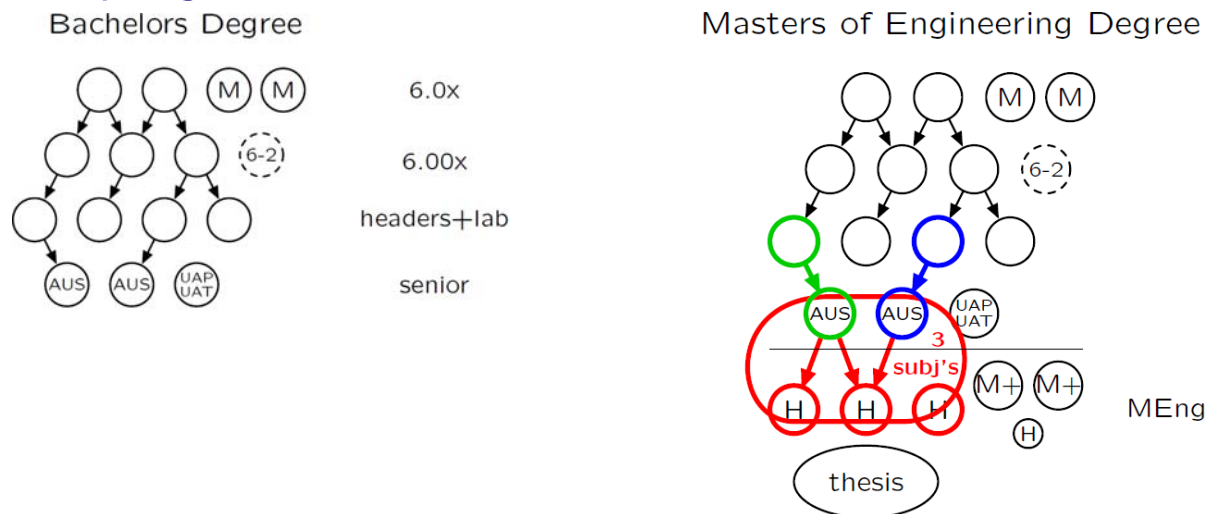


EECS Master of Engineering Degree (New Curriculum)

1 Requirements

- Satisfy requirements for 6-1 or 6-2 or 6-3 Bachelor's Degree (new curriculum).
 - Four H-level graduate subjects totaling at least 42 units.
 - at least 36 units from EECS subjects
 - in combination with 2 AUS's, must contain a concentration of at least 3 subjects (at least one grad-H)
 - ★ Artificial Intelligence
 - ★ BioEECS
 - ★ Circuits
 - ★ Communications
 - ★ Computer Systems
 - ★ Control
 - ★ Graphics and Human-Computer Interfaces
 - ★ Materials, Devices and Nanotechnology
 - ★ Numerical Methods
 - ★ Optics, Electromagnetics and Energy
 - ★ Signals and Systems
 - ★ Theoretical Computer Science
 - Two subjects from Restricted EECS Electives
 - MEng Thesis (24 units)
- Program must include at least 66 units plus 24 units of thesis.

2 Summary diagrams



3 Restricted Electives in EECS

(Cannot be double counted with the Course VI Undergraduate Math Requirement)

- | | | |
|---|----|---|
| • 6.041 Probabilistic Systems Analysis | or | 18.440 Probability and Random Variables |
| • 18.04 Complex Variables with Applications | or | 18.075 Advanced Calculus for Engineers |
| • 18.06 Linear Algebra | or | 18.700 Linear Algebra |
| • 6.042J Mathematics for Computer Science | | |
| • 18.085 Computational Science and Engineering I | | |
| • 18.086 Computational Science and Engineering II | | |
| • 18.100 Analysis I | | |
| • 18.311 Principles of Applied Mathematics | | |
| • 18.330 Introduction to Numerical Analysis | | |
| • 18.353 Nonlinear Dynamics I: Chaos | | |
| • 18.703 Modern Algebra | | |
| • 18.781 Theory of Numbers | | |

4 Concentrations

Special AUS (If not used to satisfy another Institute or Department Requirement)

