# EMERGING MEDIA AND TECHNOLOGY (EMAT)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Mode</th>
<th>Contact Hours</th>
<th>Schedule Type</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMAT 10010</td>
<td>INTRODUCTION TO EMERGING MEDIA AND TECHNOLOGY</td>
<td>3 Credit Hours</td>
<td>Lecture</td>
<td>3 lecture</td>
<td>Lecture</td>
<td>None.</td>
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<tr>
<td>EMAT 10310</td>
<td>MY STORY ON THE WEB</td>
<td>3 Credit Hours</td>
<td>Lecture</td>
<td>3 lecture</td>
<td>Lecture</td>
<td>None.</td>
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<tr>
<td>EMAT 23410</td>
<td>COGNITION IN TECHNOLOGY</td>
<td>3 Credit Hours</td>
<td>Lecture</td>
<td>3 lecture</td>
<td>Lecture</td>
<td>None.</td>
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<tr>
<td>EMAT 25310</td>
<td>CREATIVE CODING</td>
<td>3 Credit Hours</td>
<td>Lecture</td>
<td>3 lecture</td>
<td>Lecture</td>
<td>None.</td>
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<tr>
<td>EMAT 29995</td>
<td>SPECIAL TOPICS IN EMERGING MEDIA AND TECHNOLOGY</td>
<td>1-4 Credit Hours</td>
<td>Lecture</td>
<td>1-4 lecture</td>
<td>Lecture</td>
<td>CS 13001 or CS 13012 or EMAT 25310 or IT 11002.</td>
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<tr>
<td>EMAT 32210</td>
<td>DATA IN EMERGING MEDIA AND TECHNOLOGY</td>
<td>3 Credit Hours</td>
<td>Lecture</td>
<td>3 lecture</td>
<td>Lecture</td>
<td>None.</td>
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<tr>
<td>EMAT 33310</td>
<td>HUMAN-COMPUTER INTERACTION</td>
<td>3 Credit Hours</td>
<td>Lecture</td>
<td>3 lecture</td>
<td>Lecture</td>
<td>Sophomore standing.</td>
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<tr>
<td>EMAT 39995</td>
<td>SPECIAL TOPICS IN EMERGING MEDIA AND TECHNOLOGY</td>
<td>1-4 Credit Hours</td>
<td>Lecture</td>
<td>1-4 lecture</td>
<td>Lecture</td>
<td>None.</td>
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<tr>
<td>EMAT 40999</td>
<td>INTERDISCIPLINARY PROJECTS (ELR)</td>
<td>3 Credit Hours</td>
<td>Lecture</td>
<td>3 other</td>
<td>Lecture</td>
<td>Junior standing.</td>
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</table>
**EMAT 41510  PROJECT MANAGEMENT AND TEAM DYNAMICS (WIC)**  
3 Credit Hours  
(Slashed with EMAT 51510) Introduces students to the basic elements of project management as it relates to software development and the corporate environment. Although not formally endorsed by The Project Management Institute, the course aligns with the project management lifecycle approach endorsed in The Project Management Book of Knowledge.  
Prerequisite: EMAT 25310 or CS 13001 or CS 13012 or CIS 24065; and junior standing.  
Schedule Type: Lecture  
Contact Hours: 3 lecture  
Grade Mode: Standard Letter  
Attributes: Writing Intensive Course

**EMAT 41610  DIGITAL SYSTEMS SECURITY**  
3 Credit Hours  
(Slashed with EMAT 51610) Provides students with an understanding of the techniques, approaches, strategies, and computer security tactics that are used to ensure computer-related assets are protected from potential cyber compromise and are integrated with the business function. This course does not focus on the technical aspects of security (e.g., details of the operating system, data structures, or networks) but instead focuses more on computer security in a business context.  
Prerequisite: EMAT 25310 or CS 13001 or CS 13012 or CIS 24065; and junior standing.  
Schedule Type: Lecture  
Contact Hours: 3 lecture  
Grade Mode: Standard Letter

