COLLEGE OF NATURAL AND APPLIED SCIENCES, ALLIED HEALH & NURSING

DEPARTMENT OF COMPUTER & INFORMATION SCIENCES

Graduate Certificates

CIS Graduate Certificates

Students will be required to take 4 courses (12 credits).

Information Technology Management

CPTR 505 Foundations of Information Systems
CPTR 560 IT Infrastructure & Technology Management
CPTR 675 Project & Change Management

Choose any one (1) of the following courses:
CPTR 507 Computer & Professional Ethics
CPTR 550 Database Systems Administration
CPTR 613 Information Assurance & Security Mgmt.
CPTR 620 Emerging Technologies & Issues
CPTR 626 Software Engineering
CPTR 630 Information Policies & Strategies
CPTR 635 Knowledge Mgmt. & Business Intelligence

Information Security

CPTR 613 Information Assurance & Security Mgmt.
CPTR 663 Network Security and Intrusion Detection
CPTR 507 Computer & Professional Ethics

Choose any one (1) of the following courses:
CPTR 688 Enterprise Models and Systems
CPTR 680 Data Telecommunications & Networking
CPTR 560 IT Infrastructure & Technology Management

Data Management

CPTR 550 Database Systems Administration
CPTR 585 Data Warehousing and Mining
CPTR 635 Knowledge Mgmt. & Business Intelligence

Choose any one (1) of the following courses:
CPTR 560 IT Infrastructure & Technology Management
CPTR 613 Information Assurance & Security Mgmt.
CPTR 630 Information Policies & Strategies
CPTR 644 Analysis, Modeling and Design
CPTR 677 Decision Support Systems
CPTR 680 Data Telecommunications & Networking
CPTR 688 Enterprise Models and Systems

Network Administration

CPTR 560 IT Infrastructure & Technology Management
CPTR 663 Network Security and Intrusion Detection
CPTR 680 Data Telecommunications & Networking

Choose any one (1) of the following courses:
CPTR 505 Foundations of Information Systems
CPTR 613 Information Assurance & Security Mgmt.
CPTR 688 Enterprise Models and Systems
CPTR 604 Electronic Commerce

DESCRIPTION OF COURSES

CPTR 505 Foundations of Information Systems 3 credits

This course explores contemporary information systems (IS) and its role within an organization. It seeks to provide a fundamental understanding of the impact of information technology on decision making and key business rules. Discusses how information systems and technology acts as an enabler for businesses to operate differently and more efficiently. Also introduces systems theory, process improvement and the development of information systems.

CPTR507 Computer & Professional Ethics 3 credits

The course is aimed at providing an understanding of the implications of the use of computers on individuals, organizations and the society. The implications of digitizing data, information, and communications are examined in regard to ethical issues, professional conduct, and moral persuasion. Areas of study include: information privacy, plagiarism, software piracy, computer crimes, the legal and regulatory environment, and the impact of globalization, sourcing, technology workforce, and the digital divide. Emphasis will be placed on the morals and ethical considerations involved with the potential decisions and actions of individuals as it relates to information systems and technology.

CPTR 511 Information Systems Programming 3 credits

Business applications, planning, testing computer programs and coding will be studied. The course includes programming event driven applications and graphical user interfaces along with data theory. This course presents object oriented and procedural software engineering methodologies in data definition and measurement, abstract data type construction and use in developing GUIs, reports and other IS applications.

CPTR 515 The Management of Information Systems 3 credits

The course covers the application of information systems in organizations, systems quality, theory and decision making. It demonstrates how managers help in providing IS services within the organization. Problem identification, process mapping, business process problems model enterprise processes, business process analysis, business process reengineering and benchmarking are covered.

CPTR 550 Database Systems Administration 3 credits

Database Systems Administration focuses on managing corporate data resources. It examines the concepts, principles, issues and techniques for managing the design and development of large database systems. Topics include: logical data models, concurrent processing, data distribution, database administration, data warehousing, data cleansing, and data retrieval. The course also reviews modern database management systems and examines management application and implementation of database systems in corporate and organizational information systems.

CPTR 560 IT Infrastructure & Technology Management 3 credits

Discusses fundamental information technology and telecommunications infrastructure such as data, video, VOIP, networking, web services and the integration of enterprise applications. Covers key concepts, models, systems architectures, essential protocols, noteworthy standards, information security and assurance as well as the design, deployment and administration of networks. Additionally, the course examines servers, various storage and distributed systems such as cluster, grid and cloud computing. Further explores the development and implementation of relevant technologies to serve an organization in a dynamic and competitive environment. An introduction to essential concepts relating to technology management and the role of IT managers/directors is also presented.

