UNSW Course Outline

BENV2522 Social Robotics - 2024

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General Course Information

Course Code : BENV2522
Year : 2024
Term : Term 1
Teaching Period : T1
Is a multi-term course? : No
Faculty : Faculty of Arts, Design and Architecture
Academic Unit : School of Built Environment
Delivery Mode : In Person
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Undergraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

This course will introduce you to the field of Social Robotics and Human Robot Interaction (HRI) by engaging you in movement experiments that develop indicators for sentience and affect. You will explore a robotic technology in its early stages of development, and which is likely to become a ubiquitous dimension of society in our lifetimes, particularly in vulnerable populations. By

understanding how our cultures and values both shape and are shaped by the technologies we develop, we can support the development of technology that positively impacts society for the widest possible diversity of people. Within this contemporary social and technological context, you will investigate affective processes in HRI through the lenses of psychology, sociology, technology theory, and ethics. You will design and develop Social Robot movement prototypes in iterative stages, with the aim of generating movement that inspires an emotionally engaging and affective human-robot interaction.

Relationship to Other Courses

For students doing the Bachelor of Design, this is the first of 4 courses that comprise the Minor in Social Robotics: BENV2001, BEIL0014, BENV2522, CODE2230

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Assess the social, cultural and ethical factors impacting design and successful interaction in social robotics
CLO2 : Analyse movement prototypes to identify visual factors impacting affect
CLO3 : Apply the key principles of social robot design theory to a design problem
CLO4 : Build an autonomously functioning robotic prototype
CLO5 : Reflect on the affective and interactive qualities of a robotic prototype

Course Learning Outcomes	Assessment Item
CLO1 : Assess the social, cultural and ethical factors impacting design and successful interaction in social robotics	• Blog posts • Analogue Prototype • Autonomous Prototype
CLO2 : Analyse movement prototypes to identify visual factors impacting affect	• Analogue Prototype • Autonomous Prototype
CLO3 : Apply the key principles of social robot design theory to a design problem	• Analogue Prototype • Autonomous Prototype
CLO4 : Build an autonomously functioning robotic prototype	• Blog posts • Analogue Prototype • Autonomous Prototype
CLO5 : Reflect on the affective and interactive qualities of a robotic prototype	• Blog posts

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

The course is delivered through lectures and tutorials. Lectures develop key ideas and approaches relevant to each week's content focus and support your engagement with tutorial content. Tutorials refine your understanding of lecture content and support your application of this understanding to assessment tasks through studio work.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Blog posts Assessment Format: Individual	20%	Start Date: Not Applicable Due Date: Week 1: 12 February - 18 February, Week 2: 19 February - 25 February, Week 3: 26 February - 03 March, Week 4: 04 March - 10 March, Week 5: 11 March - 17 March
Analogue Prototype Assessment Format: Individual	40%	Start Date: Not Applicable Due Date: Week 7: 25 March - 31 March
Autonomous Prototype Assessment Format: Individual	40%	Start Date: Not Applicable Due Date: Week 10: 15 April - 21 April

Assessment Details

Blog posts

Assessment Overview

Post weekly on-going documentation to the class blog of your experimentation with materials and movement mechanisms as your ideas for your robot prototype develop. Demonstrate engagement with precedents and reflection on affective movement. Your peers and tutor will provide comments.

Course Learning Outcomes

- CLO1 : Assess the social, cultural and ethical factors impacting design and successful interaction in social robotics
- CLO4 : Build an autonomously functioning robotic prototype
- CLO5 : Reflect on the affective and interactive qualities of a robotic prototype

Detailed Assessment Description

Details of the blog requirements and the extended report can be found under the

'Assessments' tab on Moodle

Submission notes

Submitted on Padlet and Moodle

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Analogue Prototype

Assessment Overview

Fabricate a 'pupeteered' prototype of your social robot demonstrating the planned movement and mechanism for interaction. This prototype can be built from found or place-holder prototyping materials, and a multitude of materials ought to have been tested and documented for optimisation. While the materiality can be of a prototyping nature, the movement of the mechanism must be highly resolved. Feedback will be provided using a rubric and written comments.

