*Example 2: Media and Cultural Studies*

*This is a partial map

*New courses have asterisks

*Courses with color-shaded cells have learning outcomes yet to be determined

| Course Code | Course Title | Course Description | Outcomes |
|---|---|---|---|
| MCS 001 | Introduction to Media and Cultural Studies | Examines media from economic, political, and cultural perspectives. Discusses their relation to U.S. export industries; democratic communication and the parliamentary process; and social trends. Explores how changes in media and associated technologies are akin to a new industrial revolution. | 1, 2 |
| *MCS 002 | Introduction to Immersive Media | Focuses on tools for fast prototyping interactive media. Combines contemporary board and pencil and paper game and card design with computer game design, and VR, and digital/web production. | |
| *MCS 003 | Immersive Media Production | Focuses on creative activity. Students with existing expertise in a design field are brought together for a devised project. | |
| MCS 004 | Introduction to Moving Images: Film, Video, and New Media | Explores issues and skills of video/film/media art based in production, history, and theory of the moving image. Introduces basic production, editing concepts and techniques of live-action production, story boards, image editing, and final authoring. Examines the moving image through installation, documentary, experimental film, video art, sound art, and performance. Cross-listed with ART 004. | 6 |
| MCS 005 | Media Studies: Theory and Practice | Introduces the history of various mass media industries. Analyzes the roles, functions, and effects of mass communication. Discusses recent technological developments and their implications for communication studies, as well as media law, policy, and ethics. Investigates the diffusion and impact of U.S. mass media in an era of heightened globalization | 1, 2, 3 |

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|---|---|---|---|
| MCS 006 | Introduction to Contemporary Critical Issues in Art | Examines basic principles and methodologies of theory as applied to the interpretation and creation of works of art. Includes screenings. | 1, 5 |
| *MCS 007 | Digital Journalism and Society | Explores the emerging field of digital journalism. Discusses its theoretical, professional, and practical dimensions. Topics include history, technology, political economy, content, and pattern of digital journalism; innovative journalistic practices; and the impact of digital media on contemporary culture, politics, and society. | 1, 4 |
| MCS 009 | Music in Movies and TV | An exploration of popular film and TV soundtrack music, emphasizing drama and musical style. Scene study features such films as The Matrix, Casablanca, The X-Files, and Altered States. | 1 |
| *MCS 010 | Cultural Studies: Historical and Contemporary Perspectives | Investigates culture through the frameworks of feminism, Marxism, and race theories. Analyzes the different methodologies cultural critics use to theorize subcultures, cultural policies, and consumption. Explores ways cultural works are not only produced and received but also distributed and circulated within national and transnational contexts. | 1, 2, 3 |
| *MCS 011 | Drug Markets as Conformity and Resistance | Examines the raced, gendered, and classed dimensions of the illegal drug market within historical, economic, political, and global contexts. | 2, 3 |
| *MCS 012 | Gangs: A Critical Analysis | Examines the raced, gendered, and classed dimensions of gangs within historical, economic, political, and global contexts. | 2, 3 |
| MCS 015 | Introduction to Television Studies | An introduction to the study of television, including its stylistic conventions, primary genres, modes of production, economics, and important critical methodologies. | 1, 2, 3 |
| MCS 020 | Introduction to Film Studies | An introduction to the formal and narrative principles of film construction and to various critical approaches to the cinema, such as auteur and genre theory. Provides an overview of world cinemas. | 1, 2 |
| MCS 021 | Introduction to Film, Literature, and Culture | Surveys critical approaches to the cinema such as auteur and genre theory. Studies literature and film, national cinemas, and film movements. | 1, 2, 3, 4 |
| MCS 022 | Introduction to Japanese Film | An introduction to Japan's major directors and to watching and writing about Japanese film. Works studied range from the samurai epics of Kurosawa to recent anime. All films have subtitles. No previous knowledge of Japanese language or culture is required. | 1, 2, 3, 4 |

