DIGITAL SCIENCES - M.D.S.

College of Communication and Information
School of Emerging Media and Technology
334 Franklin Hall
Kent Campus
330-672-9105
emat@kent.edu
www.kent.edu/emat

Description
Admission to the Master of Digital Sciences degree in Digital Sciences has been temporarily suspended as of spring 2021.

The Master of Digital Sciences degree in Digital Sciences is designed to augment a student’s skill set, opening the door to new career opportunities for students from diverse undergraduate backgrounds. Due to the program’s interdisciplinary nature, students have a unique opportunity to gain a graduate-level introduction to several areas aligned with digital sciences.

The Digital Sciences major comprises the following concentrations:

- The Data Science concentration focuses on the data analysis and modeling needed by an organization and the processing of structured, semi-structured and unstructured data using statistical and semantic analysis techniques to meet those needs.
- The Digital Systems Management concentration focuses on the technical leadership needed by an organization and the management of information services in a rapidly changing global economy.
- The Digital Systems Software Development concentration focuses on the software applications needed by an organization and the design and maintenance of software systems that are aligned with the goals of the business.
- The Digital Systems Telecommunication Networks concentration focuses on the communication infrastructure needed by an organization and the design and management of a telecommunication system and computer network to meet those needs.
- The Digital Systems Training Technology concentration focuses on the educational applications needed by an organization and the design and management of instructional systems to meet those needs.
- The Enterprise Architecture concentration focuses on the business goals, processes and technology infrastructure needed by an organization and the alignment of the processes and infrastructure with the goals of the business.

Admission Requirements
- Bachelor’s degree from an accredited college or university for unconditional admission
- Minimum 3.000 undergraduate GPA on a 4.000 point scale\(^1\) for unconditional admission
- Official transcript(s)
- GRE scores\(^2\)
- Résumé
- Goal statement\(^3\)
- Three letters of recommendation
- English language proficiency - all international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning one of the following:
  - Minimum 550 TOEFL PBT score (paper-based version)
  - Minimum 79 TOEFL IBT score (Internet-based version)
  - Minimum 77 MELAB score
  - Minimum 6.5 IELTS score
  - Minimum 58 PTE score
  - Minimum 110 Duolingo English Test score
- Three letters of recommendation
- GRE scores will be one of the factors considered in the admission process. A GRE composite score of 290 and above is preferred. The GRE may be waived if the applicant has earned a master’s or higher degrees from an accredited U.S. institution or has three or more years of relevant, full-time work experience.
- The goal statement should explain applicants’ goals and objectives for pursuing this advanced degree. For example, applicants may want to better prepare for a particular career, to update knowledge in a specific area or to add expertise that will make them more valuable in a current career. In addition, applicants may submit a statement of plans for electives, which should explain how they plan to choose the digital sciences-related electives to complement their declared concentration and their undergraduate major. Applicants should explain how the electives will help to meet the goals and objectives listed in the goal statement.

Fully Offered At:
- Online (Data Science, Digital Systems Training Technology, Enterprise Architecture concentrations only)
- Kent Campus

Program Learning Outcomes
Graduates of this program will be able to:

1. Augment their professional preparation with material from areas of digital sciences outside their former college and professional boundaries.
2. Demonstrate increased breadth in digital sciences outside their former college and professional boundaries.
3. Demonstrate basic familiarity with enterprise architecture, data science, software development, telecommunication networks, globalization and technology strategy and/or instructional design.
4. Demonstrate increased depth in one area of digital sciences.

Program Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 61002</td>
<td>ALGORITHMS AND PROGRAMMING I</td>
<td>3</td>
</tr>
<tr>
<td>EMAT 61010</td>
<td>ENTERPRISE ARCHITECTURE</td>
<td>3</td>
</tr>
</tbody>
</table>

\(^1\) Applicants with a lower GPA will be considered for conditional admission.

\(^2\) GRE scores will be one of the factors considered in the admission process. A GRE composite score of 290 and above is preferred. The GRE may be waived if the applicant has earned a master’s or higher degrees from an accredited U.S. institution or has three or more years of relevant, full-time work experience.

