

# **Course Description**

**Study Plan Academic**

**Cohort entering 2016–2017**

**(Information Systems)**

## **Core Courses**

### **Course: IS 130T Information Systems (1)**

(3:3, 0, 0) required

#### Course Description:

This course introduces the important of Information Systems, it presents how and why they are used today. It explains the technology, people, and organizational components of information systems and gives idea about how businesses can use information systems for competitive advantage vs. competitive necessity. It is intended to explain to the student the formulation of a business case for a new information system, including estimation of both costs, benefits, and informs her about basics of the major components of an information systems infrastructure. She became able to identify the major steps of the systems development process

Prerequisites: None

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### **Course: IS 220T Database Fundamentals**

(4:3, 2, 0) required

#### Course Description:

This course develops the students' ability to understand the basics of databases and recognize the role of databases in different organizations. It enables the student to use one of the real world database management systems and also show her how she can build database structure.

The objectives of this course are present the logical solutions for solving different problems and demonstrate basic knowledge of the database structure.

Prerequisites: CS 111T

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### **Course: IS 221T Database Management**

(3:3, 1, 0) required

#### Course Description:

This course gives the basic fundamentals techniques of the file organization and the database recovery. It describes the principles of indexing in order to implement a relational database design using an industrial-strength database management system. In addition, it presents the key principles of data security to identify after the data security risk and the violations in data management system design. The course gives a deeper understanding of the concept of database transaction to apply it appropriately to an application context and database administration to perform database administration tasks.

Prerequisites: IS220T

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**Course: IS 224T Information Systems Security**

(3:3, 1, 0) required

**Course Description:**

This course focuses on the security of information systems; it presents the fundamental principles of information security and configures a simple infrastructure security solution.

The course educates students about the basics of access control, computer security and network security. It develops their knowledge about:

- The basics of access control, computer security, and network security.
- The basics of cryptography and security protocols.
- The basics of security risks.

It enables also students to understand examples of security threats.

Prerequisites: IS 231T

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**Course: IS 231T Information Systems (2)**

(3:3, 0, 0) required

**Course Description:**

This course explains how information systems can enable for new forms of commerce between individuals, organizations, and governments. It helps students to know the new technologies of communication, collaboration, and partnering.

In this course, students will understand

- The basic of how various types of information systems provide the information needed to gain business intelligence to support the decision making for the different levels and functions of the organization.
- How enterprise systems foster stronger relationships with customers and suppliers and how these systems are widely used to enforce organizational structures and processes.
- How organizations develop and acquire information systems and technologies.
- How to secure information systems resources, focusing on both human and technological safeguards

Prerequisites: IS 130T

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**Course: IS 332T e-Business Systems Design**

(3:3, 1, 0) required

**Course Description:**

This course aims to develop an understanding how information systems are enabling new forms of commerce in business. It presents some of the technologies which support information systems for business and gives idea about the principles of electronic payment systems.

Prerequisites: IS 231T

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**Course: IS 233T Information Systems Analysis and Design**

(3:3, 1, 0) required

Course Description:

The aim of this course is to explain how computers are designed and how it's work. It introduces the student to foundational of computer organization including combinational and sequential circuits, micro-architecture and instruction set architecture, assembler programming, internal data representations and essential hardware components that support operating systems. It is intended to give students an overview of the entire computer machine organization.

Prerequisites: IS 231T

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**Course: IS 322T Data warehousing and Data mining**

(3:3, 1, 0) required

Course Description:

This course is intended to recognize the fundamentals of data warehousing and manipulate the data warehousing, it uses the knowledge discovery in data warehousing and discovers knowledge in different applications. It enables students recognize the data mining by using different methods and algorithms of data mining.

Prerequisites: IS 221T + Math 161T

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**Course: IS 323T Object Oriented Design**

(3:3, 1, 0) required

Course Description:

This course provides a clear description of Object Oriented Analysis and Design concepts for applying them to solve problems.

This course develops the student's ability to:

- Understand the foundations of object oriented design
- Understand the formal object-oriented analysis and design processes
- differentiate between UML diagrams for using them to represent the architecture

Prerequisites: CS 111T + IS 233T

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### **Course: IS 234 T Multi-tier Application Development**

(3:2, 2, 0) required

#### Course Description:

This course introduces the multi-tier application architecture; it explains the interaction with a database management.

This course enables students to understand:

- The basic mechanisms for accessing relational databases from various types of application development environments,
- The basics of secure web applications.
- The basics of linking data/information modeling and business process modeling.

It gives them the ability to implement and deploy a multi-tier software application and to apply in formation requirements specification processes in the broader system analysis and design context.

