INFORMATICS AND ENGINEERING SYSTEMS

The Department of Informatics and Engineering Systems offers the Bachelor of Arts degree in Information Management and Systems; Information Management and Systems in Health Information Management (CAHIIM accredited); and Health Informatics. The Department also offers the Bachelor of Science in Engineering Technology Management and the Bachelor of Applied Science in Advanced Manufacturing Management. A minor is offered in Information Management and Systems and in Health Informatics.

Bachelors

- Advanced Manufacturing Management, Bachelor of Applied Science (https://academic-catalog.uscupstate.edu/cst/ies/advanced-manufacturing-management-bas/)
- Engineering Technology Management, Bachelor of Science (https://academic-catalog.uscupstate.edu/cst/ies/engineering-technology-management-bs/)
- Health Informatics, Bachelor of Arts (https://academic-catalog.uscupstate.edu/cst/ies/health-informatics-ba/)
- Health Information Management, Bachelor of Science (https://academic-catalog.uscupstate.edu/cst/ies/health-information-management-bs/)
- Industrial Engineering, Bachelor of Science (https://academic-catalog.uscupstate.edu/cst/ies/industrial-engineering-bs/)
- Information Technology Accredited Concentration in Health Information Management, Bachelor of Arts (https://academic-catalog.uscupstate.edu/cst/ies/information-technology-accredited-concentration-health-information-management-ba/)
- Information Technology, Bachelor of Arts (https://academic-catalog.uscupstate.edu/cst/ies/information-technology-ba/)

Minors

- Health Informatics, Minor (https://academic-catalog.uscupstate.edu/cst/ies/health-informatics-minor/)
- Information Management and Systems, Minor (https://academic-catalog.uscupstate.edu/cst/ies/information-management-systems-minor/)

Certificate

- Artificial Intelligence, Certificate (https://academic-catalog.uscupstate.edu/cst/ies/artificial-intelligence-certificate/)

Adebiaye, Richmond, Assoc Professor

Breaux, Deshia, Director of Graduate Studies, Professor

Egbue, Ona, Professor

Ellis, Tim, Director of Process Improvement, Senior Instructor

Fulbright, Ron, Chair, Dept. of Informatics and Engineering Systems, Coordinator of Graduate Programs, Professor

Katina, Polinpapilinho, Assoc Professor

Richardson, Susan, Program Director, Informatics Palmetto College Initiative, Senior Instructor

Rouse, Donald, Director, HIMS, Senior Instructor

Toland, Tyrone, Professor

Walters, Grover, Asst Professor

Advanced Manufacturing Management

AMMG U300 Manufacturing Leadership I 3 Credit Hours
Manufacturing leadership including business communication, business presentations, spreadsheet basics, financial reports, supervisory skills, and leadership roles.
Prerequisite(s): Junior Standing or consent of instructor.

AMMG U330 Manufacturing Work Practices 3 Credit Hours
Manufacturing work practices including safety topics, lean manufacturing, training, and operational efficiency.
Prerequisite(s): Junior Standing or consent of instructor.
Pre/Corequisite(s): MATH U121 or MATH U126 or MATH U127.

AMMG U395 Internship 1-3 Credit Hours
Supervised practical experience related to the Advanced Manufacturing Management field in an elected setting planned in conjunction with the relevant AMM faculty.
Prerequisite(s): Junior standing and consent of instructor.

AMMG U398 Special Topics 3 Credit Hours
Selected topics in Advanced Manufacturing Management. Topics vary depending on faculty expertise. This course may be repeated for credit if the topic is different.
Prerequisite(s): Junior standing or consent of instructor.

AMMG U399 Independent Study 1-3 Credit Hours
A planned individual study program in conjunction with an Advanced Manufacturing Management faculty member. Course may be repeated for a total of no more than three hours of undergraduate credit.
Prerequisite(s): Consent of instructor.

AMMG U410 Manufacturing Leadership II 3 Credit Hours
Manufacturing leadership including budgeting, project selection, supervision, and leadership roles.
Prerequisite(s): AMMG U300 or consent of instructor.