**EMAT 42210  WEB APPLICATION DEVELOPMENT**  
3 Credit Hours  
(Slashed with EMAT 52210) In this hands-on, project-based course, students are introduced to leading industry tools and frameworks being used to create commercial web applications today, including CSS frameworks, front-end frameworks and command line tools. Lectures, coding demonstrations and weekly assignments culminate in a collaborative final project in which students are asked to conceptualize, design and implement a web application in a collaborative, team setting.  
Prerequisite: EMAT 32210 and VCD 21000.  
Schedule Type: Lecture  
Contact Hours: 3 lecture  
Grade Mode: Standard Letter

**EMAT 49991  SEMINAR IN EMERGING MEDIA AND TECHNOLOGY**  
3 Credit Hours  
(Slashed with EMAT 59991) (Repeatable for credit) Society is driven, in part, by digital technology. The skills and techniques used in these fast-paced digital systems requires nimble and up-to-date skill sets. This course covers a rotating list of timely topics, including but not limited to mobile applications, content management systems, data visualizations and cutting-edge development frameworks. The student experience varies based on the topics from the rotation.  
Prerequisite: CS 13001 or CS 13012 or EMAT 25310 or IT 11002.  
Schedule Type: Seminar  
Contact Hours: 3 lecture  
Grade Mode: Standard Letter

**EMAT 49992  INTERNSHIP IN EMERGING MEDIA AND TECHNOLOGY (ELR)**  
1-6 Credit Hours  
(Repeatable for a maximum of 6 credit hours) A credit-bearing work experience with educational outcomes, utilizing and enhancing a student’s academic learning in practical occupational situations. The student is expected to complete pre-determined assignments, which may include a weekly journal, final paper, or experience report.  
Prerequisite: Junior standing; and special approval.  
Schedule Type: Practical Experience  
Contact Hours: 3-18 other  
Grade Mode: Satisfactory/Unsatisfactory-IP  
Attributes: Experiential Learning Requirement

**EMAT 49995  SPECIAL TOPICS IN EMERGING MEDIA AND TECHNOLOGY**  
1-4 Credit Hours  
(Repeatable for credit) Analysis of significant and current issues in emerging media and technology not covered in regular courses. Offered when opportunities and resources permit; the topic is announced when the course is scheduled.  
Prerequisite: None.  
Schedule Type: Lecture  
Contact Hours: 1-4 lecture  
Grade Mode: Standard Letter

**EMAT 49996  INDIVIDUAL INVESTIGATION IN EMERGING MEDIA AND TECHNOLOGY**  
1-3 Credit Hours  
(Repeatable for a maximum of 6 credit hours) Independent study carried out by a student under the supervision of a faculty member. Subject content, objectives, assignments and evaluation methods may vary.  
Prerequisite: Junior standing; and special approval.  
Schedule Type: Individual Investigation  
Contact Hours: 1-3 other  
Grade Mode: Standard Letter-IP

**EMAT 51510  PROJECT MANAGEMENT AND TEAM DYNAMICS**  
3 Credit Hours  
(Slashed with EMAT 41510) This course introduces students to the basic elements of project management as it relates to software development and the corporate environment. Although not formally endorsed by The Project Management Institute (www.PMI.org), the course will align with the project management elements of project management as it relates to software development and the corporate environment. Although not formally endorsed by The Project Management Institute (www.PMI.org), the course will align with the project management Book of Knowledge.  
Prerequisite: Graduate standing.  
Schedule Type: Lecture  
Contact Hours: 3 lecture  
Grade Mode: Standard Letter

