750111, Computer skills
3 hours per week, 3 credit hours, prerequisite: none
Aims: Introduction to computer systems and practical use of software packages.
Teaching Method: 30 hours Lectures and Laboratory (2 per week) + 15 hours Example sessions (1 per week)
Textbook:
Synopsis: Introduction to computer systems and practical use of software packages.
Introduction, MS-DOS, MSWindows, WinWord, Excel, PowerPoint, Internet.
Assessment: Two 1-hour midterm exams (15% each); Assignments (20%); 2-hours Final Exam (50%)

750112, Programming Fundamentals
3 hours per week, 3 credit hours, prerequisite: none
Teaching Method: 30 hours Lectures (2 per week) + 15 hours Tutorials (1 per week) + 15 hours Laboratory (1 per week)
Aims: This module aims to introduce the principles of Top Down problem solving strategy (divide and conquer), algorithm design, and imperative programming mainly at an abstract level. Topics include data definition structures, control structures, and primitive data structures. C++ programming language (in visual environment) is adopted as a vehicle language for implementations.
Textbooks:
2- Deitel & Deitel, C++ How to Program, Prentice-Hall, 2000
Synopsis: Problem Solving, Problem Solving Methodology: Analysis, Design (Algorithm), Coding (program), Testing, Maintenance, Top Down Algorithm design (Sub algorithm : function), Data Definition Structures: Types, constants, variables, Expressions: Arithmetic, Logical, Control Structures: I/O, Assignment, Sequence, Selection (simple, alternated, and multiple), Repetition (While, do while, for), Parameters definition and passing (function depth look), Record (non uniform set), Array of 1 and 2 dimensions (uniform set), Strings (use of main operations: Concatenate, Left_N_char, Right_N_Char, Include, Compare, …), File (use of main operations of a sequential file: open, reset, rewrite, read, write, eof), VC++ environment: Editor, compiler, linker, Run, and debugger, Programming with C++: Translating Algorithm structures into C++ structures
Assessment: Two 1-hour midterm exams (15% each); Assignments (20%); 2-hours Final Exam (50%).
761272, Multimedia Systems (course number is wong)
3 hours per week, 3 credit hours, prerequisite:

Teaching Method: 37 hours Lectures (2-3 hours per week) + 8 hours Tutorials (1 per 2 weeks)

Aims: This module is an introduction to the major topics related to multimedia (desktop publishing, hypermedia, presentation media, graphics, animation, sound, video, and integrated authoring techniques), multimedia devices and development tools. It emphasizes hands-on experience for students to familiarize them with the range of tools used in creating computer-based multimedia.

Textbooks:

Synopsis: Introduction to Multimedia: Basic concepts, Applications (video on demand, Videoconferencing, virtual learning, entertainment, games, simulations, virtual reality…), Multimedia Hardware, Multimedia Software Tools (Overview on current available tools), Desktop Publishing, Graphics, Pictures: graphic modes and formats, still pictures and format (JPEG…), User Interface Design and Graphics: Graphic Elements and user interface considerations (Backgrounds, buttons, presentation elements), Production Planning and Design: (Research, content flow, Content acquisition, Multimedia team management using project management software, Budgeting considerations, Element and resource lists), Audio and Sound, Analogue Video (1), Digital video (2), Animation, Authoring, Hypermedia Authoring: Authoring: Web Based Multimedia, Multimedia Compression: Overview on techniques and standards.

Assessment: Two 1-hour midterm exams (15% each); Project work (10%); Assignments (10%); 2-hours Final Exam (50%).

731270, Introduction to Web Programming
3 hours per week, 3 credit hours, prerequisite: 750112

Teaching Method: 18 hours Lectures (1-2 hours per week) + 7 hours Tutorials (1 per 2 week2) + 20 hours

Laboratory (1-2 hours per week)

Aims: This module aims to give students an introduction and general concepts of the Internet and Intranet technology, the World Wide Web, TCP/IP and Web design languages (HTML, CSS, JavaScript, and ASP). It also involves the necessary background that student needs to develop different tasks of programming aspects concerning the foregoing objectives. Sufficient study levels are supposed to be studied and learned by the
students within the course for the sake of applying the different fields of education, learning, economical, EBusiness and other approaches.

**Textbooks:**


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**Assessment:** Two 1-hour midterm exams (15% each); Course work (15%); Tutorial contribution (5%); 2-hours Final Exam (50%).