AMMG U415 Manufacturing Quality 3 Credit Hours
Manufacturing quality practices including statistical process control, quality management systems, and problem solving methodology.
Prerequisites: MATH U102 and Junior Standing or consent of instructor.
Pre/Corequisite(s): MATH U121.

AMMG U420 Manufacturing Project Management 3 Credit Hours
Tools and techniques for planning, and scheduling manufacturing projects.
Prerequisite(s): Junior standing or consent of instructor.

AMMG U450 Operational Excellence 3 Credit Hours
Tools and techniques for creating operational excellence. Topics include value stream mapping, process flow improvement, supply chain management, and the culture of operational excellence. Prerequisites: Junior Standing or consent of instructor.
Pre/Corequisite(s): MATH U121.

AMMG U500 Senior Seminar 3 Credit Hours
Manufacturing management concepts including an exploration of manufacturing's effect on the local community and global society.
Prerequisite(s): Completion of at least five of the six required AMMG courses or consent of instructor.

Advanced Mechatronics

AMEC U350 Advanced Problem Solving 3 Credit Hours
Theories and practical methods for solving complex equipment problems in manufacturing. Topics include system flow, machine state and logic, root cause analysis and communication of results. Work at a manufacturing location may be required. Two class and three laboratory hours per week.
Prerequisite(s): AAS degree in Mechatronics, Industrial Electronics, Automated Manufacturing or Engineering Technology degree or consent of department chair.

AMEC U360 Industrial Digital Communications 3 Credit Hours
Industrial machine communication protocols and devices. Topics include digital communication methods, implementations and applications of industrial communication, and digital data collection. Two class and three laboratory hours per week.
Prerequisite(s): AAS degree in Mechatronics, Industrial Electronics, or Engineering Technology degree or consent of instructor.

AMEC U370 Advanced Maintenance 3 Credit Hours
Methods, tools, and strategies for the maintenance of advanced manufacturing equipment. Topics include methods such as preventive and predictive maintenance, tools such as vibration analysis and strategies such as Total Productive Maintenance. Two class and three laboratory hours per week.
Prerequisite(s): AAS degree in Mechatronics, Industrial Electronics, or Engineering Technology degree or consent of instructor.

Engineering Technology Management

ETMG U300 Foundations of Engineering and Technology Management (4) 4 Credit Hours
Principles, methodologies, and practices that integrate engineering, technology, and management. The course will explore functions of engineering and technology management, decision-making, economic and financial analysis, and the application of systems engineering principles. Emphasis on analytical, problem-solving, and decision-making skills relevant to engineering management practice. Three class and three laboratory hours per week. Prerequisites: MATH U126 or MATH U127 or consent of instructor. Corequisites: ETMG U300L.

ETMG U300L Foundations of Engineering and Technology Management - Lab 0 Credit Hours
Principles, methodologies, and practices that integrate engineering, technology, and management. The course will explore functions of engineering and technology management, decision-making, economic and financial analysis, and the application of systems engineering principles. Emphasis on analytical, problem-solving, and decision-making skills relevant to engineering management practice. Three laboratory hours per week. Prerequisites: MATH U126 or MATH U127 or consent of instructor. Corequisites: ETMG U300.

ETMG U320 Engineering Economic Analysis 4 Credit Hours
Engineering economic and financial analysis of prospective alternatives to support decision-making. Lab includes analysis techniques, use of modeling tools, and applications of techniques to real-world problems. Three class and three laboratory hours per week.
Prerequisite(s): MATH U127 or MATH U141, and ETMG U300 or INDE U102, or consent of instructor.
Corequisite(s): ETMG U320L.

ETMG U320L Engineering Economic Analysis Lab 0 Credit Hours
Engineering economic and financial analysis of prospective alternatives to support decision-making. Lab includes analysis techniques, use of modeling tools, and applications of techniques to real-world problems. Three class and three laboratory hours per week.
Prerequisite(s): MATH U127 or MATH U141, and ETMG U300 or INDE U102, or consent of instructor.
Corequisite(s): ETMG U320.

ETMG U330 Engineering Work Analysis 4 Credit Hours
Techniques for operation analysis, work measurement, and work sampling. Major topics include human factors, work design principles, work environment, economic justification, work measurement and the design process. Predetermined basic motion-time systems and standard data development are introduced. Three class and three laboratory hours per week.
Prerequisite(s): MATH U127 or MATH U141 or consent of instructor.
Corequisite(s): ETMG U330L.