**EMAT 51610  DIGITAL SYSTEMS SECURITY**  
3 Credit Hours  
(Slashed with EMAT 41610) Provides students with an advanced understanding of the techniques, approaches, strategies, and computer security tactics that are used to ensure computer-related assets are protected from potential cyber compromise and are integrated with the business function. This course does not focus on the technical aspects of security (e.g., details of the operating system, data structures, or networks) but instead focuses more on computer security in a business context.  
Prerequisite: Graduate standing.  
Schedule Type: Lecture  
Contact Hours: 3 lecture  
Grade Mode: Standard Letter
EMAT 52210 WEB APPLICATION DEVELOPMENT 3 Credit Hours
(Slashed with EMAT 42210) In this hands-on, project-based course, students are introduced to leading industry tools and frameworks being used to create commercial web applications today, including CSS frameworks, front-end frameworks and command line tools. Lectures, coding demonstrations and weekly assignments culminate in a collaborative final project in which students are asked to conceptualize, design and implement a web application in a collaborative, team setting.
Prerequisite: Graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EMAT 59991 SEMINAR IN EMERGING MEDIA AND TECHNOLOGY 3 Credit Hours
(Slashed with EMAT 49991) (Repeatable for credit) Society is driven, in part, by digital technology. The skills and techniques used in these fast-paced digital systems requires nimble and up-to-date skill sets. This course covers a rotating list of timely topics, including but not limited to mobile applications, content management systems, data visualizations and cutting-edge development frameworks. The student experience varies based on the topics from the rotation.
Prerequisite: Graduate standing.
Schedule Type: Seminar
Contact Hours: 3 other
Grade Mode: Standard Letter

EMAT 59995 SPECIAL TOPICS IN EMERGING MEDIA AND TECHNOLOGIES 1-3 Credit Hours
(Repeatable for credit) Analysis of significant and current issues in emerging media and technology not covered in regular courses. Offered when opportunities and resources permit; the topic is announced when the course is scheduled.
Prerequisite: Graduate standing.
Schedule Type: Lecture
Contact Hours: 1-3 lecture
Grade Mode: Standard Letter

EMAT 60010 FOUNDATIONS OF EMERGING MEDIA AND TECHNOLOGY 3 Credit Hours
Course provides an overview of foundational theories applied in the interdisciplinary emerging media and technology industries through case studies and interdisciplinary discussions. Covers issues related to technology and society; developing interdisciplinary thinking skills; examining the industry structure; and developing data-based writing, reporting and presentation skills.
Prerequisite: Graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EMAT 60310 CREATIVE CODING FUNDAMENTALS 3 Credit Hours
Course provides students hands-on experience, from applying foundational concepts in computational thinking and object-oriented programming to creating screen-based applications that move, interact and unfold over time. Specific topics covered include variables, loops, functions, classes and APIs (Application Programming Interfaces). Particular emphasis is placed on play and experimentation as critical facets of creative problem solving, and on computation as both an interdisciplinary and cross-disciplinary practice.
Prerequisite: Graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EMAT 60999 CAPSTONE PROJECT IN EMERGING MEDIA AND TECHNOLOGY 3 Credit Hours
(Repeatable for credit) Provides an integrative experience, bringing together components of the required coursework in the major and concentration. Students perform individual work on a project, research paper, or practicum under the supervision of faculty from programs affiliated with the School of Emerging Media and Technology. Students must be in their final semester in the master’s program to enroll in this course.
Prerequisite: Minimum overall GPA of 3.00; and graduate standing; and special approval.
Schedule Type: Project or Capstone
Contact Hours: 3 other
Grade Mode: Standard Letter