\(^3\) The goal statement should explain applicants’ goals and objectives for pursuing this advanced degree. For example, applicants may want to better prepare for a particular career, to update knowledge in a specific area or to add expertise that will make them more valuable in a current career. In addition, applicants may submit a statement of plans for electives, which should explain how they plan to choose the digital sciences-related electives to complement their declared concentration and their undergraduate major. Applicants should explain how the electives will help to meet the goals and objectives listed in the goal statement.
Culminating Requirement, choose from the following: 1  6

- EMAT 60999: CAPSTONE PROJECT IN EMERGING MEDIA AND TECHNOLOGY
- EMAT 69199: THESIS I

Approved Electives, choose from the following: 2  6-8

- COMM 65661: COMMUNICATION IN AN INFORMATION SOCIETY
- COMM 65675: COMMUNICATION, UNCERTAINTY AND PRIVACY MANAGEMENT
- COMM 65685: COMMUNICATION AND COGNITION
- CS 53203: SYSTEMS PROGRAMMING
- CS 53401: SECURE PROGRAMMING
- CS 56101: DESIGN AND ANALYSIS OF ALGORITHMS
- CS 57205: INFORMATION SECURITY
- CS 57221: INTRODUCTION TO CRYPTOLOGY
- CS 61002: ALGORITHMS AND PROGRAMMING I
- CS 61003: ALGORITHMS AND PROGRAMMING II
- CS 63005: ADVANCED DATABASE SYSTEMS DESIGN
- CS 63201: ADVANCED OPERATING SYSTEMS
- CS 63301: PARALLEL AND DISTRIBUTED COMPUTING
- CS 63304: CLUSTER COMPUTING
- CS 63901: SOFTWARE ENGINEERING METHODOLOGIES
- CS 64201: ADVANCED ARTIFICIAL INTELLIGENCE
- CS 64401: IMAGE PROCESSING
- CS 67101: ADVANCED COMPUTER GRAPHICS
- CS 67301: SCIENTIFIC VISUALIZATION
- EMAT 51510: PROJECT MANAGEMENT AND TEAM DYNAMICS
- EMAT 51610: DIGITAL SYSTEMS SECURITY
- EMAT 59995: SPECIAL TOPICS IN EMERGING MEDIA AND TECHNOLOGIES
- EMAT 60999: CAPSTONE PROJECT IN EMERGING MEDIA AND TECHNOLOGY
- EMAT 61010: ENTERPRISE ARCHITECTURE
- EMAT 61310: ENTERPRISE ARCHITECTURE: ENTERPRISE ARCHITECTURE CENTER OF EXCELLENCE METHODOLOGY
- EMAT 61510: PROJECT MANAGEMENT LEADERSHIP
- EMAT 62010: BUSINESS ARCHITECTURE
- EMAT 62210: WEB DEVELOPMENT
- EMAT 64010: DATA ARCHITECTURE
- EMAT 64210: DATA SCIENCE
- EMAT 65010: APPLICATION AND TECHNOLOGY ARCHITECTURE
- EMAT 69992: INTERNSHIP IN EMERGING MEDIA AND TECHNOLOGY
- EMAT 69995: SPECIAL TOPICS IN EMERGING MEDIA AND TECHNOLOGY
- EMAT 69996: INDIVIDUAL INVESTIGATION IN EMERGING MEDIA AND TECHNOLOGY
- EVAL 65510: STATISTICS I FOR EDUCATIONAL SERVICES
- GEOG 59070: GEOGRAPHIC INFORMATION SCIENCE
- GEOG 59076: SPATIAL PROGRAMMING
- GEOG 59080: ADVANCED GEOGRAPHIC INFORMATION SCIENCE
- GEOG 59085: WEB AND MOBILE GEOGRAPHIC INFORMATION SCIENCE
- GEOG 59162: CARTOGRAPHY
- GEOD 69007: SPATIOTEMPORAL ANALYTICS
- GEOD 69082: CYBERGIS
- GEOD 69083: GEODATABASES
- HI 60401: HEALTH INFORMATICS MANAGEMENT
- HI 60402: LEGAL ISSUES IN HEALTH INFORMATICS
- HI 60403: HEALTH INFORMATION SYSTEMS
- HI 60410: HEALTH RECORDS MANAGEMENT
- HI 60411: CLINICAL ANALYICS
- HI 60412: CLINICAL DECISION SUPPORT
- ENGR 53222: COMPUTER HARDWARE ENGINEERING AND ARCHITECTURE
- ENGR 56330: VISUAL BASIC PROGRAMMING IN ENGINEERING TECHNOLOGY
- ENGR 56350: NETWORK MANAGEMENT AND DESIGN TECHNOLOGY
- ENGR 56411: REQUIREMENTS ENGINEERING AND ANALYSIS TECHNOLOGY
- ENGR 63010: COMPUTER HARDWARE
- ENGR 63020: FIBER OPTIC SYSTEMS
- ENGR 63031: PROGRAMMABLE LOGIC CONTROLLERS
- ENGR 63032: ADVANCED PROGRAMMABLE LOGIC CONTROLLERS
- ENGR 63050: TRIZ: THEORY OF INVENTIVE PROBLEM-SOLVING
- ENGR 64312: ADVANCED WIRELESS TELECOMMUNICATION SYSTEM AND NETWORK TECHNOLOGIES
- ENGR 65330: ADVANCED VISUAL BASIC PROGRAMMING IN ENGINEERING TECHNOLOGY
- ENGR 66380: ADVANCED NETWORKING
- ETEC 57427: TECHNOLOGY AND LEARNING
- ETEC 57430: INSTRUCTIONAL DESIGN
- ETEC 67410: SIMULATIONS AND GAMES IN EDUCATION
- ETEC 67425: MANAGING TECHNOLOGICAL CHANGE
- ETEC 67432: DESIGNING MULTIMEDIA FOR EDUCATION
- ETEC 67435: VIRTUAL AND AUGMENTED REALITY
- ETEC 67442: DESIGNING ONLINE AND BLENDED COURSES
- ETEC 67444: TEACHING ONLINE AND BLENDED COURSES
- ETEC 67449: RESEARCH IN ONLINE AND BLENDED LEARNING
- KM 60301: FOUNDATIONAL PRINCIPLES OF KNOWLEDGE MANAGEMENT
- KM 60305: COMMUNITIES OF PRACTICE
- KM 60311: BUSINESS PROCESS MANAGEMENT
- KM 60312: BUSINESS INTELLIGENCE-COMPETITIVE INTELLIGENCE
- KM 60315: FOUNDATIONS OF DOCUMENT MANAGEMENT
- KM 60316: ORGANIZATIONAL CULTURE ASSESSMENT
Concentration Requirements

