Faculty of Computing, Engineering & Media (CEM)
Coursework Brief 2019/20

Module name:	**Applied Computational Intelligence**		
Module code:	**IMAT5234**		
Title of the Assignment:	**IMAT5234 assessment specifications**		
This coursework item is: (delete as appropriate)	Summative		
This summative coursework will be marked anonymously: (delete as appropriate)		No	

The learning outcomes that are assessed by this coursework are:

LO1 Apply AI techniques to given practical problems

LO2 Recognise the multi-disciplinary nature of AI and its potential application areas.

LO3 Critically appraise relevant literature in order to formulate a plan for their own practical/experimental work

LO4 Synthesise a solution to a problem (planned in LO3) and evaluate the solution

So we will:

- Develop better understanding of the process of modelling for practical problems
- Develop better understanding of CI techniques and an application area by developing a novel solution for your proposed application
- Practice academic research, methods, evaluation and experimental design

Practice academic writing by writing your report (as individual and in group) and presenting your work, there is also an option of writing an article on your application with possibility of submission to a conference (writing an article is not part of the assessment).

This coursework is: (delete as appropriate)	Group (Individually marked)	

If other or mixed ... explain here:

The group will facilitate discussions, identifying the domain problem boundaries and shared resources, e.g. datasets, reviewing the domain problem general literature, and facilitate comparisons between solutions to appreciate the multi-disciplinary nature of AI and range of techniques.

Each individual, however, will explore a solution, e.g. a specific technique, apply it to the domain problem using appropriate tools, e.g. programming or a platform. Each individual will review the literature specific to their solution or technique and demonstrate its working, e.g. testing.

Group marks will be awarded to each individual on demonstrating their participation in the group work against the marking criteria, e.g. following a standard formatting and style agreed in the group.

This coursework constitutes 100 % **of the overall module mark.**

Date Set:	**Feb 22, 2021**
Date & Time Due:	**Report (70%) – Friday 7th May 2021;** **Presentation (30%) – Friday 7th May 2021;** **Refer to remainder of document for more details.**

Your marked coursework and feedback will be available to you on: If for any reason this is not forthcoming by the due date your module leader will let you know why and when it can be expected. The Associate Professor Student Experience (CEMstudentexperience@dmu.ac.uk) should be informed of any issues relating to the return of marked coursework and feedback. Note that you should normally receive feedback on your coursework by **no later than 20 University working days after the formal hand-in date,** provided that you have met the submission deadline.	**Report: June 8, 2021** **Presentation: June 8, 2021**

When completed you are required to submit your coursework via:

1. Blackboard

If you need any support or advice on completing this coursework please visit the Student Matters tab on the Faculty of Technology Blackboard page.

Late submission of coursework policy: Late submissions will be processed in accordance with current University regulations which state:
*"the time period during which a student may submit a piece of work late without authorisation and have the work capped at 40% [50% at PG level] if passed is **14 calendar days**. Work submitted unauthorised more than 14 calendar days after the original submission date will receive a mark of 0%. These regulations apply to a student's first attempt at coursework. Work submitted late without authorisation which constitutes reassessment of a previously failed piece of coursework will always receive a mark of 0%."*

Academic Offences and Bad Academic Practices:
These include plagiarism, cheating, collusion, copying work and reuse of your own work, poor referencing or the passing off of somebody else's ideas as your own. If you are in any doubt about what constitutes an academic offence or bad academic practice you must check with your tutor. Further information and details of how DSU can support you, if needed, is available at:
http://www.dmu.ac.uk/dmu-students/the-student-gateway/academic-support-office/academic-offences.aspx and
http://www.dmu.ac.uk/dmu-students/the-student-gateway/academic-support-office/bad-academic-practice.aspx

Tasks to be undertaken:

- **Report for a mini-project on applications of CI:** this mini project aims to take you through steps of modelling of an application and implementation of CI algorithms to solve it. Some students use this mini project for a proof of concept for their final MSc project but several problems and topics will also be provided for those one of you who may not have thought of a topic yet.

  The project is to be carried out in a group with a maximum of 3 members. The group may share the problem domain and the literature review related to that but each member will have a distinctive solution to develop, apply and evaluate within that problem domain. The results of the different solutions may then be compared and contrasted in a group effort at critical review.

  The final report will form **70% of the total mark** of the module divided into 60% individual part and 10% group work. For group assessment, we will be looking at group coordination and planning including, but not limited to: the use of collaborative tools, standardization in presentation and writing, and the use of development tools and testing, e.g. agreeing on a dataset as a benchmark to be used by the group members.

  Your own ideas for this project should be checked before you begin your work on this assignment to ensure the project is achievable and meets the objectives of this module. Please email me on aayesh@dmu.ac.uk with 1-2 paragraphs describing your idea(s) and proposed assignment work.

  Your mini project work will cover the following activities:

- A critical review of related literature, this is to be included in your report. Part of this may be done as a group activity followed by more specific literature review in the topic of investigation or solution each individual in the group is attempting.
- Each individual will either undertake:
  - A practical implementation to illustrate some feature of an application area, e.g. if you are developing solutions in the areas of Robotics or Expert Systems;

  OR
  - An appropriate experimental work to support an investigation on existing data/research, e.g. if you are applying existing CI algorithms to a new application area.

The report will consist of two main sections:

1. Individually written parts on the individual tasks.
2. Team written part on project management showing team work, professionalism, consideration of ethics and collaborative research.

Collaboration between onsite and distance learning students is particularly encouraged. This will enhance your skills in remote working and reinforce the necessity to agreeing standards for collaborative work, e.g. what tools to be used: typesetting system, prototyping tools, and what style to be applied: referencing formats, presentation style, etc.

- **Presentation**: This is a 30 – 40 minutes presentation to include 5 - 10 minutes of demo (if relevant) and 5 - 10 minutes for questions in the classroom either face-to-face or online.

  For students who cannot present their work within the normal hours of the lecture/lab sessions, e.g. distance learning students, an alternative time will be arranged.

  Presentations should use PowerPoint, PDF or in a suitable alternative format and will form **30% of the total mark** of the module divided into 20% individual and 10% group.

Presentations should clearly introduce: the presenter(s) and the topic of research, problem definition, summary of existing literature and tools, proposed solution(s), methodology, experimental design, data collection, experimental results, conclusions and future work and references. This could be slightly different for different topics.

Deliverables to be submitted for assessment:

1. Prepare a presentation (worth 30% of overall mark)
2. Write a report (worth 70% of overall mark)

The report and all the code and data must be submitted electronically using the link on Blackboard. The report should also be submitted using Turnitin. The length of the report should be 18-24 pages in IEEE conferences template format including references. You should use a standard template for your report. The IEEE conferences format is the recommended template. The templates are in MS word or Latex and can be acquired from:

https://journals.ieeeauthorcenter.ieee.org/create-your-ieee-journal-article/authoring-tools-and-templates/ieee-article-templates/templates-for-computer-society-publications/

If you wish to use an alternative template, please email in advance to confirm agreement.

How the work will be marked:
All assignments will be marked by the module leader and a percentage of failed and highest marks will be moderated.

Module leader/tutor name:	**Aladdin Ayesh**
Contact details:	**aayesh@dmu.ac.uk**