

ISC: Interdisciplinary Sciences Courses

Courses

ISC 5905 Directed Study

College of Health, Department of Psychology

1-12 sh (may be repeated indefinitely for credit)

ISC 6529 Research Methods in Intelligent Systems and Robotics

College of Sci and Engineering, Department of Intelligent Systems & Robotics

3 sh (may not be repeated for credit)

This seminar course introduces students to research methods in Intelligent Systems and Robotics at the academic level. They will read research papers, participate in active research projects, and practice preparing and presenting research presentations. They will also be introduced to grant writing and proposal preparation. This course will also be an opportunity for the students to familiarize with the research conducted at the ISR Department and at IHMC. Department faculty and IHMC researchers will present on their research in order to expose students to the research projects conducted in the department. Research methods such as literature search, experiment design, technical writing, etc. will also be covered. This course is required for all ISR PhD students in Computer Science. The content of this course varies from semester to semester.

ISC 7248 Deep Reinforcement Learning

College of Sci and Engineering, Department of Intelligent Systems & Robotics

3 sh (may not be repeated for credit)

Prerequisite: [EEE 6772](#)

This course addresses deep learning and reinforcement learning and their combination in deep reinforcement learning. Topics include reinforcement learning techniques such as dynamic programming, value iteration, policy iteration, and actor-critic methods. Deep learning techniques include convolution neural networks and learning through backpropagation. These techniques will be combined to create learning policies for various control applications. Extensive software projects will utilize open source libraries from several sources. Students will implement solutions to various problems, including agents learning to play video games and bipedal walking robot simulations. Students are expected to have a background in data structures and algorithms, linear algebra, Calculus II or equivalent, linear differential equations, and control theory.

ISC 8980 Dissertation

College of Sci and Engineering, Department of Intelligent Systems & Robotics

1-24 sh (may be repeated for up to 24 sh of credit)

This course is the major individual research in a relevant research area. The dissertation reflects intensive research produced by the student and collaboratively developed with the student's graduate committee. Graded on a satisfactory/unsatisfactory basis only. Admission to candidacy, completion of all other doctoral program requirements, and permission are required.