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|---|---|---|---|
| MCS 023 | Introduction to Media Art | An introduction to the impact of media technology on the visual arts, from photography to the Internet. Addresses mechanical reproduction, perception, gender, sexuality, identity, interactivity, cybernetics, and popular culture. | 1, 2, 4 |
| MCS 024 | World Cinema | Introduction to world cinema as a fusion of national and international, culturally specific, and globally universal characteristics. Topics include realism, the role of world wars, Hollywood's global reach, alternative aesthetics of third-world cinemas, cross-fertilization between Europe and Asia, and the function of international film festivals and the international film market. | |
| *MCS 025 | Suburbia | Introduces the history of suburbia from the Industrial Revolution to the present. Includes the rise of suburbs in England; classic suburbs in the United States; the spread of suburbs and mass transportation; the role of race and gender in suburbia; suburban sprawl in Southern California and sustainability and suburban development. | 2,3 |
| *MCS 027 | Introduction to Video Game Studies | Offers an introduction to the critical study of video games. Considers questions about the meaning of play. Explores media form and content including video game representations and media effects on individuals and groups. | 2, 3, 4 |
| MCS 036 | Food in Film | Explores the representation of food, cooking, and restaurants in films from different national traditions. Includes gender roles; sensuality and sexuality; social class and the economics of food; excess and lack. | 2, 4 |
| MCS 038 | The Ancient World in Film and Television | A study of representations of Greece and Rome in film, television, and other modern media. Introduces these 'visual texts' both as popular art forms on their own and in relation to their ancient and modern literary sources. | |
| MCS 042 | Introduction to German Cinema | Introduction to the history of German cinema from the advent of the studio system to the present. Covers film in Germany, Switzerland, and Austria. Attention is paid to the work of German-speaking filmmakers living in other parts of the world. Instruction is in English; all films have subtitles. | 1, 2, 3 |
| MCS 043 | Soviet Cinema | A survey of the Soviet cinema, beginning with the film innovations of the 1920s and continuing with representative films from each of the ensuing periods of Soviet culture. All work done in English | 1, 2, 3 |

*Example 3: Physics*

| Course | Title | LO 1 | LO 2 | LO 3 | LO 4 | LO 5 | LO 6 | LO 7 | LO 8 |
|---|---|---|---|---|---|---|---|---|---|
| *i. Lower Division Core (Required)* | | | | | | | | | |
| 41A | General Physics | I | | I | I | | I | I | |
| 41B | General Physics | I | | I | I | | I | I | |
| 41C | General Physics | I | | I | I | | I | I | |
| *ii. Upper Division Core (Required for standard track)* | | | | | | | | | |
| 130A | Classical Mechanics | R | | R | | | | | |
| 130B | Classical Mechanics | R | | R | | | | | |
| 132 | Thermodynamics | R | | R | | | | | |
| 133 | Statistical Physics | R | | R | | | | | |
| 135A | Electromagnetism | R | | R | | | | | |
| 135B | Electromagnetism | R | | R | | | | | |
| 136 | Electromagnetic Waves | R | | R | | | | | |
| 139L | Electronics for Scientists | M | | M | M | | M | R | |
| 142L | Advanced Physics Laboratory | M | M | M | M | M | M | M | |
| 142W | Advanced Physics Laboratory | M | M | M | M | M | M | M | |
| 156A | Quantum Mechanics | R | | R | | | | | |
| 156B | Quantum Mechanics | R | | R | | | | | |
| *iii. Physics Electives (minimum 3 required)* | | | | | | | | | |
| 17 | Linear Algebra for Physics | R | | R | | | | | |

