Fall 2020 Course List

Updated September 15, 2020

Robotics Core:

- ROB 501: Math for Robotics (Gregg)
- ROB 502: Programming for Robotics (Haggenmiller)
- ROB 550: Robotics Systems Lab (Gaskell)

Sensing:

- AEROSP 740: Special Topics – Parameter Inference & State Estimation (Gorodetsky)
- CEE 575: Sensors, Data, and Smart Systems (Kerkez)
- EECS 442: Computer Vision (Owens)
  *Enrollment is primarily reserved for undergraduate students. Grad enrollment with instructor consent
- EECS 504: Foundations of Computer Vision (Corso)
- EECS 542: Advanced Topics in Computer Vision (Fouhey)
- EECS 551: Matrix Methods for Signal Processing (Fessler)
- EECS 598.005: Deep Learning for Computer Vision (Johnson)

Reasoning:

- AEROSP 584: Navigation & Guidance of Aerospace Vehicles (Girard)
- EECS 505: Computational Data Science and Machine Learning (Nadakuditi)
- EECS 545: Machine Learning (Scott)
- EECS 548: Info Visualization (Adar)
- EECS 550: Information Theory (Pradhan)
- EECS 563: Hybrid Systems: Specification, Verification, & Control (Ozay)
- EECS 576: Advanced Data Mining (Koutra)
- EECS 592: Foundations of Artificial Intelligence
- EECS 595: Natural Language Processing (Chai)

- EECS 598.002: Computational Modeling in HCI (Banovic)
- EECS 598.003: Reinforcement Learning Theory (Ying)
- IOE 512: Dynamic Programming (Shen)
- IOE 536: Cognitive Ergonomics (Sarter)
- IOE 611: Nonlinear Programming (Epelman)

Acting:

- AEROSP 540 / MECHENG 540: Intermediate Dynamics (Gillespie)
- AEROSP 573: Dynamics and Control of Spacecraft (Kolmanovsky)
- EECS 461: Embedded Systems Control (Freudenberg)
- EECS 560/ MECHENG 564 / AEROSP 550: Linear Systems Theory (Gillespie)
- EECS 563: Hybrid Systems: Specification, Verification, & Control (Ozay)
- EECS 566: Discrete Event Systems (Lafortune)
- MECHENG 461: Automatic Control (Vasudevan)
- MECHENG 599.005: Introduction to Robotic Manipulation (Fazeli)
- NAVARCH 540: Marine Dynamics III
- NAVARCH 583: Adaptive Control (Sun)
- ROB 511: Robot Operating Systems (Jenkins)

Elective:
In addition to the courses listed below, any 500-level CoE course can count as an elective.

- AEROSP 495: Fundamentals of Aerospace Computing (Jeannin)
- AEROSP 585: Aerospace Seminar (topic varies by term)
- EEB 800: Comparative Biomechanics of Locomotion (Zhang)
- EECS 460: Control Systems Analysis and Design (Seiler)
- EECS 467: Autonomous Robotics (Kuipers)
- EECS 498: Special Topics - Introduction to Algorithmic Robotics (cannot count toward ROB degree requirements if taken concurrently with or after ROB 550)
- EECS 501: Probability & Random Processes (Pradhan)
- EECS 587: Parallel Computing (Stout)
- EECS 598.003: Applied GPU Programming (Das)
- EECS 600 / IOE 600: Function Space Methods in System Theory (Balzano)

- ELI 521: Writing for Academic Purposes I (Scott)
- ENGR 580: Teaching Engineering (Finelli)
- ENTR 550: Interpersonal Skills: Leveling up to Leadership (Fretz)
- ENTR 560: Project Management and Consulting (Cell)
- ISD 599.006: Vehicle Crashworthiness and Occupant Protection (Hu)
- MATH 451: Advanced Calculus I (TBD)
- MATH 525: Probability Theory (TBD)
- MATH 658: Nonlinear Dynamics and Geometric Mechanics (Bloch)
- MECHENG 552: Mechatronic Systems Design (Awtar)
- MECHENG 560: Modeling Dynamic Systems (Stein)
- TCHNCLCM 610: Dissertation, Diss. Proposal, & Thesis Writing (Snyder Marr)