Prerequisites: CS 111T + IS 220T

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### **Course: IS 340T Enterprise Architecture**

(3:3, 0, 0) required

#### Course Description:

This course utilizes techniques for assessing and managing risk across the portfolio of the enterprise, it evaluates and prepares planning for the integration of emerging technologies, and it evaluates also the total cost of ownership and return on investment for architecture alternatives.

This course offers to students the opportunity to:

- Understand a variety of frameworks for enterprise architecture analysis and decision making.
- Understand the core concepts of data/information architecture and evaluate existing data/information architecture designs.
- Understand the benefits and risks of service oriented architecture.
- Understand the role of audit and compliance in enterprise architecture.
- Learn plan for business continuity.

Prerequisites: IS 323T + IS 234T

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### **Course: IS 350T Project Management**

(3:3, 1, 0) required

#### Course Description:

Successful management of software projects is a vital ingredient for overall success. This course gives a thorough grounding in software development management, and features the skills needed to manage innovative technologies and techniques.

This course aims to

- Increase dependency on interactive teaching such as in-class groups and brain storming, cases discussions.
- Practice in the tutorial session practical examples to re-enforce the concepts studied in the course.
- Deploy the black-board system in the learning process.
- Update the content periodically based on recent developments in the field.
- Compare the content with what presented in other sections of local, regional and global.

Prerequisites: CS 212T

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### **Course: IS 410T IS management and strategy**

(3:3, 0, 0) required

#### Course Description:

This course develops the students' ability to:

- Understand the various functions and activities within the information systems area, including the role of IT management and the CIO, structuring of IS management within an organization, and managing IS professionals within the firm.
- View an organization through the lens of non-IT senior management in deciding how information systems enable core and supportive business processes as well as those that interface with suppliers and customers.
- Understand the concepts of information economics at the enterprise level.
- Learn how IS represents a key source of competitive advantage for firms.
- Structure IS-related activities to maximize the business value of IS within and outside the company.
- Understand existing and emerging information technologies, the functions of IS and its impact on the organizational operations.
- Evaluate the issues and challenges associated with successfully and unsuccessfully incorporating IS into a firm.
- Understand how strategic decisions are made concerning acquiring IS resources and capabilities including the ability to evaluate the different sourcing options.
- Apply information to the needs of different industries and areas.
- Understand the role of IT control and service management frameworks from the perspective of managing the IS function in an organization.

Prerequisites: IS 231T

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### **Course: IS 435T Decision Support System**

(3:3, 1, 0) required

#### Course Description:

This course discusses today's turbulent business environment and describes how organizations can survive and even excel in such an environment. It presents the difficulties in managerial decision making nowadays. The course enable students to learn about major frameworks of computerized decision support such as: decision support systems (DSS) and business intelligence and identify the major tools of computerized decision support.

It demonstrates an understanding of the foundations, definitions, characteristics, and capabilities of DSS and business intelligence (BI) and describes the various types of DSS with an explanation to their use. Also, it discusses the benefits of business analytics and data mining. It explains management support system (MSS) modelling and presents the processes involved in designing and building a DSS.

The course focuses on the fundamental principles and capabilities of groupware and group support systems (GSS), knowledge management (KM), Artificial Intelligence (AI), and Knowledge-based Systems

Prerequisites: IS 322T

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### **Course: IS 451T Graduation Project I (Capstone I)**

(2:2, 1, 0) required

#### Course Description:

This course provides teamwork of students with a thorough guideline for survey and research to design, develop, and implement different fields covering "one or more" the IS Knowledge areas.

This course develops the students' ability to work in a team; it allows them to understand a software topic survey and research. It gives them at the end an experience in designing and developing a relatively large software project and also an experience in documenting and presenting a major piece of software.

Prerequisites: The student must pass at least 90 credits + IS 350T + IS233T

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### **Course: IS 452T Graduation Project II (Capstone II)**

(2:1, 2, 0) required

#### Course Description:

This course provides teamwork of students to:

- Implement and test the proposed project in the Graduation Project Proposal.
- Cover "one or more" of the IS knowledge area.

Prerequisites: IS 451T

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**Course: IS 453T Internship**

(4:2, 0, 6) required

Course Description:

This course provides a supervised experience in IS environment with an aim of helping the PNU students to develop an insight to the professional demands of the work place. It helps students to appreciate real-world opportunities and constraints such that they will be better preparing to enter their future careers

Prerequisites: 90 credit hours

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## **Elective Courses**

### **Course: IS 362T Business Process Management**

(3:3, 0, 0) elective

#### Course Description:

This course looks at ways in which business processes can be analyzed, redesigned, and improved.

