Hope University College

Faculty of Information Science

Department of Information Systems

Curriculum

January, 2011
Addis Ababa

Table of Contents

1. 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 systems (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 hope university college 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. Departmental Vision, Mission and Objectives

2.1 Vision   Statement

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 thus prepares highly skilled and qualified graduates who can accomplish various tasks in the field.

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 Objectives

The general objective of the IS program is to equip graduates with the theories and practices of modern business information systems and services at the national, regional and international levels. The program will enable 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 majoring in this field of study 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;
- Develop expert knowledge of IT-based information systems engineering/development and management;
- Instill knowledge of the economic, social, and strategic values of information;
- Make students understand and be able to use the analysis, design and management techniques used in various user-oriented information systems.
- Enable students design and develop information systems for business oriented application, and
- Provide a sound basis for further research in Information Systems.

3. Graduate Profile

All HOPE UNIVERSITY COLLEGE graduates shall exhibit the following profiles:

3.1 General Profile

Integrity and Personal Accountability: appreciating and internalizing high integrity and taking responsibility for one's actions at work and in society.

Self-regulation: instilling attitudes for self-development through lifetime learning, initiative taking and self-correction.

Intellectuality: working scientifically, using analytical skills, to develop and carry out research that is valuable to the country's needs and development, writing and presenting one's findings in clear and coherent manner and by so doing contributing to knowledge.

Competence: capacity to apply the knowledge transmitted and add value in one's role in organizations.

Leadership: playing a leading role in organizations and making a difference with team work, respect of people, exceptional integrity, motivation and commitment.

3.2 Professional Profile

3.2.1. General Knowhow

The graduates of the program will have knowledge in the following foundational areas of IS:
- 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.

3.2.2. Specific Know How

The graduates shall have the competencies 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;
- 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;

3.2.3. Transferable Skills

Graduates will be equipped with transferable skills to:
- Work in teams in information systems projects and systems development;
- Have good communication skills with business people and
- Have self-management skills.

3.2.4. Attitudinal and Values Competency

The graduates will
- Appreciate professionalism in their area of work.
- Have passion about their professional engagement.
- Have a positive and responsive attitude towards the value of information resources.
- Have personal confidence in doing their jobs.
- Be self critical and endeavor constantly to reform themselves so as to have a difference in their professional roles.
- Work with others exhibiting high respect, cooperative spirit and a serving attitude.
- Take initiatives and prepare themselves for both employment and self employment.

3.3 Program Profile

In the Department of Information Systems at HOPE UNIVERSITY COLLEGE, 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 or self-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. Teaching Philosophy and Methodology

4.1 Teaching Philosophy

Based on the mission of HOPE UNIVERSITY COLLEGE and the outcomes of the discussions with relevant stakeholders, the following elements constitute the philosophy of the curriculum:
- Excellence in applying scientific knowledge in a professional setting.
- Continual interaction between the faculty, students and professional learning environments to enable competence.
- Integration of theory and practice to bring about excellent professionals.
- Ongoing contact with the private and public sectors and other stakeholders to develop a curriculum that is relevant, competetive and value adding.
- The development of competencies as an indispensablet outcomes of the curriculum.
- The reinforcement of teaching with coaching to effectuate holistic student development.

4.2 Teaching Methodology

Competency based education which is a student-centered methodology emphasizing theory; skills, work scene interface and personal development will be exercised. In this interaction, there shall be class room lectures, laboratory activities, application exercises in the private sector. Students will also engage in presentations, group projects, which reflect actual situations in business or industry.

Competency based education 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 standardsof Hope University College.

The educational program will be characterized by increasing complexity. Knowledge, skills, attitude and comptencies will be tested at several levels during all semesters. 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 tools to explore available knowledge and develop an intellectual maturity for better judgement, leadership and knowledge ability.

5. Assessment Methods

5.1 Student Assessment

A student's achievement level for a course shall be assessed principally by examinations to gage content ingestion and by assignments, laboratory tests and projects to assess competency. Furthermore, some credit shall be given for participation in class. Ongoing assessment by way of tests shall help in identifying where a student is and in helping a student to catch up.