Course Learning Outcomes

- CLO1 : Assess the social, cultural and ethical factors impacting design and successful interaction in social robotics
- CLO2 : Analyse movement prototypes to identify visual factors impacting affect
- CLO3 : Apply the key principles of social robot design theory to a design problem
- CLO4 : Build an autonomously functioning robotic prototype

Detailed Assessment Description

Details about the Analogue Prototype submission can be found under the 'Assessments' tab on Moodle

Submission notes

Submitted on Moodle

Assignment submission Turnitin type

Not Applicable

Autonomous Prototype

Assessment Overview

Build a autonomously functional prototype of a social robot and demonstrate its movement in a presentation to the class. Discuss the planned application and interaction scenario and trigger

its movement through sensor-driven actuation via low-cost open-source electronics. Feedback will be provided using a rubric and written comments.

Course Learning Outcomes

- CLO1 : Assess the social, cultural and ethical factors impacting design and successful interaction in social robotics
- CLO2 : Analyse movement prototypes to identify visual factors impacting affect
- CLO3 : Apply the key principles of social robot design theory to a design problem
- CLO4 : Build an autonomously functioning robotic prototype

Detailed Assessment Description

Details about the Autonomous Prototype submission can be found under the 'Assessments' tab on Moodle

Assignment submission Turnitin type

This is not a Turnitin assignment

General Assessment Information

Detailed information about the assessment tasks can be found on Moodle.

Grading Basis

Standard

Requirements to pass course

Students are required to make a genuine attempt as all assessment tasks to be eligible to pass the course.

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 12 February - 18 February	Lecture	Introduction to Social Robotics
	Tutorial	Simulation and Authenticity
Week 2 : 19 February - 25 February	Lecture	Living with Robots: Technology Ethics
	Tutorial	Issues and Opportunities in Social Robotics
Week 3 : 26 February - 3 March	Lecture	Designing Robots with Movement in Mind
	Tutorial	Movement Matters
Week 4 : 4 March - 10 March	Lecture	Design History of Social Robot Morphologies
	Tutorial	Movement development
Week 5 : 11 March - 17 March	Lecture	Cultural Robotics: Gender, Gestures and Geography
	Tutorial	Refining Movement
Week 6 : 18 March - 24 March	Other	Flexibility Week
Week 7 : 25 March - 31 March	Lecture	Applied Robotics: Sensing and Actuation
	Tutorial	Autonomous Movement
Week 8 : 1 April - 7 April	Lecture	Art & Robotics: Computational Creativity
	Tutorial	Robots as Political Agents + Refining Morphology
Week 9 : 8 April - 14 April	Lecture	Assistive Technology
	Tutorial	Design for One, Extend to Many
Week 10 : 15 April - 21 April	Lecture	Futuring Interaction
	Tutorial	Round-table Presentations

Attendance Requirements

You are expected to be regular and punctual in attendance at all classes for the School of Built Environment courses in which you are enrolled. If and where individual courses have specific attendance requirements, these will be stated in the course outline. BENV2522 has an 80% attendance policy that is in line with the Built Environment attendance policy.

If you do not attend, engage, or participate in scheduled class activities, including lectures, tutorials, studios, labs, etc, you run the risk of failing a course.

If illness or unexpected and beyond your control circumstances prevent you from completing a task on time, or substantially disturb your assessment performance, you should apply for Special Consideration, as soon as practicable, accompanied by appropriate documentation.

No special consideration will be provided if you miss out on essential course information and materials, or if you miss assessment tasks and deadlines due to unexplained absences or an unapproved lack of attendance.

You may be advised by the Course Convenor to withdraw from the course if significant learning activities are missed.

Course Resources

Prescribed Resources

All resources are listed and available in the relivant week's tab on Moodle.

Additional Costs

Students will be required to purchase some minor studio equiment and electronic componants.

Course Evaluation and Development

Feedback to Students: Students will receive frequent verbal feedback from peers and the instructor in class, and written feedback on the class Padlet. Each assessment feedback includes rubric grades and written comments.

Feedback from Students: We encourage and support students to maintain regular contact with the course convenor to provide informal feedback throughout the course. For specific issues or detailed feedback, please arrange a meeting with the course convenor via email.

In this course there is an option for students to provide anonymous feedback via the course's Moodle page, which is directly sent to the convenor. As a final step, students are invited to share their insights and experiences by completing the MyExperience survey. The feedback gathered each year is integral to the continuous enhancement and development of the course.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Lecturer	Belinda Dunstan		2002, Lawrence West		Email for a meeting time	Yes	Yes

Other Useful Information

Academic Information

Due to evolving advice by NSW Health, students must check for updated information regarding online learning for all Arts, Design and Architecture courses this term (via Moodle or course information provided).