ETMG U330L Engineering Work Analysis Lab 0 Credit Hours
Techniques for operation analysis, work measurement, and work sampling. Major topics include human factors, work design principles, work environment, economic justification, work measurement and the design process. Predetermined basic motion-time systems and standard data development are introduced. Three class and three laboratory hours per week.
Prerequisite(s): MATH U127 or MATH U141 or consent of instructor.
Corequisite(s): ETMG U330.

ETMG U370 Systems Decision Making 4 Credit Hours
Systems analysis mathematical models, environmental factors, operations research methodologies, dynamic systems and the application of a variety of computer tools. Three class and three laboratory hours per week.
Prerequisite(s): ECON U291 and MATH U127 or MATH U141, or consent of instructor.
Corequisite(s): ETMG U370L.

ETMG U370L System Decision Making Lab 0 Credit Hours
Systems analysis mathematical models, environmental factors, operations research methodologies, dynamic systems and the application of a variety of computer tools. Three class and three laboratory hours per week.
Prerequisite(s): ECON U291 and MATH U127 or MATH U141, or consent of instructor.
Corequisite(s): ETMG U370.

ETMG U395 Internship 1-3 Credit Hours
Supervised practical experience related to the Engineering Technology Management field in an elected setting planned in conjunction with the relevant ETM faculty. Pass/Fail credit.
Prerequisite(s): Junior standing and consent of instructor.

ETMG U398 Special Topics 3 Credit Hours
Selected topics in Engineering Technology Management. Topics vary depending on faculty expertise. This course may be repeated for credit if the topic is different.
Prerequisite(s): Junior standing, or consent of instructor.

ETMG U399 Independent Study 1-3 Credit Hours
A planned individual research experience carried out in conjunction with an Engineering Technology Management faculty member. Course may be repeated for a total of no more than three hours of undergraduate credit.
Prerequisite(s): Consent of instructor.

ETMG U410 Engineering Teams Theory and Practice 4 Credit Hours
Methods of understanding, planning, and presenting information in oral and written formats while working in an engineering team setting. Three class and three laboratory hours per week.
Prerequisite(s): Junior standing or consent of Instructor.
Corequisite(s): ETMG U410L.

ETMG U410L Engineering Teams Theory and Practice Laboratory 0 Credit Hours
Methods of understanding, planning, and presenting information in oral and written formats while working in an engineering team setting. Three class and three laboratory hours per week.
Prerequisite(s): Junior standing or consent of Instructor.
Corequisite(s): ETMG U410.

ETMG U415 Quality Practices 4 Credit Hours
Practices for ensuring and improving product and service quality. Emphasis is placed on problem-solving processes and techniques used in quality control, process improvement, continuous improvement, and variability reduction. Three class and three laboratory hours per week.
Prerequisite(s): ECON U291 or MATH U102 or ENGR U230; or consent of instructor.
Corequisite(s): ETMG U415L.

ETMG U415L Quality Practices Lab 0 Credit Hours
Practices for ensuring and improving product and service quality. Emphasis is placed on problem-solving processes and techniques used in quality control, process improvement, continuous improvement, and variability reduction. Three class and three laboratory hours per week.
Prerequisite(s): ECON U291 or MATH U102 or ENGR U230; or consent of instructor.
Corequisite(s): ETMG U415.

ETMG U420 Engineering Project Management 4 Credit Hours
Planning, scheduling, control of engineering projects, and applications of project management tools. Three class and three laboratory hours per week.
Prerequisite(s): ETMG U320 and ETMG U330, or consent of instructor.
Corequisite(s): ETMG U420L.

ETMG U420L Engineering Project Management Laboratory 0 Credit Hours
Planning, scheduling, control of engineering projects, and applications of project management tools. Three class and three laboratory hours per week.
Prerequisite(s): ETMG U320 and ETMG U330, or consent of instructor.
Corequisite(s): ETMG U420.