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### 721240, Computing Ethics

3 hours per week, 3 credit hours, prerequisite: 0731150

**Teaching Method:** 30 hours Lectures (2 hours per week) + 10 hours Seminars (average 1 per week) + 3-5 hours presentations at the end of the semester (depending on the number of students in the class) where students present their work in the essays.

**Aims:** This module aims to give students an informed awareness of the principal issues of professional ethics and responsibility in the design, implementation and use of computer and information systems. In addition, the module aims to help in recognition of ethical problems when they occur, and to enable students to deal effectively with ethical and professional issues now and in their future careers. The module does not require a laboratory, but one group and one individual essay are required. Students are expected to spend 10 - 20 hours preparing for these essays at outside lecturer times. Students are asked at the end of the semester to present their essays.

**Textbooks:**

**Synopsis:** Introduction to the module, Problems of ethical decision-making, Professional Societies and their codes
of conduct and practice, Professionals and Professional Behavior, Discussion of Case Studies: Describing Steps to Resolve the Current Situation, Preparing Policies and Strategies to Prevent Recurrence. Introduction to the Crawling Eye case study, Formal laws do not make for ethics, Graduate careers in the 21st century, Building the foundations to future career success, Concurrent engineering, group working and distributed enterprises, The law and contracts, Safety critical systems and legal liability, Introduction to the Killer Robot case study, A business view of contracts, IPR and copyright, IPR and patents, Computer misuse and the law, Data Protection, the Act and its implications. 

Assessment: Two (1 hour) midterm exams (15% each); Assessment by individual essay (10%); Assessment by group essay (10%); 2-hours Final Exam (50%).

731150, Introduction to Information Systems and Technology
3 hours per week, 3 credit hours, prerequisite: 750112
Teaching Method: 38 hours Lectures (2-3 hours per week) + 7 hours Tutorials (1 per 2 weeks)

Aims: This module aims to provide students with some concepts of information systems and some applications in business and management systems.

Textbooks:

Synopsis: Information theory, dynamic systems, concepts and applications in business organizations, information theory and applications, information systems, information systems in management, management information systems, information technology and computer information systems.

Assessment: Two midterm exams (15% each); Assignments (15%); Tutorial contribution (5%); 2-hours Final Exam (50%).

721120, Object oriented Paradigms
3 hours per week, 3 credit hours, prerequisite: 750112

Teaching Method: 20 hours lectures (1 - 2 hours per week) + 18 hours laboratory (1-2 hours per week) + 7 hours tutorials (1 per week).

Text Book: C++ How to Program, Deitel and Deitel. Last Edition

Aims: introduction to object-oriented concepts and their programming in an object-oriented programming language.

Synopsis: Object-oriented programming focuses on the organization of software as a collection of discrete objects.
that incorporate both data structures and the operations performed on those structures. This course teaches the basics of object-oriented programming as it applies to business, including class, inheritance, and encapsulation, through the use of a language such as C++ or Java.

**Assessment:** Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

210105, General Mathematics for Administrative & Financial Sciences

3 hours per week, 3 credit hours, prerequisite: none

**Teaching Method:** 30 hours Lectures (2 per week) + 15 hours Tutorials (1 per week)

**Aims:** This module aims to provide students with some background in different topics in mathematics such as derivatives, applications of derivatives, integrals, applications of integrals, transcendental functions and inverses of functions.

**Textbooks:**
2- Howard Anton, Calculus, Wiley, 2002

**Synopsis:** General Introduction: (Inequalities, functions); Limits and continuity; differentiation: (rate of change, chain rule, implicit differentiation); the mean value theorem: (maxima and minima, applications, concavity, curve sketching); Integration: (the fundamental theorem of calculus, change of variables, applications (area, motion, solids of revolution); the transcendental functions: (differentiation and integration).

**Assessment:** Two 1-hour midterm exams (15% each); Assignments (10%); Tutorial Contribution (10%); 2-hours Final Exam (50%)

210231, Introduction to Probability and Statistics

3 hours per week, 3 credit hours, prerequisite: none

**Teaching Method:** 30 hours Lectures (2 per week) + 15 hours Tutorials (1 per week)

**Aims:** This module aims to help students grasp basic statistical techniques and concepts, and to present real-life opportunities for applying them.

