Form C4

Heriot-Watt University - Course Descriptor Template

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<tbody>
<tr>
<td>F21CA</td>
<td>Conversational Agents and Spoken Language Processing</td>
<td>11</td>
<td>15</td>
<td>Verena Rieser</td>
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</table>

5. School: Mathematical and Computer Sciences

7. Delivery: Location & Semester
   - Edin: Sem 2
   - SBC: Sem
   - Orkney: Sem....
   - Dubai: Sem....
   - IDL: Sem....
   - Collaborative Partner: Name Sem....

8. Pre-requisites: F29AI Artificial Intelligence and Intelligent Agents or equivalent. Programming skills.

9. Linked Courses (specify if synoptic): None

10. Excluded Courses: None

11. Replacement Courses
    - Code: [ ]
    - Date Of Replacement: [ ]

12. Degrees for which this is a core course
    - MSc Artificial Intelligence with Speech and Multimodal Interaction
    - Optional course for MSc in Artificial Intelligence, MSc in Creative Software Systems

13. The course may be delivered to:
    - UG only [x]
    - PG only [ ]
    - UG & PG [ ]

14. Available as an Elective?
    - Yes [ ]
    - No [x]

15. Aims

This course aims to give students the opportunity to develop:

- An extensive, detailed and critical knowledge of design, implementation and evaluation techniques for conversational agents and spoken language processing.
- An awareness of current research and emerging issues in the field of conversational agents and spoken language processing.
- A range of interdisciplinary research methods and specialised practical skills involved in building working conversational interfaces.

16. Syllabus

This course covers current and emerging topics in conversational agents, spoken language processing, and multimodal interfaces, including:

- Introduction to research areas, such as spoken dialogue systems, multi-modal interaction, natural language processing, and human robot interaction.
- Spoken input processing and interpretation.
- Interaction Management.
- Output generation, multimodal fission, speech and gesture synthesis.
- System development and evaluation.
17. Learning Outcomes (HWU Core Skills: Employability and Professional Career Readiness)

Subject Mastery  
**Understanding, Knowledge and Cognitive Skills**  
- Review, critically analyse, evaluate and synthesize previous research in the field of conversational agents and spoken language processing.  
- Identify and propose innovative applications and extensions of current technologies.  
- Acquire confidence in applying algorithmic and interdisciplinary methods on conversational interfaces.  
- Make informed judgments about appropriate methodologies for developing and evaluating conversational interfaces.  
- Practice in implementing conversational interfaces using a suitable programming language and software tools.  
- Experience in the use of multimodal sensors and existing Natural Language Processing technologies.

**Scholarship, Enquiry and Research (Research-Informed Learning)**

Personal Abilities  
**Industrial, Commercial & Professional Practice**  
- Identification, representation and solution of problems.  
- Time management and resource organisation.  
- Research skills and report writing.  
- Practise in the use of ICT, numeracy and presentation skills.  
- Experience in group work: Take responsibility for their own and other’s work by contributing effectively and conscientiously to the work of a group, actively maintaining good working relationships with group members, and leading the direction of the group where appropriate.

**Autonomy, Accountability & Working with Others**  
**Communication, Numeracy & ICT**

18. Assessment Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Duration of Exam (if applicable)</th>
<th>Weighting (%)</th>
<th>Synoptic courses?</th>
<th>Method</th>
<th>Duration of Exam (if applicable)</th>
<th>Diet(s)</th>
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<tbody>
<tr>
<td>Coursework 1 - Presentation</td>
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19. Re-assessment Methods

Date and Version

<table>
<thead>
<tr>
<th>Date of Proposal</th>
<th>Date of Approval by School Committee</th>
<th>Date of Implementation</th>
<th>Date of Implementation</th>
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<td>November 2013</td>
<td>November 2013</td>
<td>September 2014</td>
<td></td>
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