A business process is a set of activities that jointly realize a business goal in an organizational and technical environment. These processes take place in a single organization but may need to interact with processes in other organizations.

Business process management (BPM) is concerned with the concepts, methods, and techniques that support the design, administration, configuration, enactment, and analysis of business processes. BPM is concerned with the explicit representation of processes – once they are defined, processes can be analyzed, improved, and enacted. Software in the form of business process management systems can be used to coordinate business process activities.

By taking this course, students will be able to understand business process from a general management perspective, and learn tools, analytical frameworks and general principles for managing business processes.

The aim of this course is to introduce students to methodologies and techniques of business process modeling. A main objective is to increase students' awareness of the concepts and foundations of business process modeling and the potential to improve the efficiency and effectiveness of organizations by using business process modeling

Prerequisites: IS 233T

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### **Course: IS 411T IT Auditing and Control**

(3:3, 0, 0) elective

#### Course Description:

The primary focus of this course is survey standards, practices and research on IT audit and control.

Some key objectives of the course include:

- To understand the concept of business risks and the management of business risk
- To understand IT risk as a component of business risk
- To gain an appreciation of the need to manage IT risks
- To gain an understanding of the basic type of controls required in a business system in order to control IT risks
- Learn concepts and applications of the following types of IT controls: top management, system development, and programming
- To gain an appreciation for the difficulties in assessing systems effectiveness and efficiency,
- To understand the new system control risks created by the use of the internet for business applications and electronic business

Prerequisites: IS 410T

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**Course: IS 414T Disaster Recovery Management**

(3:3, 0, 0) elective

Course Description:

This course introduces and explains the concepts of disaster recovery, it helps students to:

- Understand the best practices for designing, incidents and crises.
- Understand cost-benefit and trade-off for the different approaches when managing disaster recovery.
- Understand the business continuity planning approach

Prerequisites: IS 234T

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**Course: IS 341T Cloud Computing Management and Security**

(3:3, 0, 0) elective

Course Description:

This course introduces students to the Cloud definition, services and deployment. It aims to get learners to understand the risk associated with the different Cloud services and deployment types. The course focuses on developing skills of Cloud structure and management services, Cloud attributes and Cloud management services.

It develops the student's ability to understand the challenges for establishing trust in the Cloud

Prerequisites: IS 340T

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**Course: IS 342T Enterprise Systems**

(3:3, 0, 0) elective

Course Description:

This course is designed to provide students with an understanding of the theoretic and practical issues related to the application of enterprise systems within organizations. The main focus of this course is to demonstrate how enterprise systems integrate information and organizational processes across functional areas with a unified system comprised of a single database and shared reporting tools. Enterprise systems, by their multi-dimensional integrative nature, offer the depth of functionality and breadth of integration to demonstrate how global operations of organizations are managed.

Prerequisites: IS 340T

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### **Course: IS343T Enterprise Resources Planning**

(3:3, 1, 0) elective

#### Course Description:

Enterprise Resource Planning (ERP) has been successful in many companies and yet many others have struggled with their efforts. Time and other resources are in critical short supply. Enterprise Resource Planning (ERP) enhances the productivity of these critical resources.

This course provides a road map with many real life examples for successful implementation and utilization of ERP. It explores conceptual tools and their application for enterprise planning, management, and execution. In addition, it describes ERP from the perspective of the business manager in a clear step-by-step manner. It uses an easy-to-read format to provide a deeper understanding of ERP concepts

Prerequisites: IS 233T

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### **Course: IS 363T Selected Topics (1)**

(3:3, 1, 0) elective

#### Course Description:

This course: Expand topics in this course knowledge area.

This course gives an idea about the latest schemes, developments, and applications of the topics. In addition, it explains in depth chosen topics related to the knowledge areas which are explained briefly in the plan and the students wish to go into more details. It discusses recent research papers in the topics related to the knowledge area

Prerequisites: None

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### **Course: IS 413T Risk Analysis Management**

(3:3, 0, 0) elective

#### Course Description:

This course explains the concepts of threat, evaluation of assets, information assets, physical, operational, information security and how they are related.

It provides for students the opportunity to:

- Understand the need for the careful design of a secure organizational information infrastructure.
- Perform risk analysis and risk management.
- Understand both technical and administrative mitigation approaches.
- Understand the need for a comprehensive security model and its implications for the security manager or Chief Security Officer (CSO).
- Create and maintain a comprehensive security model.
- Understand and apply security technologies.
- Design and guide the development of an organization's security policy.

Prerequisites: IS 234T