**Faculty of CEM - Course work Specification 2020-21**

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| **Module name:** | | Fuzzy Logic and Knowledge Based Systems | | | | | |
| **Module code:** | | IMAT3406 | | | | | |
| **Title of the Assignment:** | | Fuzzy Logic System | | | | | |
| **This coursework item is:** | | | | Summative | |  | |
| **This summative coursework will be marked anonymously** | | | | | No | |  |
| **The learning outcomes that are assessed by this coursework are:**   1. *Understand and implement a basic fuzzy system.* 2. *Understand the applicability of knowledge based systems.* 3. *Understand the criteria for appropriate application of these techniques to real world problems.* | | | | | | | |
| This coursework is: | | | Individual | | |  | |
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| **This coursework constitutes** 100% **to the overall module mark.** | | | | | | | |
| **Date Set:** | Friday 23rd October - Week 3 | | | | | | |
| **Date & Time Due:** | Friday 11th December - Week 10 (4pm) | | | | | | |
| **Your marked coursework and feedback will be available to you no later than:**  **18th January, 2021**  *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 Head of Studies (headofstudies-tec@dmu.ac.uk) should be informed of any issues relating to the return of marked coursework and feedback.* | | | | | | | |
| **When completed you are required to submit your coursework to:**  *Report and project code to be submitted via the submission links via the module shell on blackboard -* ***Turnitin****.* | | | | | | | |
| **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% 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 is available at:**  <http://www.dmu.ac.uk/dmu-students/the-student-gateway/academic-support-office/academic-offences.aspx>  <http://www.dmu.ac.uk/dmu-students/the-student-gateway/academic-support-office/bad-academic-practice.aspx> | | | | | | | |
| **Tasks to be undertaken:**  You are to design, build, test and evaluate a fuzzy logic inference system. The system itself will be of your choosing, however, there must be a minimum of **3** input variables, and at least **1** output variable. As this is somewhat open-ended, you are expected to survey the relevant literature for guidance and inspiration. The system itself can be tested on theoretical data (create your own indicative data), or real world data. The fuzzy logic system will be accompanied by a detailed report.  The report **MUST NOT** exceed **12 pages**. If 12 pages is exceeded, you will not lose marks, I will however stop marking after 12 pages:   * The references/bibliography will **NOT BE** included in the page count. * The title page, table of contents and abstract, if you decide to include them will **NOT BE** included in the page count. * The appendices, if you decide to use appendices will **NOT BE** included in the page count. To provide enough detail to obtain the higher marks, you should aim to satisfy the mark scheme. * Everything included in the main body of the report **WILL BE** included in the page count. | | | | | | | |
| **Deliverables to be submitted for assessment:**  **To be submitted through Turnitin:**  **There will be 2 Turnitin submission links within the coursework folder, which will require you submit the following:**  **Turnitin Link 1:**   * A single uploaded report which will provide a similarity index. **DO NOT** exceed 25% similarity:   + You *could* adopt if you wish, the following structure:     - Title Page, table of contents, abstract (**NOT** included in page count).     - Introduction (Possibly 0.5 pages).     - A review of relevant literature (Possibly 2 pages).     - An overview of your approach to this problem (Possibly 2 pages).     - A technical description of your fuzzy system including, variables, set, rulebase and And/Or/Implication/Defuzzification operator choice with justification (Possibly 3.5 pages).     - Experimental design and evaluation - performance of your fuzzy system including the design and results of an experiment (Possibly 2 pages).     - Critical reflection (Possibly a single page).     - Conclusion (Possibly a single page).     - Bibliography, references, cited works (**NOT** included in page count).     - Appendices - Optional (**NOT** included in page count).   **Turnitin Link 2:**   * A zipped folder containing: the project code - this will include **ALL** MATLAB file(s) (.m file) and any external file(s) such as data files and any additional files. | | | | | | | |
| **How the work will be marked:**  Broadly speaking, your mark will be based on how well your fuzzy system performs and how well you assessed its performance. It’s not necessarily what you create, but how you went about creating it – the story of the journey your system took from initialisation to final configuration. It is of course important that you communicate and articulate well in the report. Make sure that you justify the configuration of your system, and provide a solid rationale for why you did what you did.  The mark and feedback will be retuned via the **Grade Centre** in module shell. Please use the mark scheme to tailor the coursework accordingly. | | | | | | | |
| **Module leader/tutor name:** | | **Dr. Archie Singh Khuman** | | | | | |
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