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|---|---|---|---|---|---|---|---|---|---|
| 111 | Astrophysics and Stellar Astronomy | | M | M | | M | | | |
| 117 | Advanced Mathematical Methods of Physics | M | | M | | | | | |
| 145A | Biophysics | | M | M | | M | | | |
| 145B | Biophysics | | M | M | | M | | | |
| 145C | Biophysics | | M | M | | M | | | |
| 150A | Intro to Condensed Matter Physics | | M | M | | M | | | |
| 150B | Intro to Condensed Matter Physics | | M | M | | M | | | |
| 151 | Topics in Modern Condensed Matter Research | | M | M | | M | | | |
| 152A | Exploring Many-Body Quantum Physics with Mathematica | | M | M | M | M | | | |
| 152B | Exploring Many-Body Quantum Physics with Mathematica | | M | M | M | M | | | |
| 156C | Quantum Mechanics | | M | M | | M | | | |
| 163 | Atomic Physics and Spectroscopy | | M | M | | M | | | |
| 164 | Intro to Nuclear Physics | | M | M | | M | | | |
| 165 | Intro to Particle Physics | | M | M | | M | | | |
| 166 | Cosmology | | M | M | | M | | | |
| 168 | Energy and the Environment | | M | M | | M | | | |
| 177 | Computational Methods for Physics Science | | M | M | M | | | | |
| *iv. Seminars and Optional Research Courses* | | | | | | | | | |
| 39 | Adventures in Physics (highly recommended for all freshman and transfer students) | I | | I | | R | | | R |
| 190 | Special Studies | | M | M | M | M | M | M | M |
| 190L | Special Studies at Los Alamos National Laboratory | | M | M | M | M | M | M | M |
| 195A | Senior Thesis | | M | M | M | M | M | M | M |
| 195B | Senior Thesis | | M | M | M | M | M | M | M |
| 195C | Senior Thesis | | M | M | M | M | M | M | M |

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|---|---|---|---|---|---|---|---|---|---|
| 195D | Senior Thesis | | M | M | M | M | M | M | M |
| 197 | Research for Undergraduates | | M | M | M | M | M | M | M |
| 198-I | Individual Internship in Physics | | M | M | M | M | M | M | M |

I=Introduced, R=Reinforced, M=Mastered

*Example 4: Biochemistry*

| Learning Objective | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | L10 | L11 | L12 | L13 | L14 | L15 | L16 | L17 | L18 | L19 | L20 | L21 | L22 | L23 | L24 | L25 | L26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Course | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BCH 095 | | | | | | | | | | | | | | | | | | | | | | | I | | | I |
| BCH 096 | | | | | | | | | | | | | | | | | | | | | | | I | | | |
| BCH 015 | I,P | I,P | | | I | | | | I | I | I | | I | | | | | | I | I,P | I | | | I | | |
| BCH 110A | | | | I | I | I | I | I | P | I | I | I | | I | | I | | | | | | | | | | |
| BCH 110B | | | I | P | P | P | P | | | | | I | | | | | | I | | | | | | | | |
| BCH 110HB | | | P, D | P | P | P | P | | | | | P, D | | | | | | | | | I | | | | | |
| BCH 110C | | | | | | | | I | P | | | | P | P | I | P | I | I | | | | | | | | |
| BCH 120 | | | P | P | P | | P | | | | | I | | | | | | I | | | | | | | | |
| BCH 162 | P,D | P,D | | | P | | D | P | D | D | P | | | P | | P | | | P | D | I, P | I | | P | | |
| BCH 180 (E-Z) | | | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | | | P | |
| BCH 184 | | | | | | D | | | | D | D | | | | | | | | | | | | | | | |
| BCH 186 | | | | | D | D | | | D | D | D | | | | | | | | | | | | | | | |
| BCH 187 | | | | | D | D | | | D | D | D | D | | | | | | | | | | | | | | |
| BCH 188 | | | | | | | | D | | | | | | | | | | | P | D | D | D | | | D | |
| BCH 189 | | | | | | | | D | D | D | D | D | D | D | D | D | D | D | P | D | D | D | D | D | P | |
| BCH 190 | | | | | | | | | | | | | | | | | | | D | D | D | D | D | D | | |
| BCH 197 | P,D | P,D | | | | | | | | | | | | | | | | | D | D | D | D | D | D | | |