EMAT 61010 ENTERPRISE ARCHITECTURE 3 Credit Hours
Explores the alignment of IT and IS investment decisions with business goals. Enterprise architecture is increasingly used in industry as a result of the continued emergence of new technologies and ongoing pressures to reengineer business processes to achieve improved efficiency and greater customer focus. Enterprise architecture identifies the main components of an organization and the ways in which these components work together. The components include performance and strategy, people, business capabilities, applications, technology, knowledge and information, as well as financial and other resources.
Prerequisite: Graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EMAT 61310 ENTERPRISE ARCHITECTURE ENTERPRISE ARCHITECTURE CENTER OF EXCELLENCE METHODOLOGY 2 Credit Hours
Provides an introduction to the Enterprise Architecture Center of Excellence (EACOE) methodology for enterprise architecture and practical experience using that methodology. Students learn to model a business' current or desired future state using architectural models of goals, processes, materials, roles, locations and events. Implementation models are then developed to show relationships between architectural models, and the models are analyzed to identify move-ahead initiatives that include projects, gaps, overlaps and opportunities. These initiatives are prioritized to move the business to a desired future state. At the conclusion of the course, students have the option of submitting their course enterprise architecture artifacts to EACOE for certification. Pre/
Prerequisite: Graduate standing.
Corequisite: EMAT 61010.
Schedule Type: Lecture
Contact Hours: 2 lecture
Grade Mode: Standard Letter
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
<th>Prerequisite</th>
<th>Grade Mode</th>
<th>Contact Hours</th>
<th>Schedule Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMAT 61510</td>
<td>PROJECT MANAGEMENT LEADERSHIP</td>
<td>3</td>
<td>This course introduces advanced project management and project management leadership as it relates to software development and the corporate environment. The course focuses on the project management principles of effective planning, communication and motivation throughout the project lifecycle, and one key project management deliverable such as the project management plan. Although not formally endorsed by The Project Management Institute (<a href="http://www.PMI.org">www.PMI.org</a>), the course will align with the project management lifecycle approach endorsed in The Project Management Book of Knowledge.</td>
<td>EMAT 51510; and graduate standing.</td>
<td>Standard Letter</td>
<td>3 lecture</td>
<td>Lecture</td>
</tr>
<tr>
<td>EMAT 62010</td>
<td>BUSINESS ARCHITECTURE</td>
<td>3</td>
<td>Exploration of the concept of business architecture as the critical component of enterprise architecture. Students learn how to develop an enterprise business architecture, to apply business architecture principles, methods and artifacts to support business IT alignment and to support change management needed to implement roadmaps and initiatives based on the business architecture. Students learn how different enterprise architecture frameworks approach the business layer.</td>
<td>EMAT 61010; and graduate standing.</td>
<td>Standard Letter</td>
<td>3 lecture</td>
<td>Lecture</td>
</tr>
<tr>
<td>EMAT 62100</td>
<td>INTERACTIVE DATA</td>
<td>3</td>
<td>Course applies students' prior experience in computational thinking and object-oriented programming to analytic, creative and interactive data experiences built in Python and R. Students address real-world data sets with computational, predictive and visual methods to draw insights and make decisions. Students move beyond deploying &quot;solutions&quot; to engaging and communicating data to constituents, user, and decision makers alike. Concurrently, students discuss critical questions of modern data access, power, bias and privacy.</td>
<td>EMAT 60310; and graduate standing.</td>
<td>Standard Letter</td>
<td>3 lecture</td>
<td>Lecture</td>
</tr>
<tr>
<td>EMAT 62210</td>
<td>WEB DEVELOPMENT</td>
<td>3</td>
<td>Beginning with basic coverage of HTML, CSS, PHP; this course continues to explore those topics along with MySQL, jQuery, JavaScript and others. The course will also explore other topics relevant to web development in digital sciences, including security principles, hierarchy and visual design, responsive design, accessibility issues, interaction design, social media, and legal issues.</td>
<td>CS 61002 or CS 61003 or ENGR 56330; and graduate standing.</td>
<td>Standard Letter</td>
<td>3 lecture</td>
<td>Lecture</td>
</tr>
<tr>
<td>EMAT 64010</td>
<td>DATA ARCHITECTURE</td>
<td>3</td>
<td>Exploration of data modeling at the conceptual and logical level of abstraction within the context of enterprise architecture. Students learn to identify business needs in terms of data to gain a holistic view of organizational data. Students use Master Data Management (MDM) and approaches to define various data sources.</td>
<td>EMAT 61010; and graduate standing.</td>
<td>Standard Letter</td>
<td>3 lecture</td>
<td>Lecture</td>
</tr>
<tr>
<td>EMAT 64210</td>
<td>DATA SCIENCE</td>
<td>3</td>
<td>Overview of the concept of data mining, machine learning, big data, and data analytics, including the business challenges of working with data to solve real-world business problems. Students become familiar with the Cross Industry Standard Process for Data Mining (CRISP-DM). Fundamental concepts include Business Problem Understanding, Data Understanding, Data Preparation, Modeling, Evaluation, and Deployment. Data analytics in industry verticals are discussed, including science, intelligence and law enforcement, health, retail and financial services.</td>
<td>EMAT 61010; and graduate standing.</td>
<td>Standard Letter</td>
<td>3 lecture</td>
<td>Lecture</td>
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<tr>
<td>EMAT 65010</td>
<td>APPLICATION AND TECHNOLOGY ARCHITECTURE</td>
<td>3</td>
<td>Introduction to the concept of application and technology architectures in the context of enterprise architecture. Students learn how to define application and technology architecture principles and standards to support business performance, and to evaluate existing architectures in relation to performance goals. Students learn to work with application and technology artifacts and matrices, prepare a technology dictionary and develop an application architecture blueprint.</td>
<td>EMAT 61010; and graduate standing.</td>
<td>Standard Letter</td>
<td>3 lecture</td>
<td>Lecture</td>
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<tr>
<td>EMAT 69199</td>
<td>THESIS I</td>
<td>2-6</td>
<td>(Repeatable for a maximum of 6 credits hours) Thesis students must register for a total of 6 hours and may take 2 to 6 hours per semester distributed over several semesters if desired.</td>
<td>Graduate standing; and special approval.</td>
<td>Satisfactory/Unsatisfactory-IP</td>
<td>2-6 other</td>
<td>Masters Thesis</td>
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<tr>
<td>EMAT 69299</td>
<td>THESIS II</td>
<td>2</td>
<td>(Repeatable for credit) Thesis students must continue registration each semester until all degree requirements are met.</td>
<td>EMAT 69199; and graduate standing.</td>
<td>Satisfactory/Unsatisfactory-IP</td>
<td>2</td>
<td>Masters Thesis</td>
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</table>
EMAT 69992 INTERNSHIP IN EMERGING MEDIA AND TECHNOLOGY
1-3 Credit Hours
(Repeatable for credit) A credit bearing work experience with educational outcomes, utilizing and enhancing a student’s academic learning in practical occupational situations. The student is expected to complete pre-determined assignments, which may include a weekly journal, final paper or experience report.
Prerequisite: Graduate standing; and special approval.
Schedule Type: Practical Experience
Contact Hours: 3-9 other
Grade Mode: Satisfactory/Unsatisfactory-IP