**Textbooks:**

**Synopsis:** Descriptive statistics and probability distribution; Sampling distribution Estimation for the mean, variance and proportions; Testing for the mean, variance and proportions; Regression and correlation; One-way analysis of variance.

**Assessment:** Two 1-hour midterm exams (15% each); Assignments/Quizzes (10%); Tutorial Contribution
330101, Introduction to Management
3 hours per week, 3 credit hours, prerequisite: none
Teaching Method: 30 hours lectures (2 hours per week) + 15 hours tutorials (1 per week).
Text book:
Aims: Introduction to management focused around the achievement of organizational goals, and covering the major topics of strategy, systems, structure and resources, particularly peoples and money.
Synopsis: Introduction: definition and the need for management, The scientific method in studying management,
The importance of management, Evaluation of management theory and management schools Planning and management decision -making Organizational charts and the organizational structure ,The importance of directing, Leadership forms and theories ,Motivation ,The communication process Control forms, methods ,and fields of application ,Management evolution and characteristics of poor management . Computer tools and applications are used to support the subjects.
Assessment: Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

732481, Commercial Law for Informatics
3 hours per week, 3 credit hours, prerequisite: 732371
Teaching Method: 30 hours lectures (2 hours per week) + 8 hours Tutorials (1 per 2 weeks) + 7 hours seminars (1 per 2 weeks).
Text Book:
Aims: To give the student the main concepts of commercial law in business and management.
Synopsis: Definition and origin of commercial law, commercial acts, store, commercial registry, commercial pledge, and agency commission (factor and brokers).
Assessment: Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

311101, Principle of Accounting 1/English
3 hours per week, 3 credit hours, prerequisite: 130101
Teaching Method: 30 hours lectures (2 hours per week) + 8 hours Tutorials (1 per 2 weeks) + 7 hours seminars (1 per 2 weeks).
Text Book:
Aims: Introduction to Managerial Accounting.
Synopsis: This course covers the following topics:· Introduction to Managerial Accounting.· Basic Cost terms and Concepts.· Cost Behaviour and Profit Margin.· Relationship among Cost-Volume-profit.· Relevant Information and Decision Making.· Cost Analysis and pricing.· Budgets: Master Budget; Sales Budget; Production Budget; Raw Materials Budget; Labour Budget; Overhead Budget; Cost of Goods Sold Budget; Sales
Expenses Budget; Administrative Expenses Budget; Capital Expenditures Budget; Cash Budget; Performa Income Statement; Performa Balance sheet; Performa Cash flow Statements; Participate Budgets; Kaizen Budget.

Use CASE tools and other software to support the course materials.

**Assessment:** Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

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### 731212, Introduction to Data structures and Algorithms

3 hours per week, 3 credit hours, prerequisite 721120

**Teaching Method:** 20 hours lectures (1 - 2 hours per week) + 18 hours Tutorials (1- 2 hours per week) + 7 hours laboratory (1- 2 hours per 2 weeks).

**Text Book:**

C++ An Introduction to Data Structures, Nyhoff, Latest Edition

**Aims:** This module aims to use truly object-oriented perspective to concentrate on teaching data structures rather than an object-oriented language features. Each data structure is introduced with a corresponding collection classes. Excellent case studies are also included. Any object-oriented language may be used.

**Synopsis:** Introduces students to the basics of data structures (stacks, queues, linked list, …). Introduces algorithmic analysis, string processing, recursion, and file processing techniques. Introduction to Algorithms.

**Assessment:** Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

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### 731421, Operations Research

3 hours per week, 3 credit hours, prerequisite 210105+210231

**Teaching Method:** 20 hours lectures (1 - 2 hours per week) + 15 hours laboratory (1 per week) + 10 hours tutorials (1 per week).

**Text book:**


**Aims:** To introduce the concepts of operation researches in different business and management applications. Introduction to quantitative analysis: its importance and uses, Introduction to probability distributions, Decision theory, The utility theory and decision - making Linear programming methods: Case studies and CASE tools are used to support the subjects.

**Assessment:** Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

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### 760261, Database Fundamentals

3 hours per week, 3 credit hours, prerequisite:731212

**Teaching Method:** 30 hours lectures (2 hours per week) + 7 hours Tutorials (1 per 2 weeks) + 8 hours laboratory (1 per 2 weeks).

**Text book:**


**Aims:** This module aims to present the relational model and a corresponding DBMS. The DDL and DML must be used on a concrete database.