Please see: https://www.unsw.edu.au/arts-design-architecture/student-life/resources-support/

protocols-guidelines for essential student information relating to:

- UNSW and Faculty policies and procedures;
- Student Support Services;
- Dean's List;
- review of results;
- credit transfer;
- cross-institutional study and exchange;
- examination information;
- enrolment information;
- Special Consideration in the event of illness or misadventure;
- student equity and disability;

And other essential academic information.

Academic Honesty and Plagarism

Plagiarism is using the words or ideas of others and presenting them as your own. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement.

UNSW groups plagiarism into the following categories:

- Copying: Using the same or very similar words to the original text or idea without acknowledging the source or using quotation marks. This includes copying materials, ideas or concepts from a book, article, report or other written document, presentation, composition, artwork, design, drawing, circuitry, computer program or software, website, internet, other electronic resource, or another person's assignment without appropriate acknowledgement.
- Inappropriate paraphrasing: Changing a few words and phrases while mostly retaining the original information, structure and/or progression of ideas of the original without acknowledgement. This also applies in presentations where someone paraphrases another's ideas or words without credit and to piecing together quotes and paraphrases into a new whole, without appropriate referencing.
- Collusion: Working with others but passing off the work as a person's individual work. Collusion also includes providing your work to another student for the purpose of them plagiarising, paying another person to perform an academic task, stealing or acquiring another person's academic work and copying it, offering to complete another person's work or seeking payment for completing academic work.
- Inappropriate citation: Citing sources which have not been read, without acknowledging the "secondary" source from which knowledge of them has been obtained.
- Duplication ("self-plagiarism"): Submitting your own work, in whole or in part, where it has previously been prepared or submitted for another assessment or course at UNSW or another university.

The UNSW Academic Skills support offers resources and individual consultations. Students are also reminded that careful time management is an important part of study. One of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and proper referencing of sources in preparing all assessment items. UNSW Library has the ELISE tool available to assist you with your study at UNSW. ELISE is designed to introduce new students to studying at UNSW, but it can also be a great refresher during your study.

Completing the ELISE tutorial and quiz will enable you to:

- analyse topics, plan responses and organise research for academic writing and other assessment tasks
- effectively and efficiently find appropriate information sources and evaluate relevance to your needs
- use and manage information effectively to accomplish a specific purpose
- better manage your time
- understand your rights and responsibilities as a student at UNSW
- be aware of plagiarism, copyright, UNSW Student Code of Conduct and Acceptable Use of UNSW ICT Resources Policy
- be aware of the standards of behaviour expected of everyone in the UNSW community
- locate services and information about UNSW and UNSW Library

Use of AI for assessments

As AI applications continue to develop, and technology rapidly progresses around us, we remain committed to our values around academic integrity at UNSW. Where the use of AI tools, such as ChatGPT, has been permitted by your course convener, they must be properly credited and your submissions must be substantially your own work.

In cases where the use of AI has been prohibited, please respect this and be aware that where unauthorised use is detected, penalties will apply.

Use of AI for assessments | UNSW Current Students

Submission of Assessment Tasks

Turnitin Submission

If you encounter a problem when attempting to submit your assignment through Turnitin, please telephone External Support on 9385 3331 or email them on externalteltsupport@unsw.edu.au

Support hours are 8:00am – 10:00pm on weekdays and 9:00am – 5:00pm on weekends (365 days a year). If you are unable to submit your assignment due to a fault with Turnitin, you may apply for an extension, but you must retain your ticket number from External Support (along with any other relevant documents) to include as evidence to support your extension application. If you email External Support, you will automatically receive a ticket number, but if you telephone, you will need to specifically ask for one. Turnitin also provides updates on their system status on Twitter.

Generally, assessment tasks must be submitted electronically via either Turnitin or a Moodle assignment. In instances where this is not possible, alternative submission details will be stated on your course's Moodle site. For information on how to submit assignments online via Moodle: https://student.unsw.edu.au/how-submit-assignment-moodle

Late Submission Penalty

UNSW has a standard late submission penalty of:

- 5% per calendar day,
- for all assessments where a penalty applies,
- capped at five calendar days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Students are expected to manage their time to meet deadlines and to request Special Consideration as early as possible before the deadline. Support with Time Management is available here.

School Contact Information

beadmin@unsw.edu.au