5.1.1. The Grading System
The grading system is a five scale assessment ranging from A to F as 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

5.2 Program Assessment

To guarantee the quality and standard of the program, the Department:

- Provides on-the-job training upgrading the academic qualification of the staff as needed.
- Gathers feedback from students, employers and graduates as deemed necessary and uses the feedback to improve the curriculum.
- Has prepared and has in place rules governing delivery and assessment of courses.
- Performs regular evaluation of the program based on the current trends in the field and the country's skilled manpower need
- Periodically acquires appropriate textbooks/references, laboratory equipment, software applications, and so forth.
- Prepares a course syllabus for all courses offered in the department in order to standardize the course content.
- Carries out regular evaluation of the staff

6. Admission Requirements of the Department

A candidate will be eligible for admission if he/she fulfills the minimum admission requirement set forth by the Ministry of Education for the year and shows passion for learning and determination to take advantage of the academic opportunities at the University College as stipulated in the charter.

7. Duration of the Study

The duration of study for the Degree of Bachelor of Science in Information Systems is four years.

8. Degree Nomenclature
The degree offered after successful completion of the program is called:
- In English – "Degree of Bachelor of Science in Information Systems"
- In Amharic – "የ ሳይንስ ባችለር ዲግሪ በኢንፎርሜሽን ሲስተምስ"

9. Graduation Requirements

Graduating students shall be awarded the "Bachelor of Science Degree in Information Systems''
if they fulfill the following requirements:
- An attainment of a minimum of 141 credit hours
- An attainment of a minimum Cumulative Grade Point Average of 2.00
- An attainment of a minimum Cumulative Grade Point Average of 2.50 in major courses
- An absence of F, NG, and I in any course grading.

10. Course Coding

All the Information Systems course start with the prefix INSY representing **IN**formation **SY**stems followed by three digits.

- ✓ The first digit represent the year in which the course is delivered.
- ✓ The middle digit signifies the categorization of courses in the program. The following categories together with their codes are identified to cluster the courses:

    0: Basics Courses

    1: Programming

    2: Database and IR

    3: Systems

    4: Hardware, Networking and Operating Systems

    5: Special

The last digit indicates the semester in which the course is offered:

- Odd last digit shows that the course is offered in the first semester
- Even last digit shows that the course is offered in the second semester.

Remark:

- The supportive courses take their code numbers from the owner departments.
- The above rule of course coding does not bind cross cutting courses.

11. Quality Assurance

The university college shall have a section for Quality Assurance as an internal audit of the academic program. The director of this section shall ensure quality by monitoring and evaluating academic programs and achievements on a regular basis using set benchmarks of academic excellence.

11.1. The internal scheme of performance audit shall enable constant renewal and relevance in the university college. The audit would review the actual outcomes of the content and pedagogy of disciplines by departments, courses, programs and also student competencies.

11.2. Though the established goals, objectives and desired outcomes of the university college would be important benchmarks of the audit, the evaluation efforts, being focused on value adding features, may point to the revisiting of certain objectives and activities of the curriculum.

11.3. In this way, the university college will be made aware of what it needs to change and make the necessary adjustments to stay abreast of the latest developments of knowledge. In the end, the curriculum is intended to develop graduates who demonstrate proficiency in general knowledge, communication, critical thinking, contextual competence, aesthetic

sensibility, professional identity and ethics, leadership capacity, scholarly concern for improvement and motivation for continuing learning.

11.4. The curriculum anticipates a qualitative change in the mental and spiritual capacities of students. In this regard, every attempt will be made to transform the capacities of students to a level that would make them change makers. The evaluation will track these outcomes and assess the qualitative changes gained in each student.

11.5. Considering the danger of internal evaluation from the standpoint of inbreeding and defensive pretensions by all concerned, internal evaluations will be counterbalanced by external ones. These would be openly discussed for subsequent adjustments.