ETMG U469 Exercise and Sports Nutrition 3 Credit Hours
Nutritional strategies for optimizing human performance. Topics include macronutrients, micronutrients, hydration, dietary supplements and ergogenic aids, body composition management, and nutrient metabolism.
Prerequisite(s): EXSC U459.

ETMG U499 Senior Seminar 3 Credit Hours
Integration of engineering technology management at an advanced level, the impact of engineers on society, and exploration of ethical issues. Written and oral presentation required.
Prerequisite(s): Completion six of the seven required ETMG courses or consent of instructor.

Health Care Information Management and Systems

HIMS U135 Pathophysiology and Pharmacology 3 Credit Hours
Disease etiology and organ system involvement, including physical signs and symptoms, prognoses, and common complications and their treatment. Topics include fundamental principles of disease and pharmacology. The course is restricted to Health Information Management (HIM) majors.

HIMS U141 Procedural Coding 3 Credit Hours
Current Procedural Terminology (CPT) coding, integrating HCPCS Level II, ICD-10-CM and PCS medical coding procedures at an advanced level. Emphasis is on the application and assignment of procedural codes by specialty and body systems. Subject matter includes common coding terminologies, nomenclatures and classification systems used in healthcare delivery, electronic health records, reporting and management, such as International Classification of Diseases (ICD), Healthcare Common Procedures Coding Systems (HCPCS), Current Procedural Terminology (CPT), Systematized Nomenclature of Medicine Clinical Terms (SNOMED), Procedure Coding System (PCS), and Diagnosis Related Groups (DRG) and Logical Observation Identifiers Names and Codes (LOINC).
Prerequisite(s): BIOL U128 and BIOL U129; or consent of instructor.

HIMS U201 Understanding Healthcare Organizations 3 Credit Hours
Introduction to origins and evolution of current healthcare delivery systems and organizational structures, healthcare terminology and language structures, common usage, acronyms, and basic uses of information in a variety of healthcare settings. Topics also include introduction to levels of information users and information needs within a variety of healthcare organizations.
Prerequisite(s): CSCI U138, or CSCI U150, or INFO U101, or consent of instructor.

HIMS U216 Diagnostic Coding 3 Credit Hours
Coding principles and practices on the International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM). Topics include historical development of the ICD classification system, coding of diagnosis records from a variety of medical specialties and use of official coding code lines.
Prerequisite(s): BIOL U128 and BIOL U129; or consent of instructor.

HIMS U250 Fundamentals of Healthcare Administration 3 Credit Hours
Management, communication, and problem-solving, as they relate to human resources, quality assurance, finance, budgeting and reimbursement in a healthcare setting.
Prerequisite(s): Sophomore standing or consent of instructor.

HIMS U301 Health Informatics and Information Systems Applications 3 Credit Hours
Introduction to healthcare information systems to include management and administration information systems, clinical information systems, business information systems, decision support, critical care applications, information systems in education, and emergent system applications. Particular emphasis is placed on automation required for the emerging "paperless" environment and computer-based records.
Prerequisite(s): HIMS U201 or consent of instructor.

HIMS U302 Healthcare Data Management and Information Governance 3 Credit Hours
Data, knowledge, and information structures, terminological control, index language functions, regulatory determinants of data collected/stored (ex. JCAHO/HIPPA, etc.), including study of language development in healthcare systems evolution.
Prerequisite(s): HIMS U301 or consent of instructor.

HIMS U410 Healthcare Quality Improvement 3 Credit Hours
Quality improvement strategies to improve efficiency and effectiveness in healthcare information systems and processes including Six Sigma, DMAIC, process maps, pareto charts, control charts, root cause analysis, and cause and effect diagrams. Quality improvement theoretical frameworks such as Donobedian's structure, process and outcome theory, and Chassin's overuse, misuse and underuse theories are applied. Quality improvement in the context of leadership, person-centered, family-centered care, cost, value, and improvement capability is demonstrated through the completion of the Institute of Healthcare Improvement's modules to earn a "Basic Certificate in Quality and Safety" micro-credential.
Prerequisite(s): HIMS U301 or consent of instructor.