6.111 Introductory Digital Systems Laboratory

6.115 Microcomputer Project Laboratory

6.131 Power Electronics Laboratory

4.1 Artificial Intelligence

AUS or Conc.	6.142J	Robotics: Science and Systems II
	6.801	Machine Vision
	6.803	The Human Intelligence Enterprise
	6.804J	Computational Cognitive Science
	6.825	Techniques in Artificial Intelligence
	6.867	Machine Learning
Concentration	6.345J	Automatic Speech Recognition
	6.832	Underactuated Robotics
	6.833	The Human Intelligence Enterprise
	6.834J	Cognitive Robotics
	6.863J	Natural Language and the Computer Representation of Knowledge
	6.864	Advanced Natural Language Processing
	6.866	Machine Vision
	6.868J	The Society of Mind
	6.869	Advances in Computer Vision
	6.872J	Biomedical Computing
	6.873	Applied Machine Learning
	6.873J	Biomedical Decision Support
	6.881	Special Topics
	6.882	Special Topics
	6.886	Special Topics
	6.887	Special Topics
	6.945	Large-scale Symbolic Systems

4.2 BioEECS

AUS or Conc.	6.022J	Quantitative Systems Physiology
	6.023J	Fields, Forces and Flows in Biological Systems
	6.047	Computational Biology: Genomes, Networks, Evolution
Concentration	6.345J	Automatic Speech Recognition
	6.521J	Cellular Biophysics
	6.522J	Quantitative Systems Physiology
	6.524J	Molecular, Cellular, and Tissue Biomechanics
	6.541J	Speech Communication
	6.542J	Laboratory on the Physiology, Acoustics, and Perception of Speech
	6.543J	The Lexicon and Its Features
	6.551J	Acoustics of Speech and Hearing
	6.552J	Signal Processing by the Auditory System: Perception
	6.555J	Biomedical Signal and Image Processing
	6.556J	Data Acquisition and Image Reconstruction in MRI
	6.561J	Fields, Forces, and Flows in Biological Systems
	6.581J	Foundations of Algorithms and Computational Techniques in Systems Biology
	6.582J	Molecular Simulations
	6.874	Computational Systems Biology
	6.877J	Computational Evolutionary Biology
	6.878J	Advanced Computational Biology: Genomes, Networks, Evolution
	6.971	Special Topics
	6.985	Special Topics

4.3 Circuits

AUS or Conc.	6.301	Solid-State Circuits
	6.302	Feedback Systems
Concentration	6.331	Advanced Circuit Techniques
	6.334	Power Electronics
	6.374	Analysis and Design of Digital Integrated Circuits
	6.375	Complex Digital Systems Design
	6.376	Low Power Analog VLSI
	6.775	CMOS Analog and Mixed-Signal Circuit Design

- 6.776 High Speed Communication Circuits
- 6.973 Special Topics

4.4 Communications

- AUS or Conc. 6.207 Networks
- 16.36 Communication Systems Engineering
- Concentration 6.262 Discrete Stochastic Processes
- 6.263J Data-Communication Networks
- 6.264J Queues: Theory and Applications
- 6.265J Advanced Stochastic Processes
- 6.266 Network Algorithms
- 6.281J Logistical and Transportation Planning Methods
- 6.434J Statistics for Engineers and Scientists
- 6.435 System Identification
- 6.436J Fundamentals of Probability
- 6.437 Inference and Information
- 6.438 Algorithms for Inference
- 6.440 Essential Coding Theory
- 6.441 Information Theory
- 6.442 Optical Networks
- 6.450 Principles of Digital Communication I
- 6.451 Principles of Digital Communications II
- 6.452 Principles of Wireless Communication
- 6.453 Quantum Optical Communication
- 6.972 Special Topics

4.5 Computer Systems

- AUS or Conc. 6.035 Computer Language Engineering
- 6.172 Performance Engineering of Software Systems
- 6.805 Ethics and the Law on the Electronic Frontier
- 6.814 Database Systems
- 6.857 Network and Computer Security
- Concentration 6.821 Programming Languages
- 6.823 Computer System Architecture
- 6.824 Distributed Computer Systems Engineering
- 6.826 Principles of Computer Systems
- 6.827 Multithreaded Parallelism: Languages and Compilers
- 6.828 Operating System Engineering
- 6.829 Computer Networks
- 6.830 Database Systems
- 6.846 Parallel Computing
- 6.883 Special Topics
- 6.884 Special Topics
- 6.888 Special Topics
- 6.893 Special Topics

