

Course descriptor F21HR

Course code	F21HR
Course title	Human Robot Interaction
Credits	15
School	Mathematical and Computer Sciences
SCQF Level	11
Semester	1
Aims	<ul style="list-style-type: none"> • To equip students with knowledge and skills for the effective management of a group project, which encompasses a human robot interaction, focused on software development. • To enable students to reinforce and enhance their knowledge and skills gained in software processes, middleware tools, data management for robotic systems and interaction design • To build students understanding, knowledge and skills in teamwork, software development in groups, and project planning. • To enable students to develop a broader understanding of the interrelation of development life-cycles and a critical capability in the selection of tools and methods to support project planning, systems analysis, requirements capture, and system specification. • To gain exposure to the main issues involved in building intelligent robot systems for HRI.
Syllabus	<ul style="list-style-type: none"> • Groups of 3-4 students will be paired with a robotics expert to engage in an HRI project on the level of software, hardware and study development. Software project management including working in groups, project planning, ethical and risk assessment. Use of Industry-level Standards for software development and documentation, covering aspects such as change control and interface design through middleware. Further study of software development tools, especially version control, continues integration strategies and middleware's (e.g. ROS, YARP).

Learning Outcomes	
Subject Mastery	<ul style="list-style-type: none"> • A detailed and integrated knowledge and understanding of the system development process in HRI. • Ability to understand requirements of different user groups and be able to adapt the system accordingly • A broad and integrated understanding and knowledge of the various development and programming paradigms, software development life- cycles, teamwork and project planning • Detailed theoretical and practical knowledge of the use of methodologies for requirements capture, iterative design,

	<p>resource capture and management, deployment and evaluation of systems, at a basic level</p> <ul style="list-style-type: none"> • Practice in the use of object-oriented programming, middleware, scripting and mark-up languages applied to a substantial project
Personal Abilities	<ul style="list-style-type: none"> • Demonstrate critical reflection on system development and performance (PDP). • Ability to deal with complex issues and apply critical analyses and solution selection. • Exercise substantial autonomy, initiative, and creativity in the application of HRI systems. • Communicate with peers, senior colleagues and specialists (PDP).

Assessment method	30% course work 70% practical
-------------------	-------------------------------