I=Introduced; P=Practiced; D=Demonstrated

## Graduate Examples

*Example 1: Business Administration*

| | Learning Goal #1: Professional Integrity / Ethical Reasoning Skills | Learning Goal #2: Global Context Skills | Learning Goal #3: Written Communication | Learning Goal #4: Information Technology Skills |
|---|---|---|---|---|
| Management 200 - Organizational Behavior and Theory | Introduce and practice Professional Integrity / Ethical Reasoning Skills | | Practice writing effective case analysis reports | |
| Management 201 - Statistics for Management | | Introduce and practice decision-making and solving management problems using data. | | |
| Management 202 - Financial Management | | Introduce and practice managing a firm's investment decisions in a global environment | | |
| Management 203 - Managerial Economics | Introduce and practice Professional Integrity / Ethical Reasoning Skills | | | |
| Management 205 - Information Systems | | | | Introduce and practice operation and management of information systems as applied to the business environment. |
| Management 207 - Operations Management for Competitive Advantage | Introduce and practice Professional Integrity / Ethical Reasoning Skills | | Practice writing effective case analysis reports | Introduce and practice skills and tools to analyze, optimize, and improve production processes for competitive advantage. |
| Management 209 - Marketing Management | Introduce and practice Professional Integrity / Ethical Reasoning Skills | Introduce concepts on local, national and global marketing environment and functions. | Practice developing effective marketing plans. | Practice data collection, analyses using multiple online sources and databases. |

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|---|---|---|---|---|
| Management 211 - Financial Accounting | Introduce and practice Professional Integrity / Ethical Reasoning Skills | | | Introduce and practice analytical tools in using of financial accounting information. |
| Management 235 - Strategic Management | Introduce and practice Professional Integrity / Ethical Reasoning Skills | Introduce and practice the formulation, implementation, and evaluation of business unit and corporate strategies and the organizational policies and managerial practices that support them. | Practice writing effective case analysis reports | |
| | | | | |
| MGT 298i - Fieldwork in Management | | Introduce and practice field experience culminating in a final report or other academic component | | |
| | | | | |
| MGT 402: Business Career Professional Development Workshop | Practice ethical and professional behavior to network in person and via social media outlets. | | Practice development and presentation of student's ideas clearly at internship and job interviews. | |

*Example 2: Visual Art*

| | Outcome 1: Engagemant in making | Outcome 2: Analysis of theoretical and historical Issues | Outcome 3: Critical self and peer evaluation | Outcome 4: Proficiency in art making | Outcome 5: Professional Preparedness |
|---|---|---|---|---|---|
| **ART 230 Contemporary Critical Issues** | | introduced/practiced (lecture/presenation/paper) | | | |
| **ART 240 Current Topics in Critical Theory** | | introduced/practiced (lecture/presenation/paper) | | | |
| **Graduate Level Art Hisotry Seminar** | | introduced/practiced (lecture/presenation/paper) | | | |
| **ART 293 Directed Individual Studio Production** | introduced/practiced/demonstrated (Individual studio meeting w/faculty) | | introduced/practiced/demonstrated (Individual studio meeting w/faculty) | introduced/practiced/demonstrated (Individual studio meeting w/faculty) | indroduced (Individual studio meeting w/faculty) |
| **ART 285 Peer Critique** | practiced/demonstrated (Group critique w/faculty) | | introduced/practiced/demonstrated (Group critique w/faculty) | introduced/practiced/demonstrated (Group critique w/faculty) | |
| **ART 299 Research for Thesis** | | practiced/demonstrated (Individual studio meeting w/faculty) | | | introduced (Individual studio meeting w/faculty) |
| **ART 302 Teaching Practicum** | introduced/practiced/demonstrated (Classroom observation of mentor and practice) | | | | |
| | | | | | |
| **Self-directed Studio Practice** | practiced (Studio/Lab experience) | | | practiced (Studio/Lab experience) | |
| **Visiting Artist Studio meetings (Art 180 and Spring Artist Lectures: 8 times 1 hour meetings per student per year)** | introduced/practiced/demonstrated (Individual studio meeting w/Art Professionals) | | introduced/practiced/demonstrated (Individual studio meeting w/Art Professionals) | introduced/practiced/demonstrated (Individual studio meeting w/Art Professionals) | introduced (Individual studio meeting w/Art Professionals) |
| **1st and 2nd year Exhibition at the Riverside Art Museum** | | | | practiced/demonstrated (Public group exhibition) | practiced/demonstrated (Public group exhibition) |
| **1st and 2nd Year Review** | introduced/practiced/demonstrated (Faculty Review Presentation/Feedback w/student) | practiced/demonstrated (Faculty Review Presentation/Feedback w/student) | practiced/demonstrated (Faculty Review Presentation/Feedback w/student) | practiced/demonstrated (Faculty Review Presentation/Feedback w/student) | practiced/demonstrated (Faculty Review Presentation/Feedback w/student) |
| **Bi-Annual Open Studio Event** | | | | practiced (exhibition of work in studios) | practiced (exhibition of work in studios) |
| | | | | | |
| | | | | | |
| **Thesis Exhibition and Written Thesis Submission** | | | | demonstrated (Public Exhibition and written Thesis submission) | demonstrated (Public Exhibition and written Thesis submission) |