The department shall do a review of the program after four years of implementing this curriculum by collecting feedback from employers and graduates of the program. This review 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 works (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. Resource Requirements

12.1 Teaching Staff

To the extent that the quality of education to be provided is primarily dependent on the skill and excellence of its staff members, Hope University College shall engage outstanding faculty members from within country and abroad in teaching.

12.2 ICT Laboratory

HOPE UNIVERSITY COLLEGE shall avail adequate computer terminals for students and faculty to enable on line learning and reading, share knowledge and experiences and work with various software that contribute to one's professional development. In such laboratory, one shall also get assistance in digital connections and system's use.

12.3 Library Facilities

Students will have access to a spacious and well stocked library. Computers will be available in the library to provide students with the facility for writing and with Internet Connectivity for access to e-books and on-line learning solutions. Students shall use computerized catalog for instant access to the resources in the library.

12.4. Tutorial Service for a Course Taught

12.4.1. The faculty member of a course is the TUTOR of his/her students.

12.4.2. To enable the tutoring, the faculty member shall designate office hours and inform his students of the same. The faculty member is expected to be in his office during the hours designated.

12.5. Guidance and Counseling

12.5.1. The office of student life shall provide guidance in a number of areas that contribute to the character development of students focusing on themes such as interpersonal relations, personal acceptance and care, life goals, survival skills, work ethics, relations with the opposite gender, community responsibility, right assertiveness, handling grievance and personal crisis, tolerance, reconciliation, time management, self assessment, etc. in an open ended and non judgmental manner.

12.5.2. The office of student life shall avail counseling service to those students that exhibit emotional burden, are at a loss, have a hard time focusing on their studies and responsibilities and show difficulty in relating to others. If the mental state of a student requires professional help, the student shall be told to seek professional help at his expense. Severe cases shall be allowed to take off a semester or a year.

12.5.3. As counseling revolves around trust, a female counselor shall be available for women and a male counselor for men. Peer counseling as well as peer discussions will also be advanced to facilitate the growth and discovery processes in a non-judgmental way.

12.5.4. All counseling communications will be confidential.

12.5.5. The university college shall do its best to reduce impersonality and the kind of atomization that comes from large crowds. While the architecture of the university college is designed to help in this regard by giving ample opportunities for students to

interact with one another, every effort shall be made to provide a sense of community that encourages belongingness, involvement and high spirits.

12.5.6. Common problems shall addressed by the university college and remedies sought as quickly as possible so that unaddressed problems do not cause more harm than what exists.

13. Class Size

To enable manageable faculty attention to students, convenience of learning and the continuous assessment that shall be applied, the optimal class size of the university college shall be:
- 30 students for courses in a regular class,
- 100 students for lecture type courses,
- 30 students for laboratories and workshops.

14. Program Structure

The Information Systems program is designed to be completed within eight semesters. Each semester shall have 18 weeks of regular classes.

There shall be one internship program two and a half months before the end of the third academic year. During such period, students will have a chance to work in an actual work setting using their competency.

The courses in the program are major, supportive and cross cutting courses. The major courses are compulsory and shall be 96 credit hours for one to graduate.

The major, supportive and cross cutting courses are presented below.

List of Courses for Information Systems

Table 1: List of Major Courses.

Course No.	Course Title	Cr Hrs	Lect. Hrs	Lab Hrs*
INSY 201	Introduction to Information Communication Technology	4	3	3
INSY 212	Fundamentals of Programming	4	3	2
INSY 242	Computer Architecture and Organization	3	3	0
INSY 311	Object Oriented Programming	4	3	2
INSY 312	Internet Programming I	3	2	2
INSY 314	Data structure and Algorithm Analysis	3	2	2
INSY 322	Fundamentals of Database Management Systems	3	2	2
INSY 331	Structured System Analysis and Design	3	3	0
INSY 340	Operating Systems	4	3	2
INSY 411	Internet Programming II	3	2	2
INSY 412	Visual Programming	3	1	4
INSY 421	Advanced Database Management Systems	3	2	2
INSY 423	Introduction to Information Storage and Retrieval	3	3	0
INSY 432	Multi Media Systems	3	3	0
INSY 433	Object Oriented System Analysis and Design	3	3	0
INSY 434	Introduction to Artificial Intelligence	3	2	2
INSY 435	Business Process Management	3	3	0
INSY 441	Data Communication and Computer Network	4	3	2
INSY 442	Systems and Network Administration	3	2	2
INSY 452	Information Systems Project Management	3	3	0
INSY 502	Information and Society	3	3	0
INSY 531	Management of Information Systems and Services	3	3	0
INSY 534	Decision Support Systems	3	3	0
INSY 542	Computer Maintenance and Technical Support	3	1	4
INSY 551	Internship	3	0	6
INSY 552	Senior Project	3	0	6
INSY 553	E-Commerce	3	3	0
INSY 554	Information Assurance and Security	3	3	0
	Total	**89**	**67**	**45**