Assessment: Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

731251, Information Systems Management
3 hours per week, 3 credit hours, Prerequisite 731150
Teaching Method: 30 hours lectures (2 hours per week) + 10 hours seminars (1-2 hours per 2 week) + 5 hours tutorials (1 per 2 weeks).
Aims: This topic aims to introduce students to Information Systems strategies and to Information Systems management.
Synopsis: Information definition, information and communication principles, information and message semantics, fundamental elements of communication system, the mathematical semantics of information, information control, information case, information systems in organizations, operating systems, business information systems, secession support systems, database and database systems.
Assessment: Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

732322, E-Marketing
3 hours per week, 3 credit hours, prerequisite 731371
Teaching Method: 30 hours lectures (1 - 2 hours per week) + 15 hours Tutorials (1 per week).
Aims: To introduce the concepts of marketing.
Synopsis: Definition of marketing, The modern concept of marketing, Consumer behaviour, Behavioural factors affecting consumer demand Consumer behaviour approaches, Buying decisions and buying steps of the ultimate consumer, Market study and fundamentals of market segmentation, Commodities study, Organizing distribution: direct and indirect distribution channels, Marketing functions, Managing marketing functions, Planning in marketing, Marketing strategy and the marketing mix (product differentiation, packaging and pricing) Marketing research. Computer tools and applications are used to support the subjects. Case studies and CASE tools are used to support the subjects.
Assessment: Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

731331, Database Applications
3 hours per week, 3 credit hours, prerequisite 0760261

*Teaching Method:* 30 hours lectures (2 hours per week) + 7 hours Tutorials (1 per 2 weeks) + 8 hours laboratory (1 per 2 weeks).

*Text book:* 

*Aims:* This module aims to present the DBMSs and their applications in business and management.

*Synopsis:* System implementation techniques, Introduction to implementation, Data storage, Representing data elements, Database recovery techniques, Database security and authorization, Advanced database applications, Enhanced data models for advanced applications, Temporal database, Deductive database, Database technology for decision support applications, Distributed database and client server architecture, Emerging database technologies and applications.

Case studies and CASE tools and DBMS are used to support the subjects.

*Assessment:* Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

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731332, Systems Analysis & Design

3 hours per week, 3 credit hours, Prerequisite 0760261

*Teaching Method:* 20 hours lectures (1-2 hours per week) + 15 hours Tutorials (1 per week) + 10 hours laboratory (1 per week).

*Text books:* 

*Aims:* This course aims to provide students with an object-oriented information system development process.

*Synopsis:* Introducing systems analysis and design. The systems analyst roles, attributes, and place. The systems development life cycle (SDLC). Introduction to systems analysis, feasibility studies. System study and system design, implementation and control. Tools for systems analysis and design.

*Assessment:* Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

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761340, Fundamentals of Computer Networks

3 hours per week, 3 credit hours, second year, first semester, Prerequisite 731212

*Teaching Method:* 30 hours lectures (2 hours per week) + 10 hours laboratory (1-2 hours per 2 weeks) + 5 hours tutorials (1 per 2 weeks).

*Text Book:* 

*Aims:* Introduce students into networks and protocols fundamentals particularly TCP/IP.

*Synopsis:* This course looks at the types of information used in the business environment and the implications in terms of communications along with the trend toward digital integration of historically stand alone analogue and digital technologies. It examines the process of converting voice, data, image, and video information into
integrated electromagnetic signals for transmission via various media. Coverage includes communications
techniques, transmission efficiency methods, wide area networks (WANs), local area
networks (LANs), highspeed
trends in networking, and communications architectures and subsequent internetworking
issues.
Assessment: Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final
exam (50%).

731442, Principles of Operating Systems
3 hours per week, 3 credit hours, Prerequisite 760340
Teaching Method: 20 hours lectures (1 - 2 hours per week) + 15 hours laboratory (1 per week) +
10 hours tutorials (1 per week).
Aims: To introduce the basics of different operating systems and their applications in
management and business.

Text Book
Synopsis: Functions of operating systems, including process management and concurrency,
memory management, scheduling, user and file management security. The course provides hands-on
experience in specialized laboratory, with PC and workstation, including system setup and basic system
administration functions.
Assessment: Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam
(50%).