4.6 Control

- AUS or Conc. 6.302 Feedback Systems
- Concentration 6.231 Dynamic Programming and Stochastic Control
- 6.241 Dynamic Systems and Control
- 6.242 Advanced Linear Control Systems
- 6.243 Dynamics of Nonlinear Systems
- 6.245 Multivariable Control Systems
- 6.986 Special Topics

4.7 Graphics and Human-Computer Interfaces

- AUS or Conc. 6.813 User Interface Design and Implementation
- 6.815 Digital and Computational Photography
- 6.837 Computer Graphics
- Concentration 6.831 User Interface Design and Implementation
- 6.835 Intelligent Multimodal User Interfaces
- 6.839 Advanced Computer Graphics
- 6.865 Advanced Computational Photography
- 6.891 Special Topics
- 6.892 Special Topics
- 6.894 Special Topics

4.8 Materials, Devices and Nanotechnology

AUS or Conc.	6.602	Fundamentals of Photonics
	6.701	Introduction to Nanoelectronics
Concentration	6.719	Nanoelectronics
	6.720J	Integrated Microelectronic Devices
	6.728	Applied Quantum and Statistical Physics
	6.729	Molecular Electronics
	6.730	Physics for Solid-State Applications
	6.731	Semiconductor Optoelectronics: Theory and Design
	6.732	Physics of Solids
	6.763	Applied Superconductivity
	6.772	Compound Semiconductor and Heterostructure Devices
	6.774	Physics of Microfabrication: Front End Processing
	6.777J	Design and Fabrication of MEMS
	6.778J	Materials and Processes for Microelectromechanical Devices and Systems
	6.780J	Control of Manufacturing Processes
	6.781J	Nanostructure Fabrication
	6.789	Organic Optoelectronics
	6.987	Special Topics

4.9 Numerical Methods

AUS or Conc.	6.079	Introduction to Complex Optimization (Fall 2009 only)
	6.336J	Introduction to Numerical Simulation
Concentration	6.251J	Introduction to Mathematical Programming
	6.252J	Nonlinear Programming
	6.253	Convex Analysis and Optimization
	6.254	Game Theory with Engineering Applications
	6.255J	Optimization Methods
	6.256	Algebraic Techniques and Semidefinite Optimization
	6.337J	Introduction to Numerical Methods
	6.338J	Parallel Computing
	6.339J	Numerical Methods for Partial Differential Equations
	6.581J	Foundations of Algorithms and Computational Techniques in Systems Biology
	6.673	Introduction to Numerical Simulation in Electrical Engineering
	6.975	Special Topics

4.10 Optics, Electromagnetics and Energy

AUS or Conc.	6.061	Introduction to Electric Power Systems
	6.602	Fundamentals of Photonics
	6.641	Electromagnetic Fields, Forces, and Motion
Concentration	6.621	Fundamentals of Photonics
	6.630	Electromagnetics
	6.631	Optics and Photonics
	6.632	Electromagnetic Wave Theory
	6.634J	Nonlinear Optics
	6.637	Optical Signals, Devices, and Systems
	6.638	Ultrafast Optics
	6.642	Continuum Electromechanics
	6.685	Electric Machines
	6.690	Introduction to Electric Power Systems
	6.691	Seminar in Electric Power Systems
	6.974	Special Topics
	6.988	Special Topics

4.11 Signals and Systems

AUS or Conc.	6.341	Discrete-Time Signal Processing
Concentration	6.342	Wavelets, Approximation, and Compression
	6.344	Digital Image Processing
	6.345J	Automatic Speech Recognition
	6.555J	Biomedical Signal and Image Processing
	6.556J	Data Acquisition and Image Reconstruction in MRI
	6.989	Special Topics

4.12 Theoretical Computer Science

AUS or Conc.	6.045J	Automata, Computability, and Complexity
	6.047	Computational Biology: Genomes, Networks, Evolution

	6.840J	Theory of Computation
	6.854J	Advanced Algorithms
Concentration	6.338J	Parallel Computing
	6.841J	Advanced Complexity Theory
	6.842	Randomness and Computation
	6.850	Geometric Computing
	6.851	Advanced Data Structures
	6.852J	Distributed Algorithms
	6.855J	Network Optimization
	6.856J	Randomized Algorithms
	6.875J	Cryptography and Cryptanalysis
	6.876J	Advanced Topics in Cryptography
	6.878J	Advanced Computational Biology: Genomes, Networks, Evolution
	6.885	Special Topics
	6.895	Special Topics
	6.896	Special Topics
	6.889	Special Topics