EMAT 69995 SPECIAL TOPICS IN EMERGING MEDIA AND TECHNOLOGY 1-4 Credit Hours
(Repeatable for credit) Analysis of significant and current issues in digital sciences not covered in regular courses. Offered when opportunities and resources permit; the topic is announced when the course is scheduled.
Prerequisite: Graduate standing.
Schedule Type: Lecture
Contact Hours: 1-4 lecture
Grade Mode: Standard Letter

EMAT 69996 INDIVIDUAL INVESTIGATION IN EMERGING MEDIA AND TECHNOLOGY 1-3 Credit Hours
(Repeatable for credit) Independent study carried out by a student under the supervision of a faculty member. Subject content, objectives, assignments, and evaluation methods may vary.
Prerequisite: Graduate standing; and special approval.
Schedule Type: Individual Investigation
Contact Hours: 1-3 other
Grade Mode: Standard Letter-IP

EMAT 80310 CREATIVE CODING FUNDAMENTALS 3 Credit Hours
(Slashed with EMAT 60310) Course provides students hands-on experience, from applying foundational concepts in computational thinking and object-oriented programming to creating screen-based applications that move, interact and unfold over time. Specific topics covered include variables, loops, functions, classes and API’s (Application Programming Interfaces). Particular emphasis is placed on play and experimentation as critical facets of creative problem solving, and on computation as both an interdisciplinary and cross-disciplinary practice.
Prerequisite: Doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EMAT 82110 INTERACTIVE DATA 3 Credit Hours
(Slashed with EMAT 62110) Course applies students’ prior experience in computational thinking and object-oriented programming to analytic, creative and interactive data experiences built in Python and R. Students address real-world data sets with computational, predictive and visual methods to draw insights and make decisions. Students move beyond deploying “solutions” to engaging and communicating data to constituents, user and decision makers alike. Concurrently, students discuss critical questions of modern data access, power, bias and privacy.
Prerequisite: EMAT 80310; and doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter