

CURRICULUM

Faculty of Information Science

Department of Information Systems



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Curriculum for Information Systems

1.0 INTRODUCTION

Information is increasingly becoming a key strategic resource for effective and sustainable development of any type of organization in our contemporary society. Recent advancements and applications of information systems and/or communication technologies have transformed the structure of international and national economies, leading to new methods and practices in most business systems and academic institutions. Schools of Information Studies (IS) and Technologies (IT), including those in developing countries, have long recognized this fact and introduced information systems into their curricula.

The academic programs of HUC are designed to prepare IS students who can assume professional responsibilities such as business information management, information (knowledge) management, business systems analysis and design, database design and development, coordinating and IS-service management.

2.0 VISION, MISSION, AIM & OBJECTIVES

2.1 VISION

The vision of the Department of Information Systems of Hope University College is to be a lead institution in offering state-of-the-art knowledge that integrates information systems with business and prepares highly skilled and qualified graduates for this task.

2.2 MISSION STATEMENT

The mission of the Department is the integration of computing resources to support the operations, analysis, decision-making, and planning functions in business organizations.

2.3 AIM

The aim of the curriculum of the Information Systems program is to provide attitudes, knowledge and skills through which graduates will become effective change agents by combining skills and knowledge across disciplines, able to communicate with people in an organization or business, understand organizational processes and design them in an optimal way using the technology.

2.4 OBJECTIVES

The general objective of the IS program is to equip graduates in the theories and practices of modern business information systems and services at the national, regional and international levels. The program will train students to design and develop information systems for business-oriented applications, such as accounting systems, payroll systems, enterprise resource planning systems, and so forth. Students studying this major will understand and model both business processes as well as information processes. Students are required to manage software design and database design.

The specific objectives of the IS program are:

- to foster an understanding of the theoretical and empirical bases of Information Systems as a discipline;
- to develop expert knowledge of IT-based information systems engineering/development and management;
- to instill knowledge of the economic, social, and strategic values of information;
- for students to understand and be able to use the analysis, design and management techniques used in various user-oriented information systems.
- for students to be able to design and develop information systems for business oriented application; and
- to provide a sound basis for further research in Information Systems.

3.0 GRADUATE PROFILE

All HUC graduates shall exhibit the following General Competencies:

Personal Accountability for the student's actions, at work and in society at large

Self-regulation: reflecting critically on the professional work of the student, and adjusting to finish tasks successfully.

Intellectuality: working scientifically, using analytical skills, to develop and carry out research valuable to the country's needs and development, writing and presenting the results in a clear and coherent manner; and valuing continual self-development through lifetime learning to cope with an environment of continuous change and a rapidly evolving society;

Leadership: able to lead people in the right direction by combining humility and respect for all people with integrity, strategy, motivating skills, a strong work ethic and an attitude of service; also able to serve as a leader in local, and national arenas.

3.1 PROFESSIONAL PROFILE

The graduates of the program will: have a solid academic base of general and specific subjects that serve as the foundation for Information Systems; the details follow:

Knowledge and Understanding

Graduates will have knowledge and understanding in the following major areas:

- Theoretical background in the functioning of computers and application of computers to business and other disciplines;
- Theories, principles, processes and techniques of organization, storage, retrieval, dissemination and utilization of all forms of information;
- Understanding of computers and communication systems, including basic systems analysis and design, network design, database development, implementation and management;
- Knowledge of basic principles of IS-based business information processing;
- Knowledge of organizational behavior and business principles;
- Theories, practices and principles of information systems analysis, design, development and management;

- Exposure to various types of academic and business information resources, systems and services;
- Principles and different approaches of computer programming and algorithm development to solve real world problems; and
- Theories, practices and principles of business process engineering for a creative manner to solve information-related problem of businesses and organizations.

Major Practical Skills and Competencies of the Graduates

Graduates will have the practical skill to:

- design, implement and evaluate various information systems and multimedia resources including the Internet;
- manage business information systems and services (organization and retrieval of business information);
- manage and actively participate in information system development projects;
- analyze, design, develop, manage and evaluate business information systems from different perspectives;
- provide information system/technology consultancy services;
- solve problems in business enterprises through application of information communication technology and development of decision support information systems; and
- plan and execute projects related to information systems development and resources and services.
- Manage and write computer programs using different technologies to solve information-related problems like storage, retrieval and management of information;

Transferable Skills

Graduates will be equipped with transferable skills:

- to work in teams in information systems projects and systems development;
- to have good communication skills with business people; and
- to have time and self-management skills.

Attitudes and Values

The graduates will be inspired:

- to have professionalism at the center of their mentality;
- to have a positive and responsive attitude towards the value of information resources;
- to have personal confidence in doing their jobs and in professional activities;
- to have a positive attitude towards their profession (dedication and commitment)
- to have a sense of co-operation, honesty, loyalty, and
- to be ethical.

3.2 PROGRAM PROFILE

In the Department of Information Systems in HUC, students learn problem solving, critical thinking, communication and team skills, which prepare them for leadership positions in the information systems field. Students gain familiarity with modeling business process workflows, systems integration, and project management. The program prepares students for professional careers in the rapidly expanding field of computer based business systems. Typical areas of employment for graduates include: Data Base Analyst, Systems Analyst,

Manager of Information Systems, Hardware or Software Sales Representative, Technical Writer, Systems Consultant, Information Analyst.

4.0 TEACHING METHODS & PHILOSOPHY

4.1 TEACHING METHODS

The teaching methods involve class room lectures, laboratory activities, field work and excursions. Students will also engage in seminar presentation, project execution and involvement in community work. Special attention will be given to integrating knowledge and professional skills so that the graduates are prepared for leadership in their fields.

4.2 TEACHING PHILOSOPHY

Based on the mission of HUC and the outcomes of the interviews with relevant stakeholders, the following elements are in the curriculum:

- Excellence in applying scientific knowledge in a professional setting
- Continual interaction between faculty, students and professional learning environments
- Integration of theory and practice with the purpose to become excellent professionals
- Participation from stakeholders to create a challenging and practical curriculum
- Competencies as an important outcome of the curriculum
- Integration of teaching and coaching with a focus on talent development of the student.

Graduates of HUC will make a difference through a balance of the following elements

- **Knowledge & skills**
Their professional activities are based on knowledge and skills that will help to contribute to the professional setting in which they are working.
- **Values & vision.**
Their professional activities should be based on integrity and a strong conviction about major issues in professional activities.
- **Personality & professionalism**
The student's professional activities are based on a balance of self knowledge from reflection on the one hand and eagerness to function in a professional way on the other.

Stressing these three elements underlines the importance of a holistic approach using a competency based curriculum. This modern concept of competency stresses the interrelationship of several learning dimensions in which the students combine knowledge, skills, motivation and attitude to create effective learning processes and to meet the standards of Hope University College.

The educational program will be characterized by increasing complexity. Knowledge, skills, attitude and competences will be tested at several levels during all years. The following five complexity-dimensions are distinguished:

- level of self management of the student

- level of professional cases to be dealt with
- the level of knowledge (and required analytical skills) to understand a specific subject
- the number of instruments, tools and methods needed to approach the subject

The department acknowledges these dimensions and challenges the students in their process towards professional maturity. Therefore, the curriculum has the integrative elements between theory and practice, between the different disciplines that are taught (a multi-disciplinary approach), and between the constituting parts of a competency. Furthermore, the curriculum has integrative elements between linguistic, calculative, analytic, synthetic, technical and ethical/philosophical tools to explore available knowledge and develop a moral and intellectual maturity for better judgement, leadership and knowledge ability.

5.0 ASSESSMENT METHODS

The traditional assessment methods, paper exams, will be used in most of the courses. Whenever applicable the following assessment methods might also be used.

- Peer Assessment
- Progress Assessment by advisors for Projects
- Presentation for course-based projects and senior project
- Laboratory practical tests
- Projects that demonstrate competency in the material covered in a course

Whenever the practical part of a course is crucial for declaring competency in a course, the student should score a satisfactory result in the practical assessment of the course.

6.0 ADMISSION REQUIREMENT

After a successful completion of preparatory program:

- As per the regulations of Ministry of Education,
- As per the senate legislation of the University, or
- A pass in entrance examination set by the department

7.0 DURATION OF THE STUDY

The duration of study for a BA in Information Systems is four years.

8.0 DEGREE NOMENCLATURE

The degree offered after successful completion of the program is called:

- In English – “Bachelor of Science in Information Systems’
- In Amharic – “የሳይንስ ባችለር ዲግሪ በኢንፎርሜሽን ሰነድ”

9.0 GRADUATION REQUIREMENT

Graduating students shall be awarded the “Bachelor of Arts Degree in Information Systems’ if they fulfill the following requirements:

- A minimum credit hour of 142
- A minimum Cumulative Grade Point Average of 2.00
- A minimum Cumulative Grade Point Average of 2.00 in core courses
- No F, NG, or I, in any course and
- Compliance with the regulation of the University

10.0 COURSE CODING

Course Code used has a four-letter prefix and a three-digit number.

- The prefix which represents the department is assigned to all core courses in the department. If a core course is the responsibility of another department, it will be assigned a new number in the current department, but both codes will be shown on the course description to indicate that they actually are the same.
- The first digit represents the year in which the course is offered by the responsible department (year at college starts with 2).
- The second digit distinguishes the course from other core courses offered in that semester.
- The third digit indicates the semester in which the responsible department offers the course to its students.

11.0 QUALITY ASSURANCE

To maintain the quality of the program and due to the dynamic nature of the field, a formative review and revision will be done regularly by the curriculum revision task force of the Department. The Department will also do a summative review of the program after four years of implementing this curriculum by collecting feedback from employers and graduates of the program. These formative and summative program reviews will help to maintain the quality of the program in line with the demand of the employers and the country at large.

Methods of quality assurance of the program will include but not be limited to:

- comprehensive examinations and colleague assessment of examination papers and teaching methods;
- periodic workshops (with stakeholders, teachers and graduates);
- assessments by using survey project work (research), internships, and link programs;
- graduates' evaluation of the program, establishing a Graduate Alumni organization as a mechanism to implement such evaluations and follow their career paths;
- standardization of course offerings through preparation of general course outlines, exam contents, and external audit;

- annual assessment of the program by the teaching staff;
- working closely with the relevant professional associations to assess graduates' performance.

12.0 GRADING SYSTEM

The grading system is a five scale grading system ranging from A to F and the respective grade points are presented below.

Grade	A ⁺	A	A ⁻	B ⁺	B	B ⁻	C ⁺	C	C ⁻	D ⁺	D	D ⁻	F
Value	4.00	4.00	3.75	3.50	3.00	2.75	2.50	2.00	1.75	1.50	1.00	0.75	0.00

13.0 LIMITATIONS OF THE CURRICULUM

Some of the limitations include:

- Lack of experience on the part of business organizations to create linkage with the Department,
- Not being able to find adequate positions in the business sector for students going out on internship programs,
- Reliance of clients on traditional methods more than conventional international methods.

14.0 RESOURCE REQUIREMENT

14.1 TEACHING STAFF

The quality of the training to be provided is very dependent on the skill and excellence of its staff members. Therefore, the HUC Senate has placed great emphasis on this aspect. Consequently, some volunteer expatriate staff will deliver quality education in areas where there is a deficiency. Also, HUC is recruiting qualified local staff with masters degrees and above, who possess good credentials and appropriate experience.

14.2 COMPUTER LABORATORY

HUC has arranged to provide enough computer terminals so every student has adequate computer access. Additionally, it is installing state-of-the-art internet access capabilities which allow every student to gain maximum benefit from online information and services. During the first semester, students will learn basic computer skills so they can use computers for class work in all subjects, for communication, research, oral presentations and so on during their college years and future career. Computer skills will also give them an opportunity to share knowledge and experience with counterparts in different businesses and service organizations during their internship. E-learning, E-books, and similar electronic services will also be available.

14.3 LIBRARY FACILITIES

Students will have access to one of the best libraries in the country and will have relevant, recent books, E-books and other materials to use for their studies, and for personal interest and development. Computers will be available in the library as well as other places, giving students access to information needed for research papers, reports, other assignments and broadening knowledge of their subject and their general knowledge.

15.0 CLASS SIZE

To assure the continuous assessment policy, the optimal class size shall be:

- For courses requiring class discussion – up to 40 students
- For lecture type courses – could be up to 80 students
- For lab and skill based courses – 24-30 students per class

16.0 PROGRAM STRUCTURE

The Information Systems program is designed to be completed within eight semesters. Each semester shall have 16 weeks of regular classes. Additionally there shall be one internship program at the end of the third academic year for two and a half months, where students will have an opportunity to work on practical information systems problems.

This real world experience will help students link theory and practice and have a vision of the skill, discipline and ethics demanded by information technology work. The major compulsory courses, supportive and general education courses are presented below.

LIST OF MAJOR COMPULSORY COURSES

Table 1: Major Compulsory Courses.

Course No.	Course Title	Cr. Hrs.	Lect. Hrs.	Lab Hrs.
INSY 211	Introduction to Information Technology	3	2	2
INSY 212	Computer Organization and Architecture	3	3	-
INSY 222	Programming I	4	2	4
INSY 311	Fundamentals of Database Systems	3	3	-
INSY 312	Database Systems: Management and Use	3	2	2
INSY 321	Information Systems Analysis and Design	3	3	-
INSY 322	Business Process Management (BPM)	3	3	-
INSY 331	Programming II	4	2	4
INSY 342	Project Management	3	3	-
INSY 412	Internet Programming - I	3	2	2
INSY 422	Multimedia Systems	3	2	2
INSY 431	IT Social, Professional and Ethical Issues	3	3	-
INSY 432	Systems and Network Administration	3	2	2
INSY 441	Operating Systems Management and Use	3	2	2
INSY 442	Data Communication and Computer Networks	4	3	2
INSY 451	Visual Programming	3	1	4
INSY 452	Internship	3	-	6
INSY 511	E-Commerce	3	2	2
INSY 512	Decision Support Systems	3	3	-
INSY 521	Information Assurance and Security	3	3	-
INSY 522	Management Information Systems	3	3	-
INSY 532	Computer Maintenance and Technical Support	3	1	4
INSY 542	Senior Project	3	-	6
TOTAL		72		

Table 2: Major Electives:

Code	Course Name or Title	Cr. Hr	Lec.Hr	Lab. Hr
INSY 501	Introduction to Artificial Intelligence	3	3	-
INSY 502	Introduction to Distributed Systems	3	3	-
INSY 503	IT and Economic Development	3	3	-
INSY 504	Selected topics in Information Systems	3	3	-
INSY 505	System Simulation and Modeling	3	3	-
Total		9		

Table 2. Supportive Courses

Course No.	Course Title	Cr. Hrs.	Lect. Hrs.	Lab Hrs.
MARK 212	Principles of Marketing	3	3	-
ECON 204	Introduction to Economics	3	3	-
ACCN 211	Principles of Accounting	3	3	
MAEN 211	Introduction to Entrepreneurship	3	3	-
MAEN 212	Introduction to Business Management	3	3	-
MAEN 312	Logistic Management	3	3	-
MAEN 422	Organizational Behavior	3	3	-
ACCN 332	Financial Management	3	3	-
MATH 203	Mathematics I	4	3	2
MATH 204	Mathematics II	4	3	2
STAT 301	Introduction to Probability and Statistics	3	3	-
PHYS 202	Physics Laboratory	3	2	3
	Total	38	32	6

Table 3: Crosscutting Courses

Course No.	Course Title	Cr. Hrs.	Lect. Hrs.	Lab Hrs.
CEED 201	Civic and Ethical Education	3	3	-
PHIL 201	Introduction to Logic	3	3	-
FLEN 201	Sophomore English	3	3	1
FLEN 202	Professional Writing	3	3	1
FLEN 301	Presentation and Communication Skills	3	3	1
COMP 201	Introduction to Computer Applications	3	2	2
PSYC 201	General Psychology	3	3	-
LEAD 501	Leadership Skills	3	3	-
	Total	24	20	8

Table 4: Minimum Course Requirement Summary**Credit hours of types of courses**

Course Type	Total Credit Hours
Major Compulsory	72
Major Electives	9
Supportive	38
Crosscutting	24
Grand total	143

17.0 SEQUENCING COURSE OFFERINGS BY SEMESTER

Table 6: Course Offerings by Semester

<i>Year</i>	<i>Semester I</i>		
<i>1</i>	<i>Course No</i>	<i>Course Title</i>	<i>CrHr</i>
	CEED 201	Civic and Ethical Education	3
	MATH 203	Mathematics I	4
	COMP 201	Introduction to Computer Applications	3
	INSY 211	Intro. to Information Technology	3
	PHIL 201	Introduction to Logic (Reasoning Skill)	3
	FLEN 201	Sophomore English	3
	<i>Semester Total</i>		<i>19</i>
	<i>Semester II</i>		
	<i>Course No</i>	<i>Course Title</i>	<i>CrHr</i>
	INSY 212	Computer Organization and Architecture	3
	MATH 204	Mathematics II	4
	PHYS 202	Physics Lab	3
	FLEN 202	Professional Writing	3
INSY 222	Programming I	4	
<i>Semester Total</i>		<i>17</i>	

<i>Year</i>	<i>Semester I</i>		
<i>2</i>	<i>Course No</i>	<i>Course Title</i>	<i>CrHr</i>
	INSY 311	Fundamentals of Database Systems	3
	INSY 321	Information Systems Analysis and Design	3
	ACCN 211	Principles of Accounting - I	3
	STAT 301	Introduction to Probability & Statistics	3
	FLEN 301	Presentation and Communication Skills	3
	INSY 331	Programming II	4
	<i>Semester Total</i>		<i>19</i>
	<i>Semester II</i>		
	<i>Course No</i>	<i>Course Title</i>	<i>CrHr</i>
	INSY 322	Business Process Management (BPM)	3
	INSY 342	Database Systems Management and Use	3
	ECON 204	Introduction to Economics	3
	MAEN 211	Introduction to Entrepreneurship	3
MARK 212	Principles of Marketing	3	
INSY 432	Systems and Network Administration	3	
<i>Semester Total</i>		<i>18</i>	

<i>Year</i>	<i>Semester I</i>			
3	<i>Course No</i>	<i>Course Title</i>	<i>CrHr</i>	
		Elective I	3	
		Elective II	3	
	INSY 431	IT Social, Professional and Ethical Issues	3	
	PSYC 201	General Psychology	3	
	INSY 441	Operating Systems Management and Use	3	
	INSY 451	Visual Programming	3	
			<i>Semester Total</i>	18
	<i>Semester II</i>			
	<i>Course No</i>	<i>Course Title</i>	<i>CrHr</i>	
	INSY 412	Internet Programming - I	3	
	INSY 442	Data Communication and Computer Networks	4	
	INSY 412	Project Management	3	
	INSY 422	Multimedia Systems	3	
	MAEN 312	Logistic Management	3	
	MAEN 422	Organizational Behavior	3	
			<i>Semester Total</i>	19
		INSY 452	Internship	3

<i>Year</i>	<i>Semester I</i>			
4	<i>Course No</i>	<i>Course Title</i>	<i>CrHr</i>	
	INSY 511	E-Commerce	3	
	INSY 521	Information Assurance and Security	3	
	MAEN 212	Introduction to Business Management	3	
	LEAD 501	Leadership Skills	3	
	ACCN 332	Finance Management	3	
			<i>Semester Total</i>	15
	<i>Semester II</i>			
	<i>Course No</i>	<i>Course Title</i>	<i>CrHr</i>	
	INSY 512	Decision Support Systems	3	
		Elective III	3	
	INSY 532	Computer Maintenance and Technical Support	3	
	INSY 522	Management Information Systems	3	
	INSY 542	Senior Project	3	
			<i>Semester Total</i>	15
			<i>Grand Total</i>	143

COURSE DESCRIPTIONS FOR MAJOR COMPULSORY COURSES

COURSE TITLE: INTRODUCTION TO INFORMATION TECHNOLOGY
COURSE NUMBER: INSY 211 SAME AS INTE 211
CREDIT HOUR: 3
PREREQUISITE: NONE

Course Description

This course provides an overview of Information Technology (IT). Topics include the development of computers, data representation, logical organization of a computer system, computer software, computer system architecture, computer network and communication, problem solving using computers, operating systems (single and multi-user) and the windows environment.

Course Objectives

On completion, students will have gained an understanding of the components of modern technological infrastructures, such as relevant hardware, software, data structures, networks, telecommunications and internet systems. Students will also have learned appropriate development methods for creating and implementing Information Systems.

Textbooks

1. Reed, David, A Balanced Introduction to Computer Science, 2ndEd, 2007, ISBN10: 0136017223/

References

1. Brookshear, J. G. 2008. Computer Science: An Overview, 10th ed. ISBN-10 0321524039. 688 p.
2. ITL Education Solutions Ltd, Introduction to Computer Science, Pearson Education, 2004
3. Structures and Abstractions. An introduction to computer science with Pascal by William I. Salmon, 1992, 1994 (12)
4. Computer Science: An Overview: International Edition, (10 ed), Pearson Higher Education, 2007.

Evaluation Schemes

Assignments	15%
Practical work	15%
Mid Exam	30%
Final Examination	40%

COURSE TITLE: COMPUTER ORGANIZATION & ARCHITECTURE
COURSE NUMBER: INSY 212 SAME AS INTE 212
CREDIT HOUR: 3
CO-REQUISITE: INTRODUCTION TO INFORMATION SYSTEMS

Course Description

This course introduces students to basic computer organization and architecture concepts. It covers: number systems, Boolean algebra, digital logic circuits and their design, simple machine architecture, genealogy of microprocessors, von Neumann architecture, the system bus model, data representation and manipulation, organization of instruction sets and program execution, microprocessor organization, memory organization, organization of input and output subsystems, I/O interface; instruction set design philosophies, parallel processing, symmetric multiprocessing and clustering; case study of at least two microprocessor families and other components of computing system.

Course Objectives

At the end of the course students should be able to:

- describe the genealogy of microprocessors
- describe the microprocessors used in personal computers
- describe the structure of the personal computer system
- describe the von Neumann programming model
- describe the structure of instruction sets and their effect on registers and memory contents
- use assembly language functionalities to do arithmetic and logical operations, manage program flow control and modular programming
- describe the input output organization of the computer system
- describe the memory organization of the computer system

Textbooks

1. Andrew S. Tanenbaum. 2005. Structured Computer Organization, (5th ed). ISBN-10 0131485211. 800 p.

References

1. Mano, M. and Kime, C. 2007. Logic and Computer Design Fundamentals, (4th ed), ISBN-10 013198928X. 607 p.
2. Computer systems. Architecture, Organization and Programming by Arthur B. Maccabe, 1993
3. John Hennessey and David Patterson: Computer Architecture: A Quantitative Approach, (4th ed), Morgan Kauffman Publishers, 2003.

Evaluation Scheme

Lab:	20%
Mid exam:	30%
Final exam:	50%

COURSE TITLE: PROGRAMMING I
COURSE NUMBER: INSY 222 SAME AS INTE 222
CREDIT HOUR: 4
PREREQUISITE: INTRODUCTION TO INFORMATION SYSTEMS

Course Description

This course is designed to introduce students to problem solving techniques using computers. Topics covered include problem solving using computers, algorithm development and representation, programming languages, program structure, basic program elements, expressions, statements dynamic memory management, user-defined data types, modular programming, recursion and file management.

Course Objectives

On completion of this course students should be able to:

- describe the problem solving process as applied in programming
- understand common data structures and algorithms, and be able to implement them;
- perform basic Java programming – Object-Oriented programming
- describe and exercise the Arithmetic and Logic operations implemented in Java
- implement the program flow control in software
- describe and implement the basic data structure elements in Java that serve as holding homogenous data primitives

Textbooks

Sanders K. E. and Andy Van Dam. 2005. Object-Oriented Programming in Java: A Graphical Approach, Preliminary Edition. ISBN-10 0321245741. 640 p.

References

1. Drozdak, Adam, Data Structures and Algorithms in Java, 2008, ISBN 10: 0534376681
2. IBM PC Assembly Language and Programming by Peter Abel, 2001 (1)

Evaluation Scheme

Lab project:	20 %
Mid-Term exam:	20 %
Quiz	10%
Final Examination:	40 %

COURSE TITLE: FUNDAMENTALS OF DATABASE SYSTEMS
COURSE NUMBER: INSY 311 SAME AS INTE 311
CREDIT HOUR: 3
PREREQUISITE: PROGRAMMING I

Course Description

This course introduces the students to the design and implementation of database systems. Topics covered include definition of a database and benefits of database systems, architecture for database systems, implications of file organization and storage structures, hierarchical and network data models, relational data model, data structures and integrity rules, database design, relational algebra and relational calculus.

Course Objectives

At the end of the Course students should be able to:

- explain the different models of database,
- design models from specifications and interpret them into relational tables,
- write statements for data creation and manipulation purposes,
- know how to optimize databases to the most efficient form,
- distinguish and use relational model and relational algebra,
- identify and fix the possible problems that may occur in securing data

Textbooks

1. Abraham Silberschatz, Henry F. Korth, S. Sudarshan. 2005. Database System Concepts (5th ed). ISBN-10 0071244763. 1024 p.

References

1. Ramez Elmasri, Shamkant B. Navathe. 2006. Fundamentals of Database Systems(5th ed). ISBN-10 0321369574.
2. Connolly T.M. and Carolyn E. Begg. 2009. Database Systems: A Practical Approach to Design, Implementation and Management, 5^e. ISBN-10 0321523067 1400 p.
3. Database Processing. Fundamentals, Design and Implementation by David M. Kroenke

Evaluation Scheme:

Quiz	10%
Mid Exam	30%
Lab Evaluation and Project Work	20%
Final Exam	40%

COURSE TITLE: DATA BASE SYSTEMS MANAGEMENT AND USE
COURSE NUMBER: INSY 312 SAME AS INTE 312
CREDIT HOUR: 3
PREREQUISITE: FUNDAMENTALS OF DATABASE SYSTEMS

Course Description

This course focuses on the client or user side of Database systems. It extends the knowledge in the previous course by adding concepts of database management and use. Topics to be covered are file and record organization, basics of query optimization, transaction management and database security. The course includes an overview of advanced database systems such as Object-Oriented and Object-Relational databases, active databases, deductive databases, multimedia and spatial databases, distributed databases. Current trends in DBMS is also covered.

Course Objectives

On completion of this course students should be able to:

- manage a database system..
- understand how to effectively organize and use databases
- identify the related issues with object-relational databases.
- explain basics of query optimization.
- understand transaction processing concepts.
- understand database recovery techniques.
- identify database security issues.

Textbooks

1. Connolly T.M. and Carolyn E. Begg. 2009. Database Systems: A Practical Approach to Design, Implementation and Management, 5th Ed.. ISBN-10 0321523067. 1400 p.

References

1. Ramez Elmasri, Shamkant B. Navathe , Fundamentals of Database Systems(4th ed) , USA, Addison-Wesley, 2004
2. Abraham Silberschatz, Henry F. Korth, S. Sudarshan. 2005. Database System Concepts (5th ed). ISBN-10 0071244763. 1024 p.
3. Microsoft Office Access 2003 Complete Concepts and Techniques by Shelly, Cashman, Pratt, 2006

Evaluation

Assignments and quizzes	20%
Mid-term	30%
Final Examination	50%

COURSE TITLE: INFORMATION SYSTEMS ANALYSIS & DESIGN
COURSE NUMBER: INSY 321 SAME AS INTE 341
CREDIT HOUR: 3
PREREQUISITE: INTRODUCTION TO INFORMATION SYSTEMS

Course Description

This course covers information systems theory. Topics include organization and management; types of information systems; roles in development; development life cycle; information systems development methodologies; approaches to development, requirements structuring, Object Technology; principles of modeling, principles of Object Orientation and systems development using the object technology and principles of modeling. An individual or team project involving systems analysis and design is also a major component of this course.

Course objectives

At the end of the course students should be able to:

- explain the theories and principles of systems analysis and design
- understand the concept of system thinking
- understand lifecycles of system development
- understand object oriented system analysis and design techniques
- analyze complex systems to structure them into manageable parts
- analyze and design small and medium scale systems

Textbooks

1. Hoffer, J. A. and J. F. George, Joseph S Valacich. Modern System Analysis and Design. 5th edition, 2007, 648 p. ISBN-10 0132240769.

References

1. Kendall K.E. & Kendall J.E. Systems Analysis and Design(7th ed), USA, 816 p.
2. Scott w. Ambler. The Object Primer 3rd ed. University of Cambridge press.2004
3. Ian Sommerville ,Software Engineering (8 ed), USA, Addison-Wesley, 2006

Evaluation

Class Exercises/Assignments	30%
Mid-term	30%
Final Exam	40%

COURSE TITLE: BUSINESS PROCESS MANAGEMENT
COURSE NUMBER: INSY 322
CREDIT HOUR: 3
PREPSEQUISITE: INTRODUCTION TO BUSINESS
MANAGEMENT

Course Description

Business Process Management (BPM) is directed at achieving three outcomes crucial to a performance-based, customer-driven firm: 1) clarity on strategic direction, 2) alignment of the firm's resources, and 3) increased discipline in daily operations. The course provides an overview of BPM as both a management discipline and as a set of enabling technologies, and establishes the foundation for the courses that follow. The main focus of this course on both understanding and designing business processes. Students will learn how to identify, document, model, assess, and improve core business processes. Students will be introduced to process design principles. The way in which information technology can be used to manage, transform, and improve business processes is discussed. Students will be exposed to challenges and approaches to organizational change, outsourcing, and inter-organizational processes.

Course Objectives

At the end of the course students will be able to:

- understand the key terms and concepts in BPM
- describe the major methodologies and techniques for implementing BPM
- model business processes
- assess business processes performance
- design business process improvements
- understand the role and potential of IT to support business process management
- understand how to support and manage business process change
- understand different approaches to business process modeling and improvement
- understand the challenges and risk concerning business process outsourcing
- use basic business process modeling tools
- simulate simple business processes and use simulation results in business process analysis

Textbooks:

Weske, M. 2007. Business Process Management: Concepts, Languages, Architectures, Springer, ISBN-10: 3540735216

References:

1. Jeston, John and J. Nelis. 2008. Business Process Management, 2nd edition:
2. Practical Guidelines to Successful Implementations. Butterworth-Heinemann.

Evaluation

- Team Project: 30%
- Classroom Assignments: 20%
- Final Exam: 50%

COURSE TITLE: PROGRAMMING II
COURSE NUMBER: INSY 331 SAME AS INTE 331
CREDIT HOUR: 3
PREREQUISITE: PROGRAMMING I

Course Description

This course is designed to provide an in-depth coverage of object-oriented programming principles and techniques. Topics include classes, data abstraction, information hiding, overloading; inheritance; polymorphism and exceptions handling.

Course Objectives

Upon completion of the course students should be able to:

- understand basic object oriented concepts such as object, class, abstraction, hierarchy modularity and encapsulation.
- understand, and be able to successfully carry out a project on the edit-compile-run cycle of software development in an appropriate software development environment.
- compare and contrast the two known programming paradigms such as structural programming and Object Oriented programming.
- use Java as a programming language.

Textbooks

Sanders K. E. and Andy Van Dam. 2005. Object-Oriented Programming in Java: A Graphical Approach, Preliminary Edition. ISBN-10 0321245741. 640 p.

References

1. Shildt, Herbert. 2006. Java 2: the Complete Reference(Osborn Complete Reference List), 7th Edition, ISBN-10 0072263855. 1024 p.
2. Cay S. Horstmann and Gary Cornell, Core Java 2 Volume I – Fundamentals (7th ed), USA, Prentice Hall PTR, 2004
3. Cay S. Horstmann and Gary Cornell, Core Java 2 Volume II - Advanced Features (7th ed), USA, Prentice Hall PTR, 2004
4. Java, How to Program , 8e, by Deitel and Deitel, 2009 1 copy

Evaluation Scheme

Lab project:	30 %
Mid exam:	30 %
Final Examination:	40 %

COURSE TITLE: PROJECT MANAGEMENT
COURSE NUMBER: INSY 342 SAME AS INTE 442
CREDIT HOUR: 3
PREREQUISITE: SYSTEMS ANALYSIS AND DESIGN

Course Description

The purpose of this course is to provide students with practical experience in the management of development projects. It deals with planning, organizing, staffing, controlling, and directing projects. It lays major emphasis on project planning, techniques for monitoring and controlling projects, quantitative methods and tools, and leadership issues in project management. A term project that involves the development of a project plan for a non-trivial project will be required. Students in this course will gain this experience by serving with a development team of IS and IT students. Each team will have approximately an equal number of IS and IT students.

Course Objectives

At the completion of the course the student will be able to:

- define a project goal and create the project charter
- create a feasibility plan and establish a priority list
- determine strategy and budget dollars
- work with management and define their role
- determine project expenses—including estimated required hours
- delegate responsibilities and manage project schedules
- implement a project management approach to tracking progress and implementing
- develop a project management system to track costs and schedule quality testing

Textbooks

Jack R. Meredith, Scott M. Shafer, Sutton, Margaret Sutton. 2007. Information Systems Project Management. ISBN-10 0975914650. 336 p.

References

1. Phillips, Joseph. 2004. IT Project Management: On Track from Start to Finish, 2nd ed. McGraw Hill, Osborne.
2. Lock, Dennis. 2007. Project Management, 9th ed. Gower.
3. Baine, Kenneth R. 2004. Integrated IT Project Management- A Model-Centric Approach. Artech House, Boston.

Evaluation Scheme

Project Work	70%
Final Exam	30%

COURSE TITLE: INTERNET PROGRAMMING I
COURSE NUMBER: INSY 412 SAME AS INTE 332
CREDIT HOUR: 3
PREREQUISITE: PROGRAMMING I

Course Description

This course offers an overview of the internet and world wide web. Topics include characteristics of web-based information systems; client-server architecture; web server and security, HTTP protocol; web page design and development; information architecture and visualization; static & dynamic pages and client-side programming using scripting languages (JavaScript, VBScript);

Course Objectives

At the end of the course students should be able to:

- understand the internet and World Wide Web(WWW)
- understand essence and application of web-based information systems
- analyze, design and develop small scale web-based information systems

Textbook:

1. Paul Dietel. 2007. Internet & World Wide Web: How to Program,4th Edition, ISBN-10 0131752429. 1424 p.

References:

1. Craig D. Knuckles, David S. Yuen, Web Applications: Concepts & Real World Design, John Wiley & Sons, ISBN 0-471-20458-7 (paperback) or 0-471-42929-5.
2. Thomas A. Powell, HTML & XHTML: The Complete Reference , McGraw-Hill
3. HTML Comprehensive Concepts and Techniques by Shelly, Cashman, Woods, Dorin, 2002 2 copies

Evaluation Scheme

Lab Project	20%
Class Exercises/Assignments	20%
Mid-term	20%
Final Exam	40%

COURSE TITLE: MULTIMEDIA SYSTEMS
COURSE NUMBER: INSY 422 SAME AS INTE 432
CREDIT HOUR: 3
PREREQUISITE: PROGRAMMING I

Course Description

Multimedia data has become an indispensable part of our daily life. It is also one of the critical applications in broad areas of use. In this course students will be introduced to the principles and current technologies of multimedia systems. The course includes the topics: introduction to multimedia and multimedia systems, multimedia data representation, multimedia applications, multimedia tools, hands on practice on multimedia system creation using tools, multimedia standards, communication requirements of multimedia data and multimedia information retrieval.

Course Objectives

At the end of the course students should be able to:

- understand principles and current technologies of multimedia systems,
- understand applications of multimedia systems in day to day life
- produce a multimedia presentation

Textbooks

1. Tay Vaughan. 2006. Multimedia: Making it Work, 7th ed. ISBN-10 0072264517.

References

1. Ralf Steinmetz and Klara Nahrstedt, Multimedia Fundamentals: Media Coding and Content Processing; Prentice Hall, 2007.
2. Ze Nian Li and M. S. Drew, Fundamentals of Multimedia, Prentice Hall, 2004.

Evaluation

Multimedia presentation	30%
Class Exercises/Assignments	20%
Mid-term	20%
Final Exam	20%

COURSE TITLE: INFORMATION AND SOCIETY
COURSE NUMBER: INSY 431
CREDIT HOUR: 3
PREREQUISITE: NONE

Course Description

This course covers information, information overload, computers and their use, the social system, and societal evolution. Topics include social impacts of information, physiological, psychological, cultural, and social interaction; the information economy (occupational changes, impacts on the work force, telecommuting), information economics (market structure and pricing, etc...), E-governance (computerization and democratization), computer crimes and security mechanisms, property rights, privacy, surveillance, and censorship. Issues such as regulation, the digital divide and ethics will be considered.

Course Objectives

Students will be able to:

- explore the world-wide web of data;
- select a problem domain, identify live web data sources, and use computational methods to represent, transform, and present information for human consumption,
- manage information in a shared environment;
- solve data-intensive problems involving computers, people and the Web.

Through this course students will be able to:

Textbook

Ethics in Engineering by Martin and Schinzinger, 1996.

References

1. Fuchs, Christian. 2008. Internet and society: social theory in the information age. Routledge, New York
2. Sally Wyatt; ebrary, Inc.; et al. 2000. Technology and in/equality questioning the information society. Routledge, London.

Evaluation Scheme

Assignments	15%
Two short presentations	10%
Written report	5%
Mid-Term Examination	20%
Final Examination	40%

COURSE TITLE: SYSTEMS AND NETWORK ADMINISTRATION
COURSE NUMBER: INSY 432 SAME AS INTE 452
CREDIT HOUR: 3
PREREQUISITE: DATABASE SYSTEMS MANAGEMENT AND USE

Course Description

This course covers software-specific concepts of systems and computer network administration. Topics include network basics, server management; network security; and network configuration and management. This course provides a practical problem solving approach to the field of Windows NT/2000, UNIX, and/or Novell Netware.

Course Objectives

At the end of the course, students will be able to:

- manage the day-to-day administrative tasks necessary to maintain a business computer network,
- create user and group accounts, profiles, and setting permissions,
- set up and administer a network printer,
- audit, backup and recovery, and monitoring resources,
- use software tools such as Microsoft Windows NT, UNIX, etc.

Textbooks:

B. A. Forouzan: Data Communications and Networking (3rd ed), 2003.

References:

1. W. Stallings: Data and Computer Communications (7th ed), Prentice Hall, , 2004.
2. J. F. Kurose and K. W. Ross: Computer Networking: A Top-Down Approach to the Internet (3rd ed), Pearson Education, Inc., 2005.
3. A. S. Tannenbaum: Computer Networks(4th ed), Prentice Hall, 2003.

Evaluation Scheme

Class Exercises/Assignments	20%
Practical lab work	40%
Final Exam	40%

COURSE TITLE: OPERATING SYSTEMS MANAGEMENT AND USE
COURSE NUMBER: INSY 441 SAME AS INTE 441
CREDIT HOUR: 3
PREREQUISITE: INTRODUCTION TO INFORMATION SYSTEMS

Course Description

This course introduces fundamental concepts, principles and types of operating systems. Topics include functions of operating systems, version management, installing and configuring operating systems to users. In addition, the course prepares students with practical skills for managing operating systems.

Course Objectives

At the end of the course students should be able to:

- explain basic concepts and functions of an operating system.
- explain why and how business environments matters in the choice of operating systems.
- demonstrate installing and configuring operating systems.
- manage users in a networked environment.

Textbooks

Andrew S. Tanenbaum. 2007. Modern Operating Systems (3rd ed). ISBN-10 0136006633.

References

1. William Stallings, Operating Systems: Internals and Design Principles (5th ed), Prentice Hall, 2005.
2. Abraham Silberschatz, P. B. Galvin and G. Gagne: Operating System Concepts (6th ed), John Wiley & Sons, 2001.
3. Understanding operating systems (5th ed.). Boston: Thomson Course Technology. ISBN: 1-4239-0160-6

Evaluation Scheme

Lab project:		30 %
Mid-term	:	30 %
Final exam		40%

COURSE TITLE: DATA COMMUNICATION AND COMPUTER NETWORKS
COURSE NUMBER: INSY 442 SAME AS INTE 322
CREDIT HOUR: 3
PREREQUISITE: INTRODUCTION TO INFORMATION SYSTEMS

Course Description

This course introduces the students to basic principles and techniques of data communication in computer networks. Topics covered are :application of computer networks; overview of the OSI and TCP/IP reference models, network types; network protocols; analog and digital signals, modulation; guided and unguided transmission media, encoding, multiplexing, synchronous and asynchronous communication, transmission impairments, connecting devices, error detection and correction, multiple access methods; network topologies; network security; network management and an introduction to wireless networks.

Course Objectives

Upon completion of the course students should be able to:

- understand basic communication concepts
- understand the concept of data encoding, data transmission and communication media sharing
- analyze different types of computer networks and network architectures
- understand the concept of path selection
- understand the various security threats and the security mechanisms to use

Textbooks

1. B. A. Forouzan. 2006. Data Communications and Networking (4th ed). ISBN-10 0071254420

References

1. 1. W. Stallings: Data and Computer Communications (7th ed), Prentice Hall, , 2004.
2. D. E. Comer and R. E. Droms: Computer Networks and Internets, with Internet Applications(4th Ed), Prentice Hall, 2003.
3. A. S. Tannenbaum: Computer Networks(4th ed), Prentice Hall, 2003.

Evaluation Scheme

Lab Assessment	20%
Class Exercises/Assignments	20%
Mid-term	20%
Final Exam	40%

COURSE TITLE: VISUAL PROGRAMMING
COURSE NUMBER: INSY 451
CREDIT HOUR: 3
PREREQUISITE: PROGRAMMING II

Course Description

This course covers the use of Visual Basic programming to customize programs or applications. Topics include visual programming concepts and tools; introduction to Visual Basic.Net; component development and reusability, designing and customizing forms, modeling tools, multi-user programming techniques; programming with DDE, OLE and calling procedures in DL and doing projects using VB.net. A project will call for designing and writing a program for a practical application.

Course Objectives:

Students should develop an understanding of the Visual Basic language and learn how to write programs including designing and customizing reports.

Textbook:

1. Halvorson, M. 2008. Microsoft Visual Basic Step. ISBN-10 0725625379. 546 p.

Evaluation:

1. Stephens, R. 2008. Visual Basic 2008 Programmers Reference. ISBN-10 0470182628. 1248 p.
2. Programming in Visual Basic. NET by Julia Case Bradley, Anita C. Millsbaugh, 2003
 - Project Assignment 30%
 - Mid Term Examination 30%
 - Final Examination 40%

COURSE TITLE: INTERNSHIP
COURSE NUMBER: INTE 452
CREDIT HOUR: 3
PREREQUISITE: COMPLETE THIRD YEAR

Course description and objective:

This course supplements the student’s academic program with experiential education. The internship experience will be guided by a learning contract outlining expectations and academic components. Three credit hours will be awarded for approved internships provided that all conditions of the learning contract are met. The internship will occur during the summer between the third and fourth year. The intern will work regular work days for two and a half months.

Completion of the following assignments is the basis for earning college credit:

1. **Daily journal:** Students are required to keep a daily journal of their job experiences. If possible it is typed and double spaced and submitted electronically to the Entrepreneurship and Management Internship Coordinator each Monday covering the prior week. If the student has no computer access, a copy must be taken to the Coordinator each Monday.
2. **Special project and report:** The host employer and HUC Internship Coordinator will coordinate to select a special project relevant to the company for assignment and completion by the student intern. Concurrent with completion of the special project, the intern will prepare an executive-level business report appropriate for submission to top management. The student will present his/her project to the other internship students, the HUC Internship Coordinator and a representative of the host employer.
3. **Executive interview summary:** Students will interview one senior level manager to understand his/her career and discuss career development. Students will summarize the interview in a one (1)-page written document with the business card of the manager attached
4. **Job Performance and Satisfactory Evaluations:** The focus of the Internship course is to develop practical career-related experience. Performance evaluations are completed by the host employer during the Internship course and upon completion of the Internship course. At least two performance evaluations are documented to form the basis for grade assignment and awarding of college credit.

Grading and College Credit: The Accounting Internship Course requirements are weighted as follows for assignment of final grade and credit:

Daily journals	40%
Special project and report	40%
Executive interview summary	10%
Job performance evaluation	10%

COURSE TITLE: E-COMMERCE
COURSE NUMBER: INSY 511 SAME AS INTE 511
CREDIT HOUR: 3
PREREQUISITE: NONE

Course Description

This course introduces students to the emerging theories and practices of E-commerce strategies. Strategies associated with both sides of the electronic commerce world are included: ecommerce solutions for existing companies and E-business concept development for venture startups. Students will study the role of E-systems and the internet in commerce. Application of Information Technology in business is also part of the class.

Course Objectives

At the completion of this subject, students should:

- be familiar with the different ways that electronic commerce can add business value to an organization;
- be able to list and analyze the key decision faced by an organization when establishing or updating a web presence;
- have an appreciation of the principles and use of key technologies applied in electronic commerce;
- understand the processes involved in doing business electronically; and
- be able to design and develop a good quality web presence for business purposes

Textbooks

1. Erfan Turban et. al., Electronic Commerce, 2008, Pearson Education, ISBN-10: 0132243305

References

1. Mc Garvey and Campanelli, Start Your Own E-Business, 2006, ISBN-10: 1932156744
2. E-Business and e-Commerce Infrastructure: Technologies Supporting the e-Business Initiative. Abhijit Chaudhury, Jean-Pierre Kuilboer. Published by Mc-Graw Hill Companies, 2002. ISBN: 0-07-247875-6.

Evaluation Scheme

Lab project:	20 %
Paper work:	50 %
Final Examination:	30 %

COURSE TITLE: DECISION SUPPORT SYSTEMS
COURSE NUMBER: INSY 512
CREDIT HOUR: 3
PREREQUISITE: INTRODUCTION TO BUSINESS MANAGEMENT

Course Description

This course is an overview of the fundamentals of decision making and the design and development of decision support systems to support decision making tasks in organizations. The course reviews models of individual and organizational decision making, types of decision support systems, knowledge management issues and provides an overview of a number of existing and emerging techniques that support decision making, such as statistical models, expert systems, artificial intelligence, executive support systems, group decision support systems, data warehousing and data mining.

Course Objectives

At the end of the course students will be able to:

- understand decision-making methods of perception, judgment, analysis, and choice at the individual and organizational levels,
- examine the initiation and authorization process for defining the scope of a project in order to enhance decision-making among project stakeholders,
- include qualitative methods that can validate project decision-making.

Textbooks

Seref M H., et al. 2007. Developing Spreadsheet-Based Decision Support Systems. ISBN-10 0975914650.

References

1. Organization for Economic Cooperation and Development (OECD). 2005. Statistics, knowledge and policy: key indicators to inform decision making. OECD, Paris.
2. Nunamaker, JF. 1996. Information systems – decision support systems and knowledge based systems. IEEE Computer Society Press, Los Alamitos, CA.

Evaluation Scheme

Continuous Assessment	50%
Final Exam	50%

COURSE TITLE: INFORMATION ASSURANCE AND SECURITY
COURSE NUMBER: INSY 521 SAME AS INTE 521
CREDIT HOUR: 3
PREREQUISITE: DATA COMMUNICATION AND COMPUTER NETWORKS

Course Description

The course will cover the historical background of security, fundamentals of Information Systems security, privacy and the importance of security for Information Systems. Additional topics include protection schemes, public and private key encryption techniques, security at different layers, malicious security threats (viruses, worms, Trojan horses) and web security.

Course Objectives

At the end of the course students should be able to:

- understand potential threats of information systems
- understand theories and principles of information security
- understand protection mechanisms and their strength and limitations
- demonstrate how to secure files and users access

Textbooks

Ciampa. 2009. Security Awareness: Applying Practical Security in Your World, ISBN-10: 1435454146.

References

1. S. Bosworth and M. E. Kabay, Computer Security Handbook(4th ed) , Willey Inc. , 2002.
2. D. Schweitzer, Incident Response, Computer Forensics Toolkit, Wiley, 2003.
3. S. Garfinkel, G. Spafford and A. Schwartz, Practical Unix and Internet Security (3rd ed), O'Reilly, 2003.

Evaluation Scheme

Lab project:	30 %
Mid exam:	30 %
Final Examination:	40 %

COURSE TITLE: MANAGEMENT INFORMATION SYSTEMS
COURSE NUMBER: INSY 522 SAME AS MAEN 342
COURSE CREDIT HOURS: 3
PREREQUISITE: INTRODUCTION TO BUSINESS MANAGEMENT

Course description:

This course examines information as an organizational resource, specifically the planning, control and development of computer-based and non-computer based information systems in business. Topics include: decision support systems, management, business application, systems design and implementation, and organizational and social impacts.

Course objectives:

Upon successful completion of this course, students should be able to:

- explain the theories and terminologies used in this course
- discuss why information systems are needed, what the components are, and how they are developed.
- implement the applications of E-commerce.
- distinguish the differences between the various specialized business information systems, such as management information systems and decision support systems.
- use the knowledge and skills to implement the phases of the system life cycle.
- discuss the human resources and societal implications of the information system profession.
- prepare a good term paper relevant for the course.

Textbooks

1. Laudon, Kenneth C. and Jane P. Laudon (2009), 11e, Management Information Systems: Managing the Digital Firm. 013607846X

References

- 1 O'Brien, James A. And G. Marakas, Management Information Systems, 2008, ISBN-10 0073376760
- 2 Management Information Systems by O'Brien, J. & Marakas,G., 2008

Evaluation

Project	30%
Mid-Term Examination	30%
Final Examination	40%

COURSE TITLE: COMPUTER MAINTENANCE AND TECHNICAL SUPPORT
COURSE NUMBER: INSY 532 SAME AS INTE 411
CREDIT HOUR: 3
PREREQUISITE: PHYSICS LAB

Course Description:

This course is designed to provide students with the fundamentals of configuring, installing, diagnosing, repairing, upgrading, maintaining, computers and their peripherals. The topics include: PC hardware configuration, preventative maintenance, customer interaction, virus protection, safety and networks and installation of operating systems and applications.

Course Objectives

At the end of the course students should be able to:

- apply standard safety procedures.
- correctly operate appropriate tools, equipment, and materials
- perform periodic maintenance on a computer workstation.
- demonstrate knowledge of computer components, i.e., power supplies, motherboards, memory, processors, hard drives, modems, and bus and port connections.
- understand and install appropriate operating systems and drivers.
- demonstrate knowledge of installation and maintenance of computer peripherals.
- understand and troubleshoot basic computer networks.
- to be able to manage time and to set priorities within the needs of the client or organization.

Textbooks

1. Jean Andrews, A+ Guide to Managing and Maintaining Your PC, Sixth Edition, Comprehensive, ISBN13: 9780619217587. 2006 edition, ISBN-10 0619217588.

References

1. Beisse, A Guide to Computer User Support for Help Desk and Support Specialists, Third Edition, Course Technology, (c) 2001, ISBN 0-619-21510-0

Evaluation Scheme

Lab project:	30 %
Practical Work:	70 %

COURSE TITLE: SENIOR PROJECT
COURSE NUMBER: INSY 542
CREDIT HOUR: 3
PREREQUISITE: NONE

Course Description

The purpose of this course is for students to practice what they have learned by applying what they have learned in a project. The student will select a topic in an application area, which must be approved by the Department of Information Systems, and write a project plan and then carry out the project. To gain experience in presenting information to a group, the project finishes with an oral report.

Course Objectives

At the completion of the subject, students should have gained experience in:

- applying the tools and techniques covered in prior Information Systems subjects;
- writing a project plan;
- selecting, planning, executing, managing, reporting on, documenting, and completing a substantial information systems project; and
- working with a support group of fellow students and an academic staff member.

Evaluation Scheme

- Project Work: 100 %

COURSE DESCRIPTIONS FOR ELECTIVE COURSES

COURSE TITLE: INTRODUCTION TO ARTIFICIAL INTELLIGENCE
COURSE NUMBER: INSY 501 SAME AS INTE 505
CREDIT HOUR: 3
PREREQUISITE: NONE

Course Description

This course introduces basic principles and current research topics in Artificial Intelligence. It includes a formal representation of real world problems, search of problem spaces for solutions, and deduction of knowledge in terms of logic and reasoning. Application of these methods are made to important areas of Artificial Intelligence including Expert Systems, language understanding, machine learning ,neural networks ,computer vision and robotics.

Course Objectives

On completion of this course students should be able to:

- describe the key components of the artificial intelligence (AI) field
- describe search strategies and solve problems by applying a suitable search method
- understand how agents reason
- understand the issues related to agent planning, handling uncertainty, learning from observation and communicate.

Text books:

1. Stuart J. Russell and Peter Norvig, Artificial Intelligence: Modern Approach (3rd edition), USA, Prentice Hall, 2009

COURSE TITLE: INTRODUCTION TO DISTRIBUTED SYSTEMS
COURSE NUMBER: INSY 502 SAME AS INTE 502
CREDIT HOUR: 3
PREREQUISITE: DATA COMMUNICATION AND COMPUTER NETWORKS

Course Description:

This course includes topics such as basic concepts in distributed systems, communication, synchronization, consistency and replication, security, distributed files systems and document based systems.

Course Objectives

At the end of the course students should be able to:

- understand concepts of distributed systems
- explain about remote procedure calls
- understand concepts in distributed file systems, transactions, consistency and data security.

Textbooks

A.S. Tanenbaum, Maarten Van Steem, 2006 Distributed Systems, Principles and Paradigms;

References

1. Distributed Systems, Concepts and design, G. Coulouries, J. Dullimore, Y. Kendberg
2. Distributed Systems, S.Mullender

Evaluation Scheme

Mid exam:	30 %
Assignments:	30 %
Final Examination:	40 %

COURSE TITLE: IT AND ECONOMIC DEVELOPMENT
COURSE NUMBER: INSY 503 SAME AS INTE 503
CREDIT HOUR: 3
PREREQUISITE: NONE

Course Description:

This course considers the implications of the “Information Age” for the majority of the world’s population that live in “developing” countries. The course considers answers to the following questions:- What professional and ethical issues are raised by the so called “Digital Divide?”; Does adoption of information technology lead to economic development; Can information technology support sustainable development?

This course combines a range of topics from information systems, the social sciences, and economics, as well as social and professional issues. It examines factors such as knowledge, place, time, capital, institutional relationships, learning, and policy in understanding and promoting technology-based economic development. Policies to promote high technology firms, technology development and transfer, and regional techno poles are examined.

Course Objectives

At the end of the course students should be able to:

- explain impact of IT in economic development
- understand factors dealing technology-based economic development
- understand polices that promote information technology transfer and development

Textbooks

M. Warschauer, Technology and Social Inclusion: Rethinking the Digital Divide, 2004, ISBN-10: 0262731718

References

1. Wilson, E. J. (2004). The information revolution and developing countries. Cambridge, MA: MIT Press.

Evaluation Scheme

Project paper:	40 %
Assignments:	10 %
Mid-Term	20%
Final Examination:	30 %

COURSE TITLE: SELECTED TOPICS IN INFORMATION
SYSTEMS
COURSE NUMBER: INSY 504
CREDIT HOUR: 2
PREREQUISITE: as per the content selection at the time of delivery

Course Description

The course describes up-to-date theories, principles and technologies in information systems that are not covered in the courses offered during the program. Topics studied vary from year to year depending on trends in the field.

Textbook/ Evaluation Scheme

It depends on the topic that is selected during course offering decisions

COURSE TITLE: SYSTEM SIMULATION & MODELING
COURSE NUMBER: INSY 505 SAME AS INTE 506
CREDIT HOUR: 3
PREREQUISITE: SYSTEMS ANALYSIS AND DESIGN

Course Description

The course presents a holistic view of the modeling and simulation enterprise by starting from a general methodology which stresses the generic, application-independent aspects of modeling formalisms and their implementation. Topics covered include a basic introduction to modeling and simulation, model syntax and semantics, system specification hierarchy, model classification, state charts, pseudo-random generators, input/output analysis, discrete event world views, process interaction, discrete event system specification, animation of simulation results, continuous-time models, solvers, sorting, population dynamics, system dynamics and object-oriented modeling of physical systems

Course Objectives

At the end of the course, students will:

- understand modeling and simulation from methodology to implementation,
- apply modeling and simulation in real world problems

Textbooks

1. Banks J, John Carson, Barry Nelson, and David Nicol. 2009. Discrete event System Simulation (5th Ed). 640 p. ISBN-10 0136062121.

References

1. Bernard P. Zeigler, Herbert Praehofer, and Tag Gon Kim, Theory of Modeling and Simulation (2nd edition),USA, Academic Press, 2000.
2. Paul A. Fishwick, Simulation Model Design and Execution, USA, Prentice Hall, 1995.

Evaluation Scheme

Lab project:	30 %
Mid exam:	20 %
Final Examination:	50 %

COURSE DESCRIPTIONS FOR SUPPORT COURSES

COURSE TITLE: PRINCIPLES OF MARKETING
COURSE NUMBER: MARK 212 **RESPONSIBILITY:MAEN**
CREDIT HOUR: 3
PREREQUISITE: NONE

Course description:

This course presents information concerning the practices and basic principles of marketing from origin to the ultimate consumer. Topics include marketing mix, buyer behaviour, organization, planning, channels of distribution, and promotion, the objectives and strategy of promotion mix with the emphasis on advertising, public relations and sales promotion in Ethiopia. Communication is essential to marketplace transactions.. In deviations from perfect competition, marketers have to communicate more than to establish, sustain, and grow their business. The marketing management perspective explains how communication strategies can be applied to satisfy Ethiopian consumers and achieve organizational goals. Students will work in teams on the proficiency task of developing a marketing plan.

Course objectives: This course will enable students to:

- develop a viable marketing plan, based on team research.
- explain customer driven marketing strategy; and customer relationship management.
- appraise and evaluate buyer behavior in consumer and business markets.
- present an overview of how social responsibility and ethics relate to marketing
- summarize the salient concepts of global marketing
- discuss market segmentation, targeting, and positioning for competitive advantage
- integrate the elements of product management strategy, including product lines, the product mix, product life cycle, and branding
- summarize the elements of new product development strategy
- explain the marketing of services and nonprofit organizations
- explain distribution strategy and supply chain management as they relate to channel strategy, wholesaling and logistics.
- summarize the concepts and approaches of pricing strategy
- explain management of customer relationships
- describe communication processes and differentiate between various promotion mixes
- explain major decisions in advertising, publicity, public relations and sales promotion.

Textbooks

1. Principles of Marketing 12thEd. 2007, Philip Kotler, Gary Armstrong, ISBN10: 0132390027, Pearson Higher Education

Reference

1. Strategic Advertising Management, L.Percy, R. Elliott, 2009, ISBN 0199532575
2. John Egan, Marketing Communications, Cengage Learning Business Press, 1st edition (2007), ISBN-10: 1844801217, ISBN-13: 978-1844801213

Evaluation Scheme:

Continuous Assessment: assignments, tests, quizzes, presentations	25%
Midterm exam	20%
Project work	25%
Final Exam	30%

COURSE TITLE: INTRODUCTION TO ECONOMICS
COURSE NUMBER: ECON – 204 RESPONSIBILITY: CROSSCUTTINGS
CREDIT HOUR: 3
PREREQUISITE: NONE

Course Description

This course introduces and explores a variety of macroscopic and microeconomic topics, including: supply and demand, market equilibrium, elasticity, decision making by producers and consumers, production cost, market structures, public policy, the labour market, distribution of income, environmental policy, market efficiency and government intervention, aggregate supply and demand, market equilibrium, Gross Domestic Product, employment, income, prices, major schools of economic thought, fluctuations, growth, monetary policy, fiscal policy, the national debt, international trade, and international finance.

Course Objectives

Students should be able to:

- state the laws of supply and demand and explain the concept of equilibrium.
- identify and explain the basic principles of economics.
- enumerate and explain the three economic choices.
- provide a definition of gross domestic product and describe the four components.
- define fiscal policy and explain how it can be used to cope with fundamental economic problems.
- explain how monetary policy can be used to cope with fundamental economic problems.

Textbooks

1. Macroeconomics by Blanchard, 2006
2. Microeconomics by Pindyck and Rubinfeld, 6th ed. 2004

References

1. Mankiw, H. G. 2008. Essentials of Economics, 5th ed. 584 p. ISBN-10 0324590024.
2. O' Sullivan, A., F. Sheffrin and S. Perez. 2009. Survey of Economics: Principles, Applications and Tools, 4th ed. 456 p. ISBN-10 0136093809.
3. Rohlf, William D. 2007. Introduction to Economic Reasoning (7th Edition). (Addison-Wesley Series in Economics).
4. Economic Concepts. A Programmed Approach by Bingham and Henry Pope, 1993
5. Kohler's Microeconomics by Heinz Kohler, 1992
6. Macroeconomic Analysis by Edward Shapiro, 1999

Assessment/Evaluation

Assignments/Quizzes	30%;
Mid examination	30%;
Final examination	40%.

COURSE TITLE: PRINCIPLES OF ACCOUNTING I
COURSE NUMBER: ACCN 211
CREDIT HOURS: 3
PREREQUISITE: NONE

Course Description:

This course is an introduction to basic principles of accounting theory and practice. Topics covered include accrual basis accounting, the accounting cycle, preparation of financial statements for both service and merchandising business enterprises, and internal controls. Other topics include accounting for cash, receivables, payroll, inventories, fixed assets and current liabilities.

Course Objectives

Upon successful completion of this course, students should be able to:

- analyze, journalize, and post business transactions.
- prepare a multiple-step income statement, an owners' equity statement, and a classified balance sheet.
- analyze existing account balances, prepare end-of-period adjusting and closing entries and a postclosing trial balance.
- account for cash and petty cash including internal controls over cash.
- account for merchandising companies including costing and internal control over inventory.
- account for property, plant, and equipment; accounts receivable; and current liabilities.

Textbook

Weygandt, Kieso, and Kimmel. Accounting Principles.8e, ISBN10: 0471980193.

References

1. Owen, Glenn, Using Excel and Access2007 for Accounting, 2e, 2009, ISBN10: 0324594399
2. Fundamental Accounting Principles, 18th Edition, Wild, Larson, Chiappetta, 2007, ISBN 978-007-3266480. Chapters 1 – 11.
3. College Accounting by Heintz and Parry, 2005
4. Accounting Theory by Harry Wolk et al., 6th Ed., 2004

Evaluation Scheme

Assignments	15%
Practical work	15%
Mid Exam	30%
Final Examination	40%

COURSE TITLE: INTRODUCTION TO ENTREPRENEURSHIP
COURSE NUMBER: MAEN 211
CREDIT HOUR: 3
PREQUISITE: None

Course description

This course is an introduction to entrepreneurship. Topics include economic, social and political climate; demographic, technological and social changes; skills, challenges, and rewards of entrepreneurship. This course will provide a basic understanding of the entrepreneurial or new venture process. Students will discuss the critical role that opportunity recognition and creation plays in that process. Several class exercises will assist students to identify their own personal goals, and their unique skills and competencies related to the entrepreneurial process. Students will also develop a simple business plan, which will enable them to examine how entrepreneurs and investors create, find, and differentiate robust, money-making opportunities from “good ideas.”

Course objectives

Upon successful completion of this course, students should be able to:

- develop a simple business plan.
- evaluate their own entrepreneurial tendencies and create a new venture.
- explain the role of entrepreneurship and new venture creation in economic development.
- evaluate and explain the real-world of entrepreneurship and the entrepreneurial mindset.
- understand the process of opportunity recognition and analysis.
- clearly articulate a new venture’s business model.
- recognize the importance of teams in the entrepreneurial process and the pros and cons. associated with different behavior types when starting a new venture.
- be familiar with the financial issues associated with new venture start-ups.
- develop an understanding of entrepreneurship as a business behavior worldwide.

Textbooks

Kuratko, Donald. Entrepreneurship: Theory, Process and Practice, 08, ISBN10: 0324390913.

References

1. Strategic Advertising Management, L.Percy, R. Elliott, 2009, ISBN 0199532575
2. How to Write a Business Plan, Ethiopian Chamber of Commerce, 2004.
3. Entrepreneurial Small Business, Katz, Jerry and Richard Green, 2008, 848 p.ISBN-10: 0073405063

Evaluation Scheme:

Continuous Assessment	25%
Midterm exam	20%
Project work	25%
Final Exam	30%

COURSE TITLE: INTRODUCTION TO BUSINESS MANAGEMENT
COURSE NUMBER: MAEN 212
CREDIT HOUR: 3
PREREQUISITE: INTRODUCTION TO ENTREPRENEURSHIP

Course description:

This course focuses on the basic concepts and principles of management, the functions of planning, organizing, staffing, directing and controlling and their relationships to key issues in management practices, such as leadership and motivation. Nature and role of supervisory management, functions of supervisor and labor relations, inspection and effective communication are also discussed.

Course objectives:

Upon successful completion of this course, students should be able to:

- Explain the characteristics of management
- Identify the evolution of management theories and practices
- Define management functions i.e. planning, organizing, leading and controlling
- Distinguish organization, theories of organizations and organizational structures
- Apply the fundamental of staffing, leadership theories and practices in the process of management.

Textbook

J. Burrow et al., Business Principles and Management, 2007

References

1. How to Write a Business Plan, Ethiopian Chamber of Commerce, 2004.
2. Public Relations. Strategies and Tactics. By Dennis L. Wilcox, Glen T. Cameron, 2006.
3. This is PR. The Realities of Public Relations by Newsom, Turk, Kruckeberg, 2004
4. Green to Gold. How smart companies use environmental strategy to innovate, create value, and build competitive advantage by Daniel C. Esty and Andrew S. Winston, 2008

Evaluation Schemes

Assignments and Practical work	20%
Mid Exam	30%
Final Examination	50%

COURSE TITLE: LOGISTIC AND SUPPLY CHAIN MANAGEMENT
COURSE NUMBER: MAEN 312
CREDIT HOUR: 3
PREQUISITE: NONE

Course description:

Logistic Management has a primary focus on the cost effectiveness of all processes in and between organizations. Most organizations recognize that world class performance in operations is essential for competitive success and long-term survival. This course will introduce students, the future business leaders, to the key concepts and tools that you can apply to design, plan, and improve the organizations' logistics and operations. This IT-related course examines the creation and distribution of goods and services in both the service and manufacturing sectors. Topics include location analysis, distribution models, inventory control models, scheduling and work design systems, and statistical process controls.

Course objectives:

Upon successful completion of this course, students should be able to:

- explain the strategic role of logistics and its competitive advantage for organizational survival.
- explain the relationships between the operations function and other functional areas of a business such as marketing, finance, and information systems and how they can work together to achieve the business strategy.
- apply relevant quantitative models and IT-applications to attack logistical challenges
- appraise real-life business situation and suggest solution alternatives as related to operations management tools/techniques.
- analyze business processes to uncover problems and improvement opportunities.
- measure the performance of the operations from different aspects, such as productivity, flexibility, quality, workflow, and response time, etc.
- provide new designs to improve the existing operations.
- contact external partners to improve the logistical processes that are part of the business relation

Textbooks:

1. Young and Scott, Essentials of Operations Management, 2009, ISBN-10: 1412925709

References

1. Business Logistics/Supply Chain Management by Ronald H. Ballou, 2004
2. H.M. Visser and A.R. van Goor, Logistics, Principles and Practice, Noordhoff Uitgevers B.V., 1st edition (2006), ISBN10 9020733044, ISBN13 9789020733044
- 3 Alan Rushton, Phil Croucher, Peter Baker (2006), The Handbook of Logistics and Distribution Management, 3rd edition, Publisher: Kogan Page Ltd, ISBN: 9780749446697

Evaluation

Project	30%
Mid-Term Examination	30%
Final Examination	40%

COURSE TITLE: ORGANIZATIONAL BEHAVIOR
COURSE NUMBER: MAEN 422
CREDIT HOUR: 3
PREREQUISITE: INTRODUCTION TO BUSINESS MANAGEMENT

Course description

The course is based on the premise that in today's turbulent business environment, it is imperative that Human Resource professionals understand organizational behavior and how it contributes to organizational effectiveness. Highlighting best practice principles, the course develops the student's understanding of the theories and methodologies inherent in these practices and engages the students in discussions on the challenges facing Ethiopian organizations.

Course objectives:

Upon successful completion of this course, students should be able to:

- diagnose organizational problems to ensure the problems are identified and the applicable strategies and techniques selected
- determine the interventions, activities and programs required to increase organizational effectiveness
- identify the strategies and techniques utilized to enhance organizational performance
- characterize the importance of leadership in managing organizational challenges

Textbook

1. Stephan P. Robbins and Timothy A. Judge, Organizational Behavior, 13th International edition, 2008, ISBN10: 013207964X, ISBN13: 9780132079648, Pearson Education (US)

References

1. Stephan P. Robbins and Timothy A. Judge, Organizational Behavior, 13th International edition, 2008, ISBN13: 9780132079648, Pearson Education (US).
2. Joel Marcus, Organization and Management, an International Approach, Noordhoff Uitgevers B.V., 1st edition (2007), ISBN10 9001577040, ISBN13 9789001577049
3. Organizational Behavior. Understanding and Managing People at Work by Donald D. White and David A. Bednar, 1986

Evaluation Scheme:

Continuous Assessment: assignments, tests, quizzes, presentations	25%
Midterm exam	20%
Project work	25%
Final Exam	30%

COURSE TITLE: FINANCIAL MANAGEMENT
COURSE NUMBER: ACCN 332
CREDIT HOUR: 3
PREREQUISITE: PRINCIPLES OF ACCOUNTING I

Course description:

Financial Management is an introductory finance course focusing on the financial decision making principles and methods used by corporations. Major financial decisions include capital investment decisions, financing decisions, capital structure decisions dividend policy decisions, and working capital decisions. Financial management provides basic knowledge on the financial forecasting and coordination of finance in the corporate business. This course examines the financial goals of a corporation with an emphasis on value creation. Additional topics include capital budgeting techniques, valuation of securities, risk management and short-term financial management are also addressed in the course. Students will work in teams preparing a consulting report.

Course objectives:

Upon successful completion of this course, students should be able to:

- use financial information to improve their decisions as investors and/ or as managers of corporations and to learn and apply tools that maximize firm value.
- use the basic tools for financial analysis of the firm
- understand the time value of money and its use in the evaluation of securities
- assess the value of the firm and to take capital budgeting, capital structure and dividend policy decisions that maximize the value of the firm
- interpret financial statements
- evaluate and judge the use of corporate financial information in decision making
- use financial management knowledge in preparing a consulting report.

Textbooks

1. Block S.B., Hirt G.A. (2008), Foundations of Financial Management, McGraw-Hill Higher Education, 657 pages, ISBN-13: 978-0073295817

References

1. Fundamentals of Financial Management, 12th Ed. Brigham, Houston, 2009. South-Western College Publishers, 752 p., ISBN-13: 978-0324597707
2. Ross S.A., Westerfield R.W., Jaffe J. (2005). Corporate finance. New York : McGraw-Hill Irwin.
3. Essentials of Corporate Finance by Ross, Westerfield, Jordan, 1996

Evaluation Schemes

Assignments	20%
Practical and Project work	30%
Mid Exam	20%
Final Examination	30%

COURSE TITLE: MATHEMATICS I
COURSE NUMBER: MATH 203
RESPONSIBILITY: CROSSCUTTINGS
CREDIT HOUR: 4
PREREQUISITE: NONE

Course Description

The course included linear algebra and quadratic, exponential and logarithmic functions, finite mathematics including matrices, linear programming, logic, sets, counting, probability.

Course Objectives

This course is designed for students of computer science who will take calculus. To support computer studies, the topics include counting techniques, matrices, recursion, linear programming, counting and probability. To support preparation for calculus, the topics include graphing, functions, slopes and maximums and minimums. Technology, such as computers and graphing calculators, will be used frequently.

Textbook

Raymond A. Barnett et al., College Mathematics for Business, Economics, Life Sciences, and Social Sciences, 11th Edition, 2008

References:

1. Nathan Niles. Calculus with Analytic Geometry, 2nd ed, Prentice Hall.
2. Mathematical Handbook of Formulas and Tables 2nd ed. by Murray R. Spiegel and John Liu, 1999
3. Applied Mathematics. For the Managerial, Life and Social Sciences by S.T. Tan, 2007
4. A Custom Edition of Calculus for Business, Economics, Life Sciences and Social Sciences by Barnett, Ziegler and Byleen, 1999
5. Differential Equations with Boundary Value Problems, S. Hollis, 2002
6. Multivariable Calculus, F. Beatrous and C. Curjel, 2002

Evaluation Schemes

Mid-Term:	30 %
Quiz 1:	15 %
Quiz 2:	15%
Final Examination:	40 %

COURSE TITLE: MATHEMATICS II
COURSE NUMBER: MATH 204
RESPONSIBILITY:CROSSCUTTING
CREDIT HOUR: 4
PREREQUISITE: MATHEMATICS I

Course Description

This course covers basic calculus and is designed for students not intending to major in mathematics, the physical sciences or engineering. The topics covered will include: limits, derivatives, relation to graphing, integration, multi-variables and applications.

Course Objectives

At the end of the course students should be able to:

- Evaluate finite and infinite limits using a graph.
- Use the limit definition to find the derivative of a function.
- Find the equation of a tangent line to a function at a point.
- Find derivatives using the differentiation rules for: sum, difference, product, quotient, power, constant multiples, and composition (chain rule).
- Find the derivative of various types of functions including: polynomial, rational, radical, trigonometric, inverse trig, exponential, and logarithms.
- Find the derivative of an implicit function.
- Graph a function using first and second derivatives, identifying intervals of increasing, decreasing, and concavity, as well as relative minimums and maximums and inflection points.
- Find integrals of functions.
- Extend understanding to multi-variable problems.
- Solve an optimization word problem using calculus.

Textbooks

Raymond A. Barnett et al., College Mathematics for Business, Economics, Life Sciences, and Social Sciences, 11th Edition, 2008

References:

1. Nathan Niles. Calculus with Analytic Geometry, 2nd ed, Prentice Hall.
2. Mathematical Handbook of Formulas and Tables 2nd ed. by Murray R. Spiegel and John Liu, 1999
3. Applied Mathematics. For the Managerial, Life and Social Sciences by S.T. Tan, 2007
4. A Custom Edition of Calculus for Business, Economics, Life Sciences and Social Sciences by Barnett, Ziegler and Byleen, 1999
5. Differential Equations with Boundary Value Problems, S. Hollis, 2002
6. Multivariable Calculus, F. Beatrous and C. Curjel, 2002

Evaluation

Class work, quizzes	30%
Mid-term	30%
Final Exam	40%

COURSE TITLE: INTRODUCTION TO PROBABILITY AND STATISTICS
COURSE NUMBER: STAT 301 **RESPONSIBILITY: CROSSCUTTING**
CREDIT HOUR: 3
PREREQUISITE: MATHEMATICS I

Course Description

This course is designed to provide students an introduction to the basic science of statistics. Students will develop a useable understanding of research design, the organization of data, measures of central tendency and variability, central tendency theory, descriptive and inferential statistics, parametric and nonparametric tests, and basic test assumptions. Primarily, students will be introduced to the fundamental ideas of data collection and presentation, populations and samples; the presentation and interpretation of data, descriptive statistics, linear regression, and inferential statistics including confidence intervals and hypothesis testing. Basic concepts are studied using applications from economic ideas, education, business, social science, and the natural sciences. Also included is a mathematical introduction to probability theory including the properties of probability; probability distributions; expected values and moments, specific discrete and continuous distributions; and transformations of random variables

Course Objectives

At the end of the course, the students will be able to:

- acquire knowledge on statistical methods,
- collect and organize facts for statistical analysis,
- make interpretations of data collected, and
- make statistical inferences based on statistical analyses

Textbooks

Freedman, David, Purves, Pisani. 2006. Statistics. WW Norton & Co (ed). ISBN-10: 0393930432.

References

1. Berenson , Mark L; Levine, David M. and Krehbiel, Timothy C. (2008) Basic Business Statistics, 11th ed., Prentice Hall, USA
2. Brase, Charles Henry and Brase, Corrinne Pellillo (2006) Understanding Basic Statistics, 4th ed., Houghton Mifflin Company, New York 2 copies
3. Lind , Douglas A.; Marchal, William G. and Wathen, Samuel A. (2007) Basic statistics for business and economics with student CD (CD-ROM), 6th ed., McGraw-Hill/Irwin, New York

Evaluation

Class Exercises/Assignments/Quizzes	30%
Mid-term	30%
Final Exam	40%

COURSE TITLE: PHYSICS LABORATORY
COURSE NUMBER: PHYS 202 **RESPONSIBILITY: CROSSCUTTING**
CREDIT HOUR: 3
PREREQUISITE: MATHEMATICS I

Course Description:

The purpose of this course is to reinforce learning of physics theory by a series of practical laboratory exercises. The topics covered include 1-d and 2-d motion, force and motion, energy and momentum, circular motion, fluids, heat and temperature, wave motion, electric charge, electric potential and current, magnetism, reflection and refraction of light and mirrors and lenses.

Course Objectives:

The objectives are to reinforce past learning by practical exercises in important areas of classical physics, to improve the students problem solving skills and to improve the students skill in working with instruments and other technical equipment.

Textbook:

J.D. Wilson et al., College Physics, 6th Edition, 2007

Reference

1. Physics for Scientists and Engineers Vol. 1, Tipler and Mosca, 5th Edition, 2004,
2. Physical Science, 6th Edition, Bill Tilery, 2005
3. Physics for Scientists and Engineers, Vol. 2, Paul Tipler, 2003

Assessment/Evaluation

Laboratory Reports	30%
Mid-Term Examination	30%
Final Examination	40%

COURSE DESCRIPTIONS FOR CROSSCUTTING COURSES

COURSE TITLE: CIVIC AND ETHICAL EDUCATION
COURSE NUMBER: CEED 201 **RESPONSIBILITY: CROSSCUTTING**
CREDIT HOUR: 3
PREREQUISITE: NONE

Course Description

This fundamental objective of Civic and Ethical Education is producing good citizens with higher civic qualities. Good citizen who are well aware of their rights and responsibilities as well as endowed with various type civic virtues such as active participation, tolerance, civic mindedness etc have a lot to contribute in the process of democratization and development of their own state. In view of this, this course is designed to familiarize students with basic themes and concepts of civic and ethical education, constitutionalism, Democracy, Human Rights and some other pertinent issues in achieving the basic goal of the subject matter. The very nature of civic education requires active participation from the part of students in various ways such as forwarding original arguments, participating in class discussions, debates, Presentation etc. . Thus students are highly expected to act accordingly for the successful delivery of the course. Professional ethics relates to fulfilling work responsibilities, honesty in financial matters and contributing to improvements in the workplace and profession. Ethical behavior also relates to society and the environment and includes tolerance, obeying the rule of law, respecting the rights of others, respecting the environment and practicing a sustainable lifestyle.

Course Objectives

The students will be able to:

- impart civic knowledge on various issues such as on meaning and definition of civics and ethics, constitutionalism, democracy, and human rights.
- help students clearly understand their rights and responsibilities and then exercise their rights and discharge their responsibilities.
- develop civic attitude such as patriotism, civic mindedness, active participation and tolerance.
- develop civic skills such as accurate decision making, expression of oneself clearly and logically and conflict resolution.
- understand the importance of professional ethics and to commit to ethical behavior in all aspects of a professional career.
- understand how to live in a diverse society by demonstrating tolerance and an appreciation of other cultures.
- learn to respect the environment and live in a sustainable manner.

Textbook:

1. Civic and Ethical Education, Alamirew G/Mariam, 2005.

References

1. Chekki Don. 1999. "Participatory Democracy in Action" International Profiles of Community Devt. New Delhi.
2. The Constitution of the Federal Democratic Republic of Ethiopia, August 21, 1995.
3. Universal Declaration of Human Rights: Adopted by the UN 1948.

Assessment/Evaluation

Community project	30 %
Mid-semester	30%
Final examination	40 %

COURSE TITLE: INTRODUCTION TO LOGIC
COURSE NUMBER: PHIL 201
RESPONSIBILITY:CROSSCUTTING
CREDIT HOUR: 3
PREREQUISITE: None

Course Description

This course attempts to introduce the fundamental concepts of logic and methods of logical reasoning. The purpose of this course is to develop in learners the skills required to construct sound arguments of their own and the ability to critically evaluate the arguments of others; cultivate the habits of critical thinking and develop sensitivity to the clear and accurate use of language. Topics to be covered in this course include: the nature of argument, definitions, fallacies, syllogistic logic, propositional logic and rules of propositional logic.

Course objectives

After completion of this course students will be able to

- Evaluate the implication and rules of equivalence
- Define logic.
- Compare and contrast sound and unsound arguments
- Set criteria for lexical definitions
- Appreciate critical thinking & morality, social and political philosophy.
- Synthesize the rules for propositional logic

Testbook

Introduction to Logic, Copi and Cohen, Student Ed., 2005, 688 p. ISBN10: 0131898349

References

1. Being Logical: A Guide to Good Thinking, D. McInerney, 20005, 160 p. ISBN10: 00812971159.
2. Morris ,Raphael, Cohen; Ernest, Nagel,. 2002. An introduction to logic and scientific method. Simon Publications, Safety Harbor, FL.

Evaluation Scheme

Continuous Assessment	50%
Final Exam	50%

COURSE TITLE: SOPHOMORE ENGLISH
COURSE NUMBER: FLEN 201 **RESPONSIBILITY: CROSSCUTTING**
CREDIT HOUR: 3
PREREQUISITE: NONE

Course Description:

A course designed to develop college-level reading and writing skills. It includes critical analysis of and written response to readings, as well as academic vocabulary, grammar and mechanics. It focuses on the steps of the writing process: planning, organizing, writing, peer review, revising, and editing while writing essays in various rhetorical patterns of organization and development. There will be in-class essays and others prepared outside of class. Students will write every day in class. In addition, students will improve listening and speaking skills through listening to lectures and taking notes, class discussion, giving short talks and responding to questions.

Course objectives:

This course will enable students to:

- understand and critically analyze class readings, as well as their textbooks
- improve their academic vocabulary, written and spoken grammar and mechanics usage
- improve their overall writing skills: being able to write clearly and correctly, make points and support them with examples and explanations.
- write under time pressure in answering essay examination questions.
- understand oral academic lectures and basic English conversation.

Textbook:

1. Evergreen: A Guide to Writing with Readings, 8th Edition. Susan Fawcett. 2007. Houghton-Mifflin/ Cengage

References:

1. Real Writing WITH Reading, Susan Anker, 2004, ISBN-10: 0312405219

Assessment/Evaluation

Tests: reading, grammar, vocabulary	20%
Writing assignments:	40%
Class participation in discussion	10%
Final exam, including writing	30%

COURSE TITLE: PROFESSIONAL WRITING
COURSE NUMBER: FLEN 202 RESPONSIBILITY: CROSSCUTTING
CREDIT HOUR: 3
PREREQUISITE: FLEN 201, SOPHOMORE ENGLISH

Course Description

A course extending use of the writing process to longer essays based on analysis of readings, through awareness of audience, purpose and diverse viewpoints. Additional writing will be based on readings and research in students’ professional fields, incorporating credible evidence through quotations, paraphrase and summary, according to MLA/APA standards. Students will learn to distinguish between opinion, facts and inferences and to use argument and persuasion. Students will work in teams on a proficiency task, writing a marketing plan and presenting it to the class.

Course Objectives:

Students will be able to:

- write essays with a clear thesis, logical points to support the thesis, and evidence based on library and Internet research, using MLA/ APA documentation.
- avoid plagiarism by incorporating this evidence using documentation.
- improve their writing and proofreading skills through participating in peer review.
- write clear and concise reports and papers appropriate to their field of study, using library and Internet research. Business students will write business letters, memos, resumes, reports, and a business plan.
- use technical writing styles and formats: reports, proposals, analysis of technical articles, and learn the appropriate vocabulary used in their field.
- use improved speaking and presentation skills through class and small group discussions, and an oral presentation based on the final writing.
- develop and write a marketing plan.

Textbooks:

1. *Evergreen: A Guide to Writing w. Readings*, 8th Ed. Susan Fawcett 2007. Houghton-Mifflin (now Cengage)
2. *Business Writers’ Handbook*. 8th Ed , Alred, Gerald J, Brusaw, Charles, and Oliu, Walter. 2006. Bedford-St. Martins. 590 p.. ISBN: 9780312352684
3. *Handbook of Technical Writing*, 9th ed. MacMillan. Alred, Gerald J, Brusaw, Charles, Oliu, Walter. ISBN: 9780312057336

References

1. *Technical Communication*. Michael Merkel, 9e. ISBN9780-312485979 Bedford St.M.
2. *Writing in the Disciplines: Supplement*, Tom Jehn, Jane, 2007, ISBN10: 0312452640

Evaluation Scheme

Essays:	30%
Business/Technical writing assignments, including Project	50%
Final Assignment- Writing 10% Oral Presentation 10%	20%

COURSE TITLE: COMMUNICATION AND PRESENTATION SKILLS
COURSE NUMBER: FLEN 301 **RESPONSIBILITY:** CROSSCUTTING
CREDIT HOURS: 3
PREREQUISITE: PROFESSIONAL WRITING

Course Description:

This course is designed to improve students' speaking and listening skills, understanding of turntaking, and other conventions and strategies in English conversation through discussion and role play. They will give short talks, planned and impromptu, and receive feedback. Through group assignments and presentations, students will improve their ability to discuss controversial or difficult topics in a respectful manner and tone: listening for understanding, then presenting their views - in conversation, to solve a business problem, or to persuade. As a final project, students will research an area of interest in their field and write a paper on it, using properly documented sources, and then make a final oral presentation to the class using AV equipment. Questions and answers will follow each presentation.

Course Objectives:

Students successfully completing the course will have:

- developed a concern for audience and understand the importance of psychological approaches to the solution of business problems through skilled communication;
- the ability to use a variety of communication strategies, and know when to use them;
- developed presentation skills, oral and written, with or without AV equipment.
- developed an ability to apply critical thinking and decision-making skills to business
- developed an ability to work effectively with other people in small groups or teams
- learned to listen for understanding
- the ability to understand and negotiate differences in communication between oneself and people from other cultures and those with viewpoints disagreeing with one's own
- the ability to give and receive feedback that will improve one's own and others' communication

Textbook:

1. Guide to Managerial Communication. 7thEd Munter, Mary. Upper Saddle River, NJ,Prentice Hall 2005 ISBN: 0131467042
2. Public Speaking; and Audience Centered Approach, 6e, S.A. Beebe and S.J.Beebe, 2006

References:

Business Communication: Building Critical Skills 2nd Ed,

Assessment/Evaluation

Classwork: discussions, role plays, short talks	20%
Assigned group and individual presentations	20%
Project work: business plan	30%
Quizzes:	20%
Final Exam	10%

COURSE TITLE: INTRODUCTION TO COMPUTER APPLICATIONS
COURSE NUMBER: COMP 201 **RESPONSIBILITY:** CROSSCUTTING
CREDIT HOUR: 3
PREREQUISITE: NONE

Course Description

This course is a broad introduction to the use of computers as tools for creativity, communications and organizing information. In addition to learning the technical fundamentals of computer use, students build skills in researching information, making appropriate ethical choices about the use of computers, and using technology to learn on their own and pass your new skills on to others.

The role of the computer as a communications tool will be central to this course. All students will be given computer accounts to maintain files. We will also emphasize the use of the Internet as a tool for finding information and the use of word processing, presentation software and image editing to organize and communicate ideas.

Topics will include computer hardware components, how the personal computer works and computer applications including word processing, spreadsheets, presentations, database and internet. Students are expected to learn to type and to practice exercises using MS Office.

Course Objectives

The students will be able to:

- familiarize themselves with components of computers and windows personal computers and operating systems
- use Microsoft Office as tools for writing, analyzing and presenting information
- use of information technology to assist you in other coursework
- use the internet for communications, research
- create, edit and share pictures
- creating online and paper publications and graphics using computers
- understand ethical and responsible use of computer technology

Textbooks

1. Shelly Gary B. et al. 2007. Microsoft 2007: Introductory Concepts and Techniques, Windows XP Edition. 1224 p. ISBN-10 141884327X

References

- 1 Andy Channele, Beginning Open Office 3- from Novice to Professional, 2008, ISBN10: 1430215909
- 2 Preston, John et al. 2008. Computer Literacy for IC3 – 2007
- 3 Update. 400 p. ISBN-10 0135038529.
- 4 Using Excel & Access for Accounting 2007 by Glenn Owen, 2007
- 5 Advanced Excel for scientific data analysis by Robert de Levie, 2004
- 6 Microsoft Office Word 2003. A Professional Approach by Deborah Hinkle, 2005
- 7 Beginning Open Office 3 from Novice to Professional by Andy Channele, 2009

Assessment/Evaluation

Assignments	50%,
Mid exam	20%,
Final exam	30%

COURSE TITLE: GENERAL PSYCHOLOGY
COURSE NUMBER: PSYC 201 RESPONSIBILITY: CROSSCUTTING
CREDIT HOUR: 3
PREREQUISITE: SOPHOMORE ENGLISH

Course Description

The introductory survey course explores the scientific study of human nature, behavior, and cognitive processes. The major areas of psychological study will be reviewed including history, biology, memory, learning, development, personality, abnormal and social psychology. Emphasis will be placed on applying psychological principles and data to life experience.

The course is also geared towards helping students conceptualize the psychological foundations of human behavior in all occupations. It is also the application of the principles and concepts in overcoming various kinds of human and environmental barriers for effective relationship.

Topics to be covered include motivation, emotion, knowledge retention, group dynamics and worker efficiency, sensation and perception, personality, and development of attitudes. Students will work on a proficiency task, developing a personal statement of goals and values.

Course Objectives

Upon satisfactory conclusion of the course, students will be able to:

- understand human behavior and relationship in different professions and life at large,
- be apply knowledge gained in the areas of business, government and education,
- familiarize themselves with group and individual decision-making,
- exercise effective human and environmental relationships.
- use their knowledge of psychology in developing a personal statement of goals and values

Textbooks:

Kalat, James. 2008. Introduction to Psychology, 8th ed. Wadsworth Pub.
04955102881.

References:

1. Weiten, Wayne and Diane Helpert. 2007. Psychology: Themes and Variations: with Concept Charts. Briefer Edition, 7th ed. Thomson-Wadsworth pub. 631 p. ISBN 10: 0495100587.
2. Psychological Research, Methods for Discovery and Validation, by A.C. Vadum, N.O. Rankin, 1998 (1)
3. Psychology: Careers for the 21st Century, by the American Psychological Association, 2000
4. (9) Innovative Approaches to Health Psychology:
5. Prevention and Treatment: Lessons from AIDS. by M.A. Chesney, M.H. Antoni, 2002
6. Psychology, 7e, by John Santrock, 2005 (1)

Assessment/Evaluation

Assignments	20 %
Project, practical work	30%
Mid-semester	20%
Final examination	30 %

COURSE NAME: LEADERSHIP SKILLS
COURSE NUMBER: LEAD 501 **RESPONSIBILITY: CROSSCUTTING**
CREDIT HOUR: 3
PREQUISITE: NONE

Course description:

The purpose of this course is to encourage you to carefully analyze responsibilities and commitments in the context of leadership for the common good and for purposeful change. Students will come to understand the concepts of relational and servant-leadership and how they differ from traditional leadership theories. The course includes the study of leadership as well as the application of leadership theories, concepts, and skills. Students will also develop their leadership potential through the completion of personal and leadership self-assessments, values exploration, and leadership skill practice through course activities.

This course addresses the responsibility of a leader for business, society and himself. What will be the legacy of the professional leader? What difference does he make in all the networks in which he is participating? What is his basic attitude toward all the stakeholders? These kinds of questions are the core theme of this course. Leadership will be combined with stakeholder management and current thinking about the role of communities in the business world.

Course Objectives

Students should be able to:

- Explain their personal opinion about stewardship’
- Reflect on his/her personal effectiveness as a leader;
- Perform as a transparent leader in his/her own networks

Textbook:

1. Peter Northouse, Leadership: Theory and Practice, 5th Edition, 2009, ISBN-10 1412974887
2. Kouzes and Posner, The Leadership Challenge, 4th Edition, 2003, ISBN-10: 0787984922

Reference:

- 1 Kouzes and Posner, The Leadership Challenge, 4th Edition, 2003, ISBN-10: 0787984922
- 2 The Leadership Challenge by Kouzes and Posner, 2003
- 3 Motivating Yourself for Achievement, by A.R. Bell, D.A. Smith, 2003 (10)
- 4 Focus on Success, by Dr. Rita Davis, Dr. Aaron Thompson, 2001 (1)
- 5 Leadership, by Dr. J.Clifton Williams, 1986 (1)

Assessment/Evaluation

Leadership activities	20%
Leadership Self- Assessment	20%
Mid-Term Examination	30%
Final Examination	30%