## *Example 3: Bioengineering*

| | PhD SLO I | PhD SLO II | PhD SLO III | PhD SLO IV | PhD SLO V | PhD SLO VI | MS Plan 1 SLO I | MS Plan 1 SLO II | MS Plan 1 SLO III | MS Plan 1 SLO IV | MS Plan 1 SLO V | MS Plan 2 SLO I | MS Plan 2 SLO II | MS Plan 2 SLO III | MS Plan 2 SLO IV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BIEN 201: Mathematical methods in bioengineering** | | IP | | | | | | IP | | | | | IP | | |
| **BIEN 202: Mathematical and computational methods in bioengineering** | | IP | | | | | | | | | | | | | |
| **BIEN 211: Advanced statistics and research design for bioengineering** | | IP | | | | | | IP | | | | | IP | | |
| **BIEN 223: Engineering analysis of physiological systems** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 224: Cellular and molecular engineering** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 225: Self-organization in engineered and native tissue** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 227: Biophotonics: laser-tissue interactions and therapeutic applications** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 228: Biophotonics: optical diagnosis and measurements** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 234: Orthopaedic regenerative medicine and mechanobiology** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 235: Vascular biomechanics and engineering** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 236: Nanomaterials for regenerative medicine** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 237: Medical diagnostics** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 242: Advanced biomedical optical imaging** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 245: Optical methods in biology, chemistry, and engineering** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 249: Integration of computational and experimental biology** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 264: Biotransport phenomena** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 270: Transport with reactions in biological systems** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 275: Magnetic resonance imaging** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 276: Introduction to neuroimaging with MRI** | IP | | | | | | IP | | | | | IP | | | |
| **BIEN 286: Colloquium in bioengineering** | | | | IP | | IP | | | | IP | IP | | | IP | IP |
| **BIEN 302: Teaching practicum** | | | | | IP | | | | | | | | | | |
| **BIEN 401: Fundamentals of proposal preparation and ethical standards in bioengineering** | | | | IP | | IP | | | | | | | | | |
| **BIEN 402: Effective writing for bioengineering research publications** | | | | IP | | IP | | | | IP | IP | | | IP | IP |
| **NRSC 200A: Fundamentals of neuroscience** | | IP | | | | | | IP | | | | | IP | | |
| **BCH 210: Biochemistry of macromolecules** | | IP | | | | | | IP | | | | | IP | | |
| **BIOL/CMDB 201: Molecular biology** | | IP | | | | | | IP | | | | | IP | | |
| **BIOL/MCBL 221: Microbial genetics** | | IP | | | | | | IP | | | | | IP | | |
