



**Social Robotics
Psychology 734
Spring 2017**



Instructor: **Eva Wiese**, Ph.D.
Phone: (703) 993 - 5266
Email: ewiese@gmu.edu
Office: 2068 David King Hall

Office Hours: Thursdays 10:00 - noon and by appointment
Class Time: Monday, 4:30-7:10 PM
Location: David King Hall 2073A

Course Outline

This course will cover a range of topics related to Social Robotics, such as neural correlates of social behavior, action understanding and mentalizing, as well as latest approaches in designing and evaluating social machines. The course will also provide information regarding design principles for social robots, experimental methods and design, data analysis and scientific writing. A detailed schedule of readings, assignments and topics by date can be found below and will be made available in class and on Blackboard. Any schedule changes or changes in assignments will be announced in advance.

Course Objectives

The goal of the course is to introduce students to contemporary approaches in social robotics to build and evaluate robots that are human-like, cognitive, and intuitive to interact with. The course is designed for graduate students in psychology, neuroscience, computer science and engineering and consists of theoretical and practical parts: The first half of the course outlines psychological and neuroscientific aspects underlying Human-Robot Interaction with a special focus on the role of gaze direction in mentalizing about others' internal states. The course also covers standard methods and paradigms used in social robotics research. Key areas that will be discussed include the understanding of intentions (i.e., theory of mind), actions (i.e., mirror neurons) and emotions. The course also highlights prominent disorders of social function, such as autism and discusses ways how social robots can be used in clinical psychology to train patients with these disorders. The second half of the course will be devoted to a research project involving a social robot (or pictures, video clips, stories of social robots). Students will develop a research question and investigate it in teams of two: they will plan and conduct a behavioral experiment, analyze and interpret data and write a research report. Depending on the quality of the findings, the report can be modified in order to submit it as a manuscript to a conference or journal.

Textbooks and Reading

No textbook is required for this course. Reading assignments include peer-reviewed journal articles and other published reports. Readings are due to when listed in the Syllabus. Students are encouraged to schedule regular times during the week for reading and taking notes on the articles, and to discuss them with classmates prior to class when possible. Students are always encouraged to attend my office hours to discuss any of the topics related to the course, including reading assignments. All reading assignments should be completed before class. Students are encouraged to search for additional reading along their personal interests to supplement the articles assigned in class.

Course Assignments

Assignments

There will be several graded assignments during the semester, including presentations and classroom projects (due dates will be announced in class). These assignments contribute 35% towards students' course grade.

Semester Project

Students will conduct a research project on a social robotics topic (in small groups). The project will be documented by a written report and oral presentation to the class. Further details regarding the project will be provided in class. The semester project contributes 55% towards students' course grade.

Participation

Class participation is essential. Students are encouraged to actively participate in class. Students are also encouraged to engage with classmates and the professor outside of class and take full advantage of opportunities that will arise during the semester to participate in activities related to the course. Participation in class contributes 10% towards students' course grade.

Grading

Weekly assignments	35 points
Semester project	55 points
Participation	10 points
<hr/>	
Overall	100 points

Letter Grade	Grade Points	Points
A+	4.00	100 - 95
A	4.00	94 - 90
A-	3.67	89 - 85
B+	3.33	84 - 80
B	3.00	79 - 75
C	2.00	74 - 70
F	0.00	69 - 0

Attendance

Attendance of all scheduled seminars and class activities is required and essential to successfully learn the concepts covered by this course. Students must arrive on time and be ready to participate at the start of the class. As a courtesy, one unannounced/unexcused absence will be allowed for each student, after which each additional unexcused absence will result in the loss of one letter grade per day. In addition, it is highly advised to contact me BEFORE all absences to accommodate any assignments or other graded material that might not be completed due to the absence. Any assignments that are delayed due to an unexcused absence, even a first offense, will receive no credit unless other arrangements have been made in advance.

Cancellation Policy

In case class needs to be cancelled due to an unexpected event, students will be informed via email as soon as possible. Make-up sessions will be arranged for cancelled classes.

Official Communications via GMU E-mail

Mason uses electronic mail to provide official information to students. Examples include communications from course instructors, notices from the library, notices about academic standing, financial aid information, class materials, assignments, questions, and instructor feedback. Students are responsible for the content of university communication sent to their Mason e-mail account and are required to activate that account and check it regularly.

Technology

Projector and audio system (for videos) will be used to present slides with course material in class. Students need to bring the slides for the presentation of their semester project on a storage device. For the practical part, lab equipment (i.e. computer, keyboard, joystick) and a robot platform will be used.

GMU Honor Code

George Mason University has a code of Honor that each of you accepts by enrolling as a student. The assignments you work on in this class need to be the work of one individual. Plagiarism or any other violation of the honor code will be taken very seriously and reported to the Honor Committee.

Disabilities

If you are a student with a disability and you need academic accommodations, please see me and contact the Disability Resource Center (DRC) at 703-993-2474. All academic accommodations must be arranged through that office.

Drop dates

January 30th is the last day to add and drop this class without penalty.

Weekly Schedule and Assignments

Weekly class meetings will generally be split into two sections: a discussion of assigned readings, followed by a lecture or classroom project activities. The schedule is tentative and the instructor reserves the right to make minor adjustments to the schedule of assignments. Changes will be announced in class.

Date	Topics	Reading & Assignments
1/23	Course Overview	
1/30	Introduction: What are social robots? <i>Lecture and Discussion</i>	Fong et al (2002) Fink (2012)
2/6	Neuroscience of Social Behavior <i>Lecture and Discussion</i>	Adolphs (2003) Breazeal et al (2000)
2/13	Social Robotics: Understanding internal states <i>Lecture and Discussion</i>	Scasselatti (2000). Short et al (2013)
2/20	Social Robotics: Understanding actions <i>Lecture and Discussion</i>	Frith et al (2003) Kupferberg et al (2013)
2/27	Social Robotics: Performing actions together <i>Lecture and Discussion</i>	Knoblich et al (2011). Kupferberg et al (2012).
3/6	Social Robotics: Social Learning and Application <i>Lecture and Discussion</i>	Lungarella et al (2001). Calinon et al (2006). Scassellati et al (2012).
3/13	Spring Break	
3/20	Project Kick-off	IRB Approval DUE
3/27	Project <i>Research Question, Experimental Design</i>	
4/3	Project <i>Programming</i>	Introduction and Methods DUE
4/10	Project <i>Data Collection</i>	Programming DUE
4/17	Project <i>Data Analysis</i>	Data Collection DUE
4/24	Project <i>Writing Report</i>	Data Analysis DUE
5/1	Final Presentation	Project Presentation and Final Report DUE