Remark*: 1 Credit hour is equivalent to 1 lecture hour or 2 hours of laboratory sessions.

Table 2: List of Major Elective Courses

Students are supposed to select two courses out of the following list.

Course No.	Course Title	Cr Hrs	Lect. Hrs	Lab Hrs
INSY 503	IT and Economic Development	3	3	0
INSY 504	Selected Topics in information Systems	3	3	0
INSY 521	Data Mining and Warehouse	3	2	2
INSY 522	Knowledge Management	3	3	0
INSY 536	Expert System	3	2	2
INTE 541	UNIX system administration and support	3	2	2
	Total	**6**	**4/5/6**	**0/2/4**

Table 3: List of Supportive Courses

Course No.	Course Title	Cr. Hrs.	Lect. Hrs.	Lab Hrs.
ACCN 211	Principles of Accounting	3	3	-
ECON 202	Microeconomics	3	3	-
MAEN 214	Introduction to Small Business Management and Entrepreneurship	3	3	-
MAEN 422	Organizational Behavior	3	3	-
MATH 203	Mathematics I	4	3	
MATH 204	Mathematics II	4	3	-
PHYS 201	Applied Physics	3	2	2
STAT 301	Introduction to Probability and Statistics	3	3	-
	Total	**26**	**23**	**2**

Table 4: List of Cross-Cutting Courses

Course No.	Course Title	Cr. Hrs.	Lect. Hrs.	Lab Hrs.
CEED 201	Civic and Ethical Education	3	3	-
FLEN 201	Sophomore English	3	3	1
FLEN 202	Professional Writing	3	3	1
FLEN 301	Communication, Presentation Skills	3	3	1
MAEN 441	Leadership Skills	3	3	-
PHIL 201	Introduction to Philosophy(Logic)	3	3	-
PSYC 201	General Psychology	3	3	-
	Total	**21**	**21**	**3**

Table 5: Minimum Credit Hour Requirement Summary

Course Type	Total Credit Hours
Major Courses	89
Major Elective Courses	6
Supportive Courses	26
Cross-Cutting Courses	21
Grand Total	**142**

15. Semester Course Break-Down

Year	Semester I		
	Course No	**Course Title**	**Cr.Hrs**
1	CEED 201	Civic and Ethical Education	3
	MATH 203	Mathematics I	4
	INSY 201	Introduction to ICT	4
	FLEN 201	Sophomore English	3
	PHYS 201	Applied Physics	3
		Semester Total	**17**
	Semester II		
	Course No	**Course Title**	**Cr.HrS.**
	INSY 232	Computer Organization and Architecture	3
	MATH 204	Mathematics II	4
	PHIL 201	Introduction to Logic	3
	FLEN 202	Professional Writing	3
	INSY 212	Fundamentals of Programming	4
		Semester Total	**17**

Year	Semester I		
	Course No	**Course Title**	**Cr.Hrs.**
2	INSY 331	Structured Systems Analysis and Design	3
	ACCN 211	Principles of Accounting – I	3
	ECON 202	Microeconomics	3
	FLEN 301	Presentation and Communication Skills	3
	INSY 311	Object Oriented Programming	4
	Semester Total		**16**
	Semester II		
	Course No	**Course Title**	**Cr.Hrs.**
	STAT 301	Introduction to Probability and Statistics	3
	INSY 312	Internet Programming I	3
	INSY 314	Data structure and Algorithm Analysis	3
	PSYC 201	General Psychology	3
	INSY 340	Operating Systems	4
	INSY 322	Fundamentals of Database Management Systems	3
	Semester Total		**19**