| **CMDB 207: Stem cell biology and disease** | | IP | | | | | | IP | | | | | IP | | |
| **BCH 212: Signal transduction and biochemical regulation** | | IP | | | | | | IP | | | | | IP | | |
| **BIOL/CMDB 200: Cell biology** | | IP | | | | | | IP | | | | | IP | | |
| **BCH 211: Molecular biology** | | IP | | | | | | IP | | | | | IP | | |
| **CEE 238A: Bioprocess degisn laboratory** | | IP | | | | | | IP | | | | | IP | | |
| **EE 206/MSE 227A: Nanoscale characterization techniques** | | IP | | | | | | IP | | | | | IP | | |
| **EE 217: GPU architecture and parallel programming** | | IP | | | | | | IP | | | | | IP | | |
| **EE 244: Computational learning** | | IP | | | | | | IP | | | | | IP | | |
| **ME 220/EE 233: Optimal control and estimation** | | IP | | | | | | IP | | | | | IP | | |
| **ME 240A: Fundamentals of fluid mechanics** | | IP | | | | | | IP | | | | | IP | | |
| **ME 261: Theory of elasticity/solid mechanics** | | IP | | | | | | IP | | | | | IP | | |
| **ME 270/MSE 238: Introduction to microelectromechanical systems** | | IP | | | | | | IP | | | | | IP | | |
| **CEE 212: Bioseparations and bioprocess engineering** | | IP | | | | | | IP | | | | | IP | | |
| **EE 241: Advanced digital signal processing** | | IP | | | | | | IP | | | | | IP | | |
| **ME 241A: Fundamentals of heat and mass transfer** | | IP | | | | | | IP | | | | | IP | | |
| **ME 266/MSE 208: Mechanics and physics of materials** | | IP | | | | | | IP | | | | | IP | | |
| **ME 267L Finite element methods** | | IP | | | | | | IP | | | | | IP | | |
| **CEE 210: Cell engineering** | | IP | | | | | | IP | | | | | IP | | |
| **EE 237: Nonlinear systems and control** | | IP | | | | | | IP | | | | | IP | | |
| **EE 240: Pattern recognition** | | IP | | | | | | IP | | | | | IP | | |
| **EE 243: Computer vision** | | IP | | | | | | IP | | | | | IP | | |
| **ME 271: Therapeutic biomedical microdevices** | | IP | | | | | | IP | | | | | IP | | |
| **ME 272: Nanoscale science and engineering** | | IP | | | | | | IP | | | | | IP | | |
| | | | | | | | | | | | | | | | |
| **Written qualifying / Comprehensive exam** | D | PD | | | | | | | | | | D | | | |
| **Lab experience** | | P | IP | | | | | P | IP | | | | | | |
| **presentation in group meetings** | | | P | P | | | | | P | P | | | | | |
| **Oral qualifying exam (Advancement to candidacy)** | | PD | P | PD | | | | | | | | | | | |
| **Research progress evaluation** | | PD | P | PD | | | | PD | PD | PD | | | | | |
| **Written dissertation/thesis** | | D | D | D | | | | D | D | D | | | | | |
| **Dissertation/thesis defense** | | D | D | D | | | | D | D | D | | | | | |
| **Teaching experience** | | | | | PD | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| **faculty-student colloquium** | | | | P | | P | | | | P | P | | | P | P |
| **conference attendance/participation** | | | | PD | | PD | | | | PD | PD | | | | |
| **publications** | | | | PD | | PD | | | | PD | PD | | | | |
| **grant/fellowship application** | | | | PD | | PD | | | | PD | PD | | | | |
| **job placement** | | | | | | D | | | | | D | | | | D |