HIMS U412 Legal Aspects of Health Information Management 3 Credit Hours
Selected ethical issues, confidentiality, preservation and conservation of sensitive data, data maintenance and integrity preservation.
Prerequisite(s): PHIL U211 or PHIL U311; and HIMS U302; or consent of instructor.

HIMS U413 Healthcare Technology and the Electronic Health Record 4 Credit Hours
Network configurations and functions including the latest developments and applications in electronic health records (EHR) and the implementation of the EHR in the healthcare industry.
Prerequisite(s): HIMS U302 or consent of instructor.

HIMS U417 Information Privacy and Security 3 Credit Hours
Issues in information management as they relate to the International Information Systems Security Certification Consortium's 10 security domains. The role of the security domains in the context of design, implementation, and maintenance of systems to include the legal and ethical aspects of privacy and security. Case studies covering these roles are included.
Prerequisite(s): Consent of instructor.

HIMS U425 Public Policy Trends in Health Informatics 3 Credit Hours
Current and future trends in health information systems (HIS) and health information technology (HIT) and their impact on public policy, career success in HIS management, health informatics, data analytics, public policy and public health research.
Prerequisite(s): HIMS U302 or consent of instructor.

HIMS U426 Healthcare Finance 3 Credit Hours
Fundamentals of financial management and accounting concepts in the healthcare environment with specific application to the health informatics or health information management professional's everyday roles and responsibilities. Topics include revenue management, cost management, variance management, and contracting.
Prerequisite(s): HIMS U201 and HIMS U302; or consent of instructor.

HIMS U496 Special Topics 3 Credit Hours
Study reflective of current issues/topics related to the field of healthcare information management. Topics might include (but are not limited to) emergent technology in healthcare settings such as user interface design, expert system evolution, virtual environments, soft computing/fuzzy logic applications, artificial intelligence. Topics chosen for study in a given semester will be determined by the state of the science at the time of the offering.
Prerequisite(s): Completion of 12 hours HIMS courses.

HIMS U498 Practicum in Healthcare Information Management 3 Credit Hours
Supervised professional practice involving information management in a healthcare organization.
Prerequisite(s): Senior standing in the accredited health information management application area.

HIMS U499 Senior Seminar in Healthcare Information Management 3 Credit Hours
Capstone experience integrating knowledge of health information systems, health information management, and health informatics (the combination of health and information technology) and investing current innovations in these technologies in a healthcare setting with emphasis on research, written, and oral presentations.
Prerequisite(s): Senior standing in Health Informatics or consent of instructor.

Information Management and Systems

INFO U101 Survey of Information Technology 3 Credit Hours
Use of information technology to collect, analyze, and transform data into knowledge using desktop software and commonly available Internet-based resources and the evaluation of information sources for accuracy, suitability, safety, security, societal and ethical issues.

INFO U102 Introduction to Digital Safety 3 Credit Hours
Approaches to identifying exposure threats against personal information as a means to establishing end-user best practices. Topics include digital reliance impact on culture, system exploitation at the hardware, operational, and application level; ethical concerns related to hacking and application use.

INFO U139 Introduction to Object-Oriented Applications 3 Credit Hours
Object-oriented problem-solving tools, techniques, and solution structures for desktop-oriented, user-layer environments, a survey of third-generation programming languages (3GL), introduction to the object-oriented paradigm.

INFO U201 Concepts of Information Management and Systems 3 Credit Hours
Theoretical foundations of organization of information; cognitive structures and processing of data, information, knowledge, and understanding information uses and users. The integrated and interdisciplinary nature of information science and computer science is introduced and developed through case studies and examples from concentration disciplines: business, education, communication, and healthcare settings.

INFO U211 Microcomputer Organization 3 Credit Hours
Introduction to the major features of operating system software, the primary functions of CPU's, bus architectures, secondary storage devices, peripheral devices, hardware and software configuration. The goal is the assembly and disassembly of microcomputer systems and installation of operating systems, network operating systems, and applications software.

INFO U303 Organizational Informatics and IT Platforms 3 Credit Hours
Needs, uses and consequences of information in organizational contexts, information technology platforms, architectures and infrastructures, functional areas and processes, information-based products and services, the use of and redefining role of information technology, sociotechnical structures, and the rise and transformation of information-based industries.