731351, Information Systems Modeling
3 hours per week, 3 credit hours, prerequisite: 731332
Teaching Method: 30 hours lectures (2 hours per week) + 8 hours Tutorials (1 per 2 weeks) +
7 hours seminars (1 per 2 weeks).

Text Book
2. Booch G. The unified Modeling Language 1999
Aims: Information Modelling in the Next Millennium is for researchers and practitioners,
who seek to understand the latest trends and developments in information modelling. The state-of-the-art and state-of-the-practice of
modelling methods and methodologies in information systems development provide insights into important new
developments in the new millennium.

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Synopsis: Approaches to information systems modelling and their use in information systems
development and information management. Philosophical foundations of information modelling, a comparison of approaches to
information modelling, evaluating the quality of information systems models, information modelling in practice - the
information model design process, generic models and patterns, corporate data modelling, the data management role within
organizations.
Assessment: Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam
(50%).
732361, Information Systems Projects Management
3 hours per week, 3 credit hours, prerequisite 330101+731150
Teaching Method: 30 hours lectures (1 - 2 hours per week) + 15 hours Tutorials (1 per week).
Text book:
Project Management for Information Systems, Cadle. 2003
Aims: To introduce the different projects management Technologies.
Synopsis: The concept of project management, Stages of the life cycle of the project,
management on the organization chart. Selection of the project manager, Planning for project implementation:
project scheduling: CPM and PERT, Acceptance or rejection of the project, Budget and cost control of the
project, Feasibility study of the project.
Case studies and CASE tools are used to support the subjects.
Assessment: Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

731371, E-Commerce
3 hours per week, 3 credit hours, prerequisite: 0721120+731270.
Teaching Method: 30 hours lectures (2 hours per week) + 5 hours Tutorials (1 hour per 2
weeks) + 10 hours laboratory (1 per week).
Text book:
Aims: This module aims to introduce Electronic Commerce basis, tools and applications.
Synopsis: Introduction to e-commerce, sales and marketing, globalization, company profiles,
architecture, commerce server, vendor solutions, payment systems, and security, auction technology,
project deployment.
Assessment: Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

732373, Decision Support Systems
3 hours per week, 3 credit hours, Prerequisite 731332+732361
Teaching Method: 30 hours lectures (2 hours per week) + 10 hours seminars (1-2 hours per 2
week) + 5 hours tutorials (1 per 2 weeks).
Text Book:
edition, Pearson Education
Science. 2nd Edition,
John Wiley & sons Inc.
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Aims: This topic aims to introduce students to decision making strategies.
Synopsis: Decision support systems background, comparison between decision theory,
operation research and artificial intelligence. Introduction to decision theory, decision and research operation and AI,
Multi criteria decision, thinking and case-based decision making, decision making cases and causes,
interactive decision support systems.
**Assessment:** Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

**731398, Practical Training**
3 hours per week, 3 credit hours, prerequisite: Department Agreement (student can take this module on completing 75 credit hours at least).

**Aims:** The main aim of this module is that students will have practice in different industrial, commercial, administrative enterprises or companies. By this module, students may apply, in the real world, what they have learned during the first three years of their study in the University. The module also aims to teach students how to be self-confident when they face problems in their practical life.

**Duration:** At least 9 weeks (18 training hours per week at least). This may be distributed onto two semesters at most.

**Regulations for Training:** Students who register on practical training module should not register on modules with total credit hours more than 15 hours per week including the training module itself. Students must, therefore, be full-time trainees for at least 2 days per week. Students should arrange their timetable for other modules in a way that enables them to enroll in the pre-specified enterprise or company at least two days per week during the semester period.

**Assessment:** A committee from the Department supervises the students along their training period, where one supervisor is assigned on one group of students. The student should submit a technical report to this committee in 2 weeks time after completing the training session. In addition, the trainer body presents a report to the committee. The grade "pass" is given to students who complete the training requirements successfully and discuss their reports with the supervision committee.

**731431, Data Warehousing and Data Mining**
3 hours per week, 3 credit hours, prerequisite: 760261

**Teaching Method:** 30 hours lectures (2 hours per week) + 10 hours seminars (1-2 hours per 2 weeks) + 5 hours tutorials (1 per 2 weeks).

**Text Book:**

**Aims:** An introduction to the concepts of data warehousing and data mining.

**Synopsis:** An introduction to the concepts of data warehousing and data mining as it applies to the data warehouse system environment. Data mining models, methodologies, techniques, and common operational issues will be covered.