CPTR 570 Human Computer Interaction 3 credits

The main aim of the Human Computer Interaction course is to provide a fit between human, technology, and tasks to achieve high performance and satisfaction within organizational and business context. It addresses human characteristics and their impact on developing human-centred information systems, the HCI development processes that concerns the entire lifecycle of the information system as well as HCI evaluation concerns, techniques, issues, and standards.

CPTR 585 Data Warehousing and Mining 3 credits

The architectures of data warehouse are explored. This course focuses on data analysis and data warehouse design. Data mining algorithms are used to retrieve information stored in the data warehouse.

CPTR 596 Introduction to Research 3 credits

This course introduces students to basic concepts and skills of research. It introduces students to methods of formulating, designing and implementing a research project. The nature of research along with the components of research resulting in publication are examined. Research writing and management of research are covered.

CPTR 604 Electronic Commerce 3 credits

This course focuses on internet and electronic commerce systems. It covers electronic commerce infrastructure, online advertisement, electronic payment systems, security issues, global digital economics and marketing on the internet.

CPTR 613 Information Assurance and Security Management 3 credits

This course covers issues that are related to information science and computer security. It will provide an overview of general practices involved with information security management and expose students to a range of computer security related topics. Various common threats and countermeasures will also be discussed. Topics include information assurance, governance, and risk management.

CPTR 620 Emerging Technologies and Issues 3 credits

This course discusses emerging technologies, their evolution, identification, and the impact of international, political, social, economic and cultural factors on these technologies. Topics to be covered include: technology forecasts, their methodologies, accuracy and how they can be improved; global perspectives on up-and-coming technologies and current trends in the field.

CPTR 630 Information Policy and Strategy 3 credits

The course seeks to examine the fundamental components of an organization in addition to the development and implementation of policies and plans aimed at achieving the goals of the organization. Topics include: top management, strategic perspective for aligning competitive strategy, core competencies, and information systems. Additionally, support systems, information systems management approaches and the role of the CIO will be studied.

CPTR 635 Knowledge Management & Business Intelligence 3 credits

This course deals with using organizational practices, processes and technology to increase returns on knowledge capital. It focuses on Business Intelligence in organizations.

CPTR 644 Analysis, Modeling and Design 3 credits

Covers a number of topics related to the analysis and design of information systems. Areas include the systems development life cycle, various analysis and design techniques, process modeling, projects identification and selection, requirements analysis, conceptual and logical data modeling, data management and database implementation, elements of user interface design, systems implementation operation and maintenance. Approaches such as prototyping, rapid application development, visual development an object-oriented design will also be addressed.

CPTR 663 Network Security and Intrusion Detection 3 credits

A study of network security and intrusion detection. Topics covered include web security, security overview, communication security, network security topologies, intrusion detection, authentication, security algorithms, disaster recovery, forensics overview and physical security.

CPTR 677 Decision Support Systems and Methods 3 credits

Students will be exposed to decision making aids and simulations. Design of decision support and expert systems will be covered. Management decision center will be used to investigate group dynamics in decision making. Methods of handling unstructured and under specified problems from both management and the organization will be covered in the course.

CPTR 675 Project & Change Management 3 credits

Students will focus on project management within an organizational context. This involves the processes related to initiating, planning, implementing, controlling, reporting, and closing a project. Topics covered include but are not limited to: project integration, time, scope, cost, quality control, and risk management. Additional areas include work assignment; outsourcing; client and partner relationships; progress monitoring and version control; and the role of the information systems manager/specialist as it relates to change management. **Pre-Requisite: CPTR 505 Foundations of Information Systems**

CPTR 680 Data Communications & Networking 3 credits

Data communications and Networking aims to provide a solid foundation in the study of telecommunications which include data, image, video and voice. The fundamentals of networks, transmission and switching efficiency, regulatory and technical environments, security and authentication, network operating systems, e-commerce and associated web sites and practices, and middleware for wireless systems, multimedia, and conferencing are addressed. Additionally, the concepts, models, architectures, protocols, standards, and security for the design, implementation, and management of digital networks are studied.

CPTR 688 Enterprise Models & Systems 3 credits

This course provides a process-oriented view of the organization and its role in the supply chain. Students will look at processes as vehicles for achieving strategic objectives, transforming the organization and markets, and a means of achieving compliance; process analysis, design, implementation, control and monitoring; the role of enterprise resource planning (ERP), supply chain management (SCM), and customer relationship management (CRM) systems.