INFO U305 Social Informatics 3 Credit Hours
Needs, uses and consequences of information in organizational contexts, information technology platforms, architectures and infrastructures, functional areas and processes, information-based products and services, the use of and redefining role of information technology, sociotechnical structures, and the rise and transformation of information-based industries.

INFO U307 Systematic Innovation 3 Credit Hours
Methodologies, tools, skills, and knowledgebase supporting a repeatable, structured, and disciplined approach to innovative problem solving, brainstorming, and alternative thinking included, but not limited to: useful/harmful feature analysis, problem formulator diagramming, selection and application of innovation operators, and the innovation situation questionnaire.

INFO U315 Networking Technology 3 Credit Hours
Basic concepts of computer networks, data telecommunication and distributed applications, including network topology, hardware, software protocol, security, and the implications of network technologies on the deployment and implementation of networked systems.

INFO U325 Fundamentals of Relational Database Management Systems 3 Credit Hours
Basic architecture, structures, and query languages. Topics include design and implementation of RDBMS, relational data models, conceptual modeling, data independence, specification of data requirements, normalization, recovery and security.

INFO U345 Technical Presentation and Communication 3 Credit Hours
The art of effective creation of formal oral and written communications in a professional environment using modern technology to assist in writing and presentation. Covered topics include using word processing software to ease the research process, evaluation of information sources, the proper use of visual aids such as PowerPoint, the creation of video presentations, effective speech writing, power-speaking methods and techniques, and methods of persuasive writing in the professional work.

INFO U346 Communication & New Technology 3 Credit Hours
Understanding the components of various technologies and their importance in information management and dissemination within and outside the organization.

INFO U347 Web Page Construction 3 Credit Hours
Design of user-layer Web pages using HTML, Java script, Flash, and Dreamweaver, featuring graphic preparation, layout and effective presentation of information.

INFO U399 Independent Study Informatics 1-6 Credit Hours
Directed and self-guided research into topics of interest in the field of informatics. May be repeated for a maximum of 6 credit hours.
Prerequisite(s): Consent of instructor.

INFO U415 E-Commerce & the Internet 3 Credit Hours
Coordination and cultural challenges, value creation opportunities, and information management issues associated with various forms of electronic commerce including electronic data interchange, the World Wide Web, and the Internet in today's global economy.
Prerequisite(s): 60 credit hours earned or consent of the instructor.

INFO U417 Information Privacy and Security 3 Credit Hours
Issues information management as they relate to the International Information Systems Security Certification Consortium's 10 security domains. The role of the security domains in the context of design, implementation, and maintenance of systems to include the legal and ethical aspects of privacy and security. Case studies covering these roles are included.
Prerequisite(s): 60 credit hours earned or consent of the instructor.

INFO U421 Data Warehousing and Decision Support Systems Technology 3 Credit Hours
Data warehousing, online analytical processing, and decision support systems. Topics include design and architectural issues, cost effectiveness, management concerns, data integrity, deployment, and maintenance issues.
Prerequisite(s): INFO U325 or consent of instructor.

INFO U422 Knowledge-Based Systems 3 Credit Hours
Knowledge representation, intelligent decision systems, principals of rule-based systems, action rules, interestingness measures, distributed query answering. Select study of actual systems and applications in specific domains such as: medicine, business, communications, and education.
Prerequisite(s): 60 credit hours earned or consent of the instructor.

INFO U423 Human-Machine Interaction 3 Credit Hours
Concepts of interaction and how people acquire, store and use data including interface analysis and creation, human factors in perception, pattern recognition, speech recognition, attention, memory and expectation.
Prerequisite(s): 60 credit hours earned or consent of the instructor.

INFO U424 Big Data 3 Credit Hours
Infrastructure, management, analysis, applications, visualization, architectures, security, and privacy issues of large-volume, rapidly-changing, uncertain, unstructured data sources.
Prerequisite(s): 60 credit hours earned or consent of the instructor.

INFO U425 Cloud Management 3 Credit Hours
Fundamentals, management issues, and architectures of cloud-based implementations, concepts, models, enabling technologies, security, and cloud infrastructure.
Prerequisite(s): 60 Credit hours earned or consent of the instructor.