*Example 4: Electrical Engineering*

| PhD | 1. Students will have a broad and thorough understanding of the fundamental concepts, theoretical principles, and methodological approaches in one of the areas enumerated below:<br>i) Signals, Systems and Machine Intelligence (SSMI)<br>ii) Nano-Materials and Devices (NMD)<br>iii) Computer Engineering (CE) | 2) Students will have the ability to conduct independent research, which comprises of the abilities to<br>i) gain in-depth knowledge by researching the literature on a problem of interest<br>ii) identify new questions and research directions<br>iii) implement algorithms, techniques, or methods<br>iv) develop novel ideas, techniques, and approaches<br>v) apply existing know-how (intra- or inter-discipline) to a new problem | 3. Students will have the ability to write properly in technical English, in a format suitable for publication in typical IEEE (Institute of Electrical and Electronics Engineers) journals or conference proceedings | 4. Students will have the ability to orally present technical results and/or surveys | 5. Students will have the skills to become effective teachers if an academic career is to be pursued | 6. Students will have made timely progress |
|---|---|---|---|---|---|---|
| i. EE 215 Stochastic Processes | Introduced (lesson plan) | | | | | |
| i. EE 236 State and Parameter Estimation Theory | Practiced (lesson plan) | | | | | |
| i. EE 246 Intelligent Transportation Systems | | Practiced (lesson plan) | Demonstrated (project paper) | Demonstrated (project paper) | | |
| ii. EE 202 Fundamentals of Semiconductors and Nanostructures | Introduced (lesson plan) | | | | | |
| ii. EE 203 Solid-State Devices | Practiced (lesson plan) | | | | | |
| ii. EE 206 Nanoscale Characterization Techniques | | Practiced (lesson plan) | Demonstrated (project paper) | Demonstrated (project paper) | | |
| iii. EE 213 Computer-Aided Electronic Circuit Simulation | Introduced (lesson plan) | | | | | |
| iii. EE 221 Radio-Frequency Integrated Circuit Design | Practiced (lesson plan) | | | | | |
| iii. EE 224 Digital Communication Theory and Systems | | Practiced (lesson plan) | Demonstrated (project paper) | Demonstrated (project paper) | | |
| | | | | | | |
| Preliminary Exam | Demonstrated (exam) | Demonstrated (exam) | Demonstrated (exam) | | | |
| Oral Qualifying Exam and written report | | Demonstrated (presentation and report) | Demonstrated (presentation and report) | Demonstrated (presentation) | Demonstrated (presentation) | Demonstrated (observations of mentors) |
| | | | | | | |
| Annual Evaluation | | | | | Demonstrated (observations of mentors) | Demonstrated (observations of mentors) |
| Writing and oral defense of the dissertation | | Demonstrated (presentation and report) | Demonstrated (presentation and report) | Demonstrated (presentation) | Demonstrated (presentation) | |

| MS | 1. Students will have a good understanding of the fundamental concepts, theoretical principles, and methodological approaches in one of the three specializations enumerated below: i) Signals, Systems and Machine Intelligence (SSMI) ii) Nano-Materials and Devices (NMD) iii) VLSI Circuits and Systems (VLSI) | 2. Students will have the ability to conduct independent work, which comprises of the abilities to i) gain in-depth knowledge by researching the literature on a problem of interest ii) implement algorithms, techniques, or methods | 3. Students will have the ability to write properly in technical English | 4. Students will have the ability to orally present technical results and/or surveys | 5. Students will have made timely progress |
|---|---|---|---|---|---|
| i. EE 215 Stochastic Processes | Introduced (lesson plan) | | | | |
| i. EE 236 State and Parameter Estimation Theory | Practiced (lesson plan) | | | | |
| i. EE 246 Intelligent Transportation Systems | | Practiced (lesson plan) | Demonstrated (project paper) | Demonstrated (project paper) | |
| ii. EE 202 Fundamentals of Semiconductors and Nanostructures | Introduced (lesson plan) | | | | |
| ii. EE 203 Solid-State Devices | Practiced (lesson plan) | | | | |
| ii. EE 206 Nanoscale Characterization Techniques | | Practiced (lesson plan) | Demonstrated (project paper) | Demonstrated (project paper) | |
| iii. EE 213 Computer-Aided Electronic Circuit Simulation | Introduced (lesson plan) | | | | |
| iii. EE 221 Radio Frequency Integrated Circuit Design | Practiced (lesson plan) | | | | |
| iii. EE 224 Digital Communication Theory and Systems | | Practiced (lesson plan) | Demonstrated (project paper) | Demonstrated (project paper) | |
| | | | | | |
| Comprehensive Exam | Demonstrated (capstone exam) | Demonstrated (capstone exam) | Demonstrated (capstone exam) | | |
| Thesis | | Demonstrated (capstone exam) | Demonstrated (capstone exam) | Demonstrated (capstone exam) | Demonstrated (capstone exam) |
| | | | | | |
| Annual Evaluation | | | | | Demonstrated (observations of mentors) |