*Use CASE tools and other software to support course materials.*
**Assessment:** Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

732451, Information Systems Security
3 hours per week, 3 credit hours, Prerequisite 731332
**Teaching Method:** 25 hours lectures (1 - 2 hours per week) + 5 hours Tutorials (1 per 2 weeks) + 15 hours laboratory (1 hour per week).
**Text book:**
Richard Smith, Internet Cryptography, Addison Wesley, 1997

**Aims:**
This topic aims to provide students with information security concepts, techniques, tools, and practice.

**Synopsis:**

**Assessment:** Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

732432, Object Oriented Database
3 hours per week, 3 credit hours prerequisite: 731431
**Teaching Method:** 25 hours lectures (1-2 hours per week) + 5 hours Tutorials (1 hour per 2 weeks) + 15 hours laboratory (1 per week).
**Text book:**

**Aims:**
Provide students with advanced database concepts and techniques as complement to database technology course.

**Synopsis:**
Transaction processing concepts, Concurrency control techniques, Database recovery techniques, Database security and authorization, Advanced database concepts and emerging applications, Enhanced data models for advanced applications, Temporal database, Deductive database, Database technology for decision support applications, Distributed database and client server architecture, Emerging database technologies and applications (multimedia, Web, …).

**Assessment:** Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

731463, Knowledge Management
3 hours per week, 3 credit hours, prerequisite 731332
**Teaching Method:** 20 hours lectures (1 - 2 hours per week) + 15 hours laboratory (1 per week) + 10 hours tutorials (1 per week).
**Text book:**
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Aims: This topic aims to select an information systems or information management viewpoint to examine concepts of knowledge management (KM) from perspectives including artificial intelligence, document management, organizational and management theory.

Synopsis: Relationship of science, knowledge vs data and information; sources and forms of knowledge, Views and characteristics of KM; knowledge acquisition and modelling; information science in knowledge management context; science and systems thinking; artificial intelligence and KM, organizational modelling - soft systems, organizational memory and learning; documenting knowledge: documents in electronic environment, meta-data; classification, business analysis, intranets as knowledge management technology; knowledge management environments: intranet and workflow; information support for decision making. Explicit and implicit knowledge, and techniques for modelling knowledge in decision making processes.; workflow approaches to KM; developing knowledge systems: evaluation of the knowledge requirements of organizations; knowledge elicitation techniques; techniques for validation of knowledge; strategies for applying KM in organizations.

Assessment: Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

731313, Advanced Java Programming
3 hours per week, 3 credit hours, prerequisite 721120
Teaching Method: 20 hours lectures (1 - 2 hours per week) + 15 hours laboratory (1 per week) + 10 hours tutorials (1 per week).

Text book:
1. Douglas Bell, Java for Students, Prentice Hall, 2002
2. Cay Horstmann, Gary Cornell, Core Java 2 Volume 1-Fundamental, 2001

Aims: This The student will be able to use Java capabilities to solve real world problem and apply Java in problem solving. The student will have knowledge about advanced OOP, Applets, GUI, Graphics, Multimedia programming, DB connectivity and other topics. Different Java packages and software will be used during the course.

Assessment: Two 1-hour unit tests (15% each) + Assignments (20%) + 2-hours final exam (50%).

731499, Graduation Project
3 credit hours, prerequisite: 731398 + Department Agreement
General Descriptions:
The graduation project consists of a single project on which the student works over a period of 16 weeks that can
be extended to 32 weeks (2 semesters). It is assumed that the student spends a nominal 192 hours (or 384 hours), the equivalent of 12 hours per week, working on this. There are three deliverables: demonstration, discussion, and a written report.

A student works under the supervision of a member of staff, the Supervisor. Most of the projects involve three students working together on the same project; apart from these, all students do different projects.

**Aims:** The aims for the project work done in the fourth year are:

1- To manage and execute a substantial project in a limited time.
2- To identify and learn whatever new skills are needed to complete the project.
3- To apply design and engineering skills in the accomplishment of a single task. In this context the skills mentioned may be in the general area of design and engineering in its broadest sense, or may be very specifically related to particular tools.


The projects list and notes for guidance in carrying out a project are available in the Graduation Project Committee.

**Assessment:** Supervisor mark: 35%; Project Examination Committee mark: 65%
(demonstration 20%, Report 25%, discussion 20%).