INFO U427 Cybersecurity Technology 3 Credit Hours
Network and security foundation, data recovery techniques, network vulnerability assessments and technologies, cyber intelligence and internet governance, anticipating attacks, using monitoring tools, and developing defensive strategies.
Prerequisite(s): 60 Credit hours earned or consent of the instructor.

INFO U431 AI Prompt Engineering 3 Credit Hours
Principles and practices of designing and refining prompts to effectively interact with artificial intelligence (AI) models including crafting prompts, understanding AI behavior, and improving AI responses. Practical experience is gained through hands-on projects and real-world applications.
Prerequisite(s): 50 credit hours earned or consent of instructor.
Typically Offered: Upstate Fall Offering, Upstate Spring Offering, Upstate Summer Offering

INFO U435 Using AI Agents 3 Credit Hours
Theories, models, and methodologies underlying expertise and artificial intelligence (AI) focusing on the application of AI tools and techniques in designing, implementing, and evaluating systems able to enhance human performance to expert levels or beyond in various domains. Topics include the social, cultural, ethical, and commercial impacts of the democratization of expertise.
Prerequisite(s): 50 credit hours earned or consent of instructor.
Typically Offered: Upstate Fall Offering, Upstate Spring Offering, Upstate Summer Offering

INFO U440 Business Process Re-Engineering and Workflow 3 Credit Hours
Information technology and communication requirements of, and cultural or social issues pertaining to, the flow of work through distributed information management processes in business and other organizations. Students taking the health informatics minor focus on applications in healthcare settings.
Prerequisite(s): 60 credit hours earned or consent of the instructor.

INFO U441 IT Project Management 3 Credit Hours
Breakdown, estimation, leadership of a diverse team, and the use of tools to ensure the completion of deliverables within budget and on schedule. Students taking the health informatics minor focus on applications in the healthcare settings.
Prerequisite(s): 60 credit hours earned or consent of the instructor.

INFO U445 Computer Forensics 3 Credit Hours
Recovery and analysis of digital evidence, legal and technical issues, and the use of modern forensics tools and techniques. Real-world case studies regarding security and investigative forensics processes are used.
Prerequisite(s): 60 credit hours earned or consent of the instructor.

INFO U450 Executive IT Management 3 Credit Hours
Issues and challenges facing IT executives including IT alignment and governance, consensus, executive leadership, oversight, return-on-investment analysis, project management, and risk management. Students taking the health informatics minor focus on applications in the healthcare settings.
Prerequisite(s): 60 credit hours earned or consent of the instructor.

INFO U465 Artificial Intelligence Fundamentals 3 Credit Hours
Concepts, fundamentals, and historical evolution of artificial intelligence (AI) and cognitive system technologies including machine learning, conversational natural language interfaces, large language models, and generative pre-trained transformers (GPT).Topics include the social, cultural, ethical, and commercial impacts of advancements in AI.
Typically Offered: Upstate Fall Offering, Upstate Spring Offering, Upstate Summer Offering

INFO U496 Special Topics in Informatics 1-6 Credit Hours
Current trends, events, software, hardware, and issues in informatics, information technology, and information management. May be repeated for a maximum of 6 credit hours.
Prerequisite(s): Senior standing and consent of instructor.

INFO U498 Experiential Learning in Information Management and Systems 3 Credit Hours
The application of learning in a professional setting. To complement and strengthen the Information Management and Systems academic program, students will complete a planned program of observation, study, and work in selected organizations with information management and systems offices. Student will have an opportunity to apply and articulate what they have learned in the classroom. Pass/Fail credit.
Prerequisite(s): IMS major, senior standing and consent of instructor.

INFO U499 Senior Seminar in Information Management and Systems 3 Credit Hours
Integration of knowledge in information management and systems. Students will study and evaluate current innovations in technology and current applications of these systems. Case studies involving information systems technology will be used. Students will research and present new trends in technology. Students will experience an intensive and practice exercise in scholarship production. Class discussion will foster effective and creative implementation of research strategies, writing abilities, documentation procedures, portfolio development, and presentational skills.
Prerequisite(s): Senior standing or consent of instructor.