Intelligent Systems & Robotics, Ph.D.

The goal of the Ph.D. program in Intelligent Systems and Robotics is to educate the next generation of educators and researchers in the field. Students will learn to develop leading-edge software and hardware technology to combine human and machine elements together in ways that exploit their respective strengths and mitigate their respective weaknesses. After laying a groundwork common to all, the Ph.D. in Intelligent Systems and Robotics program will provide students with individualized curricula tailored to their interests. The program is comprised of foundational courses in Artificial Intelligence (AI) that address topics including knowledge representation and reasoning, machine learning, computational methods in AI, basic hardware/software interaction, and research methods. After completing the core, students select advanced courses based upon their research interests. Beyond course work, the program's cornerstone will be hands-on research in robotics and AI and will leverage the proximity and world-class talent at UWF and IHMC.

Admission Requirements

In addition to the University graduate admission requirements described in the Admissions section of the catalog, the department bases decisions for regular admission on a holistic review of credentials in which the following criteria are used to assess the potential success of each applicant:

- Submission of the Graduate Record Exam (GRE). Attainment at the 70% percentile is preferred.
- Hold a master's degree in Computer Science, Mathematics, Engineering, Physics or a similar technical degree. Bachelor's candidates with strong relevant industrial experience will be considered.
  - Incoming students who do not hold a master's degree in an approved area will be required to complete a minimum of 27 sh of content-based coursework (9 hours of post-bachelor courses, 9 sh of doctoral core courses, and 9 sh of doctoral electives) in addition to the required 24 sh of dissertation. Students may petition to satisfy preparatory coursework by proficiency examination. Any coursework taken from outside the program must be approved by the student's advisor and program director.
- Master's or bachelor's institutional GPA - minimum of a 3.0 GPA; however, successful applicants will typically have GPAs well above the minimum.
- Submission of a curriculum vitae (CV)
- Submission of a personal statement in which you address the following points (and others you deem relevant):
  - Reason you are interested in this program
  - Specific research area(s) in which you are interested
  - Any work you have completed within your area of interest, including courses taken, previously published representative paper(s), summary of all thesis work, research/project reports, presentations, demonstrations, etc.
  - Name(s) of faculty (at UWF and IHMC) with whom you are interested in working
  - Whether you will be self-supported or in need of an assistantship
  - Your plans after completing your Ph.D.
- Submission of a minimum of three (3) letters of recommendation (LOR) from academic and professional recommenders attesting to the applicant's graduate studies potential.
  - At least one (1) of these LORs must be from an academic reference.
  - Please advise all recommenders of the following requirements: All LORs must be on official letterhead of the recommender's institution or organization and must contain the recommender's official written signature.
- Participation in an oral interview if deemed necessary by the admission committee
- Those without a background in algorithm analysis, data structures and advanced computer programming skills will require additional preparatory work.
- Applicants from countries where English is not the official language must also demonstrate proficiency in English. The Admissions Committee reserves the right to conduct telephone interviews with these applicants.
  - For a complete list of admission requirements for international applicants, please visit the International Graduate Admission section of the catalog.

Program Requirements

GPA Requirements

- Students are required to complete all courses with a grade of "B" or better and maintain an overall GPA of 3.25 or better.

Advancement to Candidacy

- Completion of 18 or 30 semester hours for candidates entering the program with an approved master's or bachelor's degree, respectively.
- Passing a comprehensive qualifying exam with written and oral components.

Dissertation

- All doctoral candidates are required to work with a faculty mentor to conduct, document, and publicly defend a piece of original research.

All coursework must be completed with a grade of "B" or better with a minimum overall GPA of 3.25.

Core Courses (9 semester hours)

ISC 6529	Research Methods in Intelligent Systems and Robotics	3
Choose 2 of the following:		6
EEE 6772	Foundations of Intelligent Systems	
EEE 6730	Special Topics in Intelligent Systems	
EML 6805	Foundations for Robotics	
CAP 6606	Machine Learning for Intelligent Systems and Robotics	

Electives (9 semester hours)

EML 6805	Foundations for Robotics	3
EEE 6734	Bipedal Walking Robots	3
EEL 6692	Wearable Robotics	3

CAP 6667	Advanced Topics in Intelligent Systems & Robotics	3
ISC 7248	Deep Reinforcement Learning	3
EEE 6772	Foundations of Intelligent Systems	3
CAP 6606	Machine Learning for Intelligent Systems and Robotics	3
CAP 6665	Computer Vision	3
EEL 6606	Aerial Robotics	3

Dissertation (24 semester hours)

ISC 8980	Dissertation	1-24