                                                        |
| 4                 | Present project management and communication skills.                                                |
| 5                 | Address legal, social, ethical, and professional issues in a computing project.                     |

## Learning, Teaching and Assessment Strategy

Lectures introduce the theoretical concepts, which are then applied to a research problem relevant to the programme of study (e.g., Artificial Intelligence, Big Data Systems, Internet of Things, etc.). The progress of the teams/students as well as their interactions within the teams are closely monitored and supported by a supervisor during the laboratory practical sessions and timely formative feedback is provided to support student/team learning. Any project, team or technology related issues will be discussed in the lab sessions. The students are expected to work together independently outside the scheduled teaching sessions. The directed study, monitored via team meeting notes, will include all project related activities, e.g., working on tasks allocated to an individual team member, team meetings, presentation preparations, etc.

Students' understanding of the problems to be solved, the ability to provide good solutions and practical communication skills are assessed through practical demonstration of the code functionality, through documentation of the project and presentations made to postgraduate students and research staff. The assessment takes into account both team contributions to the project as well as individual performance. The team contribution is based on the outcomes produced - code, reports and presentation. Individual assessment results from the overall contribution to the project based on evidence produced, as well as the observations made by supervisors throughout the term regarding individual contributions and the assessment made by team members.

Teams are expected to show utmost respect to equality, diversity and inclusivity. Any related issues affecting the team dynamics will be discussed with the supervisor and appropriate solutions will be implemented.

To support accessibility, clarity and comprehension all teaching material is provided online in advance of the teaching sessions and a course package will be sent a week in advance with joining instructions and training material. Throughout the programme, lots of opportunities are provided for students to design their own solutions and to express their own ideas, choosing from a variety of tools and methodologies. An emphasis is also placed on the importance of planning and goal setting, allowing students to forge a learning pathway that is suitable for their needs, while respecting the requirements of programme, and the needs of others, when working within a team.

To prepare the students ready for world of work, assessments are designed to measure industry ready skills such as presentation skills, report writing skills, team-work skills (using group coursework to strengthened students' ability to work effectively in teams). Throughout the module, students will be set formative assessment activities that will support students develop the skills and knowledge required for the summative assessment.

The module will be summatively assessed through Interim Report and Demo. This will be followed by Final Report and Demo and Short Oral Presentation (team-based).

If a student requires supplementary assessment for re-assessment, (s)he will have to repeat the assessment component(s) that (s)he failed based on a supplementary scenario (or data set) to demonstrate evidence for the required learning outcomes.

### Mode of Assessment

| Type      | Method               | Description                                                                                                        | Weighting |
|-----------|----------------------|--------------------------------------------------------------------------------------------------------------------|-----------|
| Summative | Coursework - Written | Assessment 1: Interim Group Report (2000 words) and Demo. SUPP 1: Group or individual scenario                     | 40%       |
| Summative | Coursework - Written | Assessment 2: Final Group Report (2000 words) and Demo. SUPP 2: Group or individual scenario                       | 50%       |
| Summative | Presentation         | Assessment 3: Short Oral team-based Presentation (up to 20 minutes). SUPP 3: Individual or team-based presentation | 10%       |

## Reading List

To access the reading list for this module, please visit <https://bradford.rl.talis.com/index.html>

*Please note:*

*This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.*

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