



## Bachelor of Science in Informatics IT

Would you like to learn more about the way information technology affects the business world? Or study new uses for IT in business, as well as how people and technology interact with one another in order to solve specific business-related issues? Are you interested in programming and database management? The Informatics IT degree program will further your understanding of the most relevant topics in this field, while preparing you to compete in the business arena. You'll be prepared for a position in a specialized area like systems analysis, business applications programming, business database design, and others.

**General Education Requirements – 60 credits**

**Common Body of Knowledge Requirements – 18 credits**

**Technology Core Requirements – 15 credits**

**Major Requirements - 33 credits**

**Credits Required for Degree: 126**

### Major Course Descriptions

#### IT 307 JAVA Programming\*

Java has rapidly become the language of choice for platform-independent, software intensive implementations. This course provides a general introduction to programming and object-oriented programming in particular. The syntax and semantics of the Java language are addressed, emphasizing its object-oriented programming concepts, terminology, and notation.

\*Prerequisite: IT 317

#### IT 407 Advanced JAVA Programming\*

Java is used as the programming language of choice for many web-enabled applications as well as many cross-platform distributed enterprise-level systems which are built using techniques and technologies from the J2EE architecture. This course introduces the student to software concepts that are prevalent in today's enterprise-level software systems, including: mobile applications, network applications, concurrent programming techniques, web-based technologies, component architectures, messaging systems, persistence, as well as web services architectures.

\*Prerequisite: IT 307

#### IT 421 Database Management\*

This course provides an overview of the concepts involved in the five structure models of database management: 1) simple, 2) hierarchical, 3) network, 4) relational, and 5) object-oriented databases.

\*Prerequisite: IT 316

#### IT 423 Software Engineering Methodologies\*

This course introduces students to salient features of software engineering such as the software product life cycle, process models, and the human factors associated with software technology. The analysis, synthesis, and implementation of these combined features determine the success or failure when building software intensive systems. The course will also introduce the student to modern approaches and techniques to software development and project management that utilize the Unified Modeling Language (UML).

\*Prerequisites: IT 307 and IT 316

#### IT 445 IT Security and Information Assurance\*

In today's complex world of information networks and integrated systems, computer information and physical security needs are becoming increasingly important for critical information and business systems. IT security and information assurance methodologies provide the necessary security services to protect these critical systems. This course introduces students to the concepts of information systems and network availability, integrity, and confidentiality. It teaches students the fundamentals of information, computer, network, and physical security as well as the legal, investigative, and ethical implications and requirements.

\*Prerequisite: IT 319

#### IT 450 Evaluation, Selection, and Implementation of Application Software\*

Selecting, acquiring, and implementing these new applications will require teamwork between the business functions and IT. This course focuses on the acquisition of pre-packaged software, beginning with the development of a joint RFP with the business unit, the evaluation/selection of potential vendors, evaluating proposals, negotiating contracts, and implementation of the software package.

\*Prerequisite: IT 316



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### **IT 460 Quality Assurance and Configuration Management\***

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This course focuses on techniques used to successfully test and implement information systems applications. The importance of the policies, procedures, and organization required to ensure that new software will be tested completely and put into production without causing server disruptions to the organization is stressed. Topics addressed include the design of a comprehensive test plan, determining critical success factors, the testing of system components, ensuring plans are in place to provide user training, and that hardware and operating system software are installed and properly configured.

\*Prerequisite: IT 423

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### **IT 400 Advanced .Net\***

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This course is a continuation of IT 307, focusing on solving advanced business problems using the Microsoft DotNet environment. Creation of database routines through the use of a DotNet language, Structured Query Language (SQL), Windows Forms and ASP.NET forms and DotNet controls are some of the primary methods covered in the course.

\*Prerequisite: IT 307

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### **IT 408 Advanced XML/HTML Programming\***

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The purpose of this course is to enable students to understand, conceptually integrate, and apply the advanced XML technologies that underlie the development of Web Applications, Web Services, and Enterprise Services. The XML and related technologies covered or re-emphasized in this course consist of: (X)HTML, CSS, JavaScript, XML-Schema, XPath, XSLT, SOAP, and WSDL. Given knowledge of these technologies, plus server side programming languages and middleware such as J2EE and/or .NET, the student will be well prepared to contribute to multiple areas within Information Technology.

\* Prerequisite: IT 317

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### **IT 481 Enterprise Service Oriented Architecture\***

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The purpose of this course is to understand why and how to integrate business and technological domains in order to create an overall Enterprise Service Oriented Architecture. This architectural approach will guide the development of effective and efficient business automation processes that represent critical value streams within an organization. To create such architecture, the student will be introduced to the development of enterprise level business services

and activities and the technical architectures required to support and implement them. The student will learn how to combine these identified services and activities into business processes that are then expressed as Enterprise Services. Concurrently with these theoretical analyses, the student will have access to software that will illustrate and demonstrate these various services and their interactions. The course will emphasize the foundations on which current Enterprise Service Oriented Architecture is built, namely, Web Services.

\* Prerequisite: IT 307

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### **CAP 485 Integrated Capstone\***

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The Integrated Capstone Course helps students to synthesize the knowledge and skills that were learned in General Education and Common Body of Knowledge classes with the functional, theoretical and technical skills and knowledge acquired in the Core and Major courses. The goal of the course is to create a dynamic inter-disciplinary learning experience, where organizational issues are viewed from various perspectives. Students will also assess and demonstrate their mastery of University and program learning outcomes.

\*Prerequisite: Student must have completed at least 114 credits.