ROBOTICS
THE UNIVERSITY OF UTAH

PhD Course Requirements

CORE COURSES

Required

MECHANICS	CONTROL	COGNITION	PERCEPTION
ROBOT 6000 Robotics I: Mechanics	**ROBOT 6100** Robotics II: Control	**ROBOT 6200** Motion Planning *or* **CS 6300** Artificial Intelligence	**CS 6640** Image Processing *or* **CS 6320** Computer Vision

SEMINARS

Required

ME EN 6890 *or* **CS 7930** *or* **ECE 6900**	**ROBOT 6800** Robotics Seminar (Enroll in 2 semesters for 1 credit each semester)

ALLIED COURSES

9 credits (as needed to reach the 30-credit hour coursework minimum requirement)

RESEARCH

Required

ROBOT 7970
PhD Dissertation
(14 credits minimum)

ELECTIVE COURSES

Select 3 classes from two different categories:

MECHANICS	CONTROL	DESIGN	HUMAN-ROBOT INTERACTION	PERCEPTION
ROBOT 7000 Manipulation, Mobility **ROBOT 7010** System Identification for Robotics	**ME EN 6200/ ECE 6615** Classical Control Systems **ECE 6670** Control of Electric Motors **ME EN 6210/ ECE 6652/ CH EN 6203** State Space Control **ME EN 7200** Nonlinear Control **ME EN 7210** Optimal Control **ECE 6570** Adaptive Control	**ROBOT 6500** Advanced Mechatronics **ROBOT 6960** Wearable Robotics **ECE 6780/ CS 6780** Embedded System Design **ECE 6960** Robotic Millisystems **CS 6956** Medical Robotics	**CS 6360** Virtual Reality **ROBOT 7400** Haptics for VR,Tele-operation, and Physical Human-Robot Interaction **ROBOT 6400** Neural Engineering and NeuroRobotics	**CS 7640** Adv. Image Processing **CS 6353** Deep Learning for Image Analysis **ECE 6530** Digital Signal Processing
COGNITION **CS 6350** Machine Learning **CS 6958** Robot Learning				