Choose from the following:

Data Science
Digital Systems Management
Digital Systems Software Development
Digital Systems Telecommunication Networks
Digital Systems Training Technology
Enterprise Architecture

Minimum Total Credit Hours: 32

1. Whether selecting the capstone project or thesis, students must complete minimum 6 credit hours. Students selecting the capstone project must select additional Digital Sciences electives to fulfill the 6 credit hours.

2. Requests for consideration of other courses as approved electives should be submitted to the student's advisor in the School of Digital Sciences.

3. This course is recommended only for students from a computer science background.

4. No more than 3 credit hours of EMAT 69992 may be applied toward approved electives in the M.D.S. degree.

Data Science Concentration Requirements

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credit Hours</th>
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<tbody>
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<td>EMAT 64010</td>
<td>DATA ARCHITECTURE</td>
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Digital Sciences - M.D.S.
## Digital Systems Training Technology Concentration

### Requirements

<table>
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<th>Code</th>
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<th>Credit Hours</th>
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<tr>
<td></td>
<td><strong>Concentration Requirements</strong></td>
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<tr>
<td>ETEC 67410</td>
<td>SIMULATIONS AND GAMES IN EDUCATION</td>
<td>3</td>
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<tr>
<td>or ETEC 67435</td>
<td>VIRTUAL AND AUGMENTED REALITY</td>
<td></td>
</tr>
<tr>
<td>ETEC 67425</td>
<td>MANAGING TECHNOLOGICAL CHANGE</td>
<td>3</td>
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<td>ETEC 67432</td>
<td>DESIGNING MULTIMEDIA FOR EDUCATION</td>
<td>3</td>
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<td><strong>Minimum Total Credit Hours:</strong></td>
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## Enterprise Architecture Concentration Requirements

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<td><strong>Concentration Requirements</strong></td>
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<td>EMAT 62010</td>
<td>BUSINESS ARCHITECTURE</td>
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<td>EMAT 64010</td>
<td>DATA ARCHITECTURE</td>
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<tr>
<td>EMAT 65010</td>
<td>APPLICATION AND TECHNOLOGY ARCHITECTURE</td>
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<tr>
<td></td>
<td><strong>Minimum Total Credit Hours:</strong></td>
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## Graduation Requirements

No more than 18 credits may be taken from any one subject area other than Digital Sciences to apply toward the M.D.S. degree.