Year	Semester I		
	Course No	**Course Title**	**Cr.Hrs.**
	INSY 421	Advanced Database Management Systems	**3**
	INSY 441	Data Communication and Computer Network	**4**
	MAEN 422	Organizational Behavior	**3**
	INSY 433	Object Oriented System Analysis and Design	**3**
	INSY 411	Internet Programming II	**3**
	INSY 423	Introduction to Information Storage and Retrieval	**3**
		Semester Total	**19**
3			
	Semester II		
	Course No	**Course Title**	**Cr.Hrs.**
	INSY 412	Visual Programming	**3**
	INSY 442	Systems and Network Administration	**3**
	INSY 452	Information Systems Project Management	**3**
	INSY 414	Introduction to Artificial Intelligence	**3**
	INSY 422	Multi Media Systems	**3**
	INSY 435	Business Process Management	**3**
		Semester Total	**18**

INSY 551   **Internship (Offered during the summer of third year)**   **3**

Year	Semester I		
	Course No	**Course Title**	**Cr.Hrs.**
	INSY 553	E-Commerce	**3**
	INSY 531	Management of Information Systems and Services	**3**
	INSY XXX	Elective I	**3**
	MAEN 441	Leadership Skills	**3**
	MAEN 214	Introduction to Small Business and Entrepreneurship	**3**
		Semester Total	**15**
4			
	Semester II		
	Course No	**Course Title**	**Cr.Hr**
	INSY 502	Information and Society	**3**
	INSY 534	Decision Support Systems	**3**
	INSY 554	Information Assurance and Security	**3**
	INSY 542	Computer Maintenance and Technical Support	**3**
	INSY XXX	Elective II	**3**
	INSY 552	Senior Project	**3**
		Semester Total	**18**

16. Course Descriptions and Course Objectives for Major Courses

Course Title: **Introduction to Information and Communication Technology**
Course Number: **INSY 201 same as INTE 201**
Credit Hour: **4**
Prerequisite: **None**

Course Description

This course provides an overview of Information and Communication Technology as an introduction. Topics include the development of computers, data representation, logical organization of a computer system, computer software, computer hardware, computer networking and communication, problem solving using computers, operating systems (single and multi-user) and the windows environment. Moreover the course discusses components of information systems and their type. This course will be supported by a practical laboratory sessions where students are exposed to hands-on experience in using computers. Specifically they will work on Microsoft Windows operating system followed by office applications (like MS-Word, MS-Excel) and other useful and software tools and applications.

Course Objectives

On completion, students will be able to
- Explain what IT and ICT are and how they are used as tool for development
- Understand the components of modern technological infrastructures such as relevant hardware, software, networks, telecommunications and internet systems
- Discuss what information system is and its types
- Know how to use Microsoft windows operating systems
- Use Microsoft application software

Text Books

Shelly, Cashman and Vermatt, Discovering Computers 2004/2003/2002, Thomson Course Tech., 2004/2003/2002. [6]

References

1. Rainer, Turban & Potter, Introduction to Information Systems, John Wiley & Sons, 2007,
2. June Jamrich Parsons and Dan Oja, Computer Concepts, 5th edition, Thomson Course Tech., 2004
3. Williams, Sawyer and Hutchinson, Using Information Technology, 3rd edition, McGrawHill,1999
4. Zimmerman, Information Technology Applications, 2007, Thomson Course Tech.
5. Keyboarding & Information Processing, 1997, South Western Educational Publishing

Evaluation Scheme

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

Course Title: **Computer Organization & Architecture**
Course Number: **INSY 242** **same as** **INTE 342**
Credit Hour: **3**
Prerequisite: **Introduction to Information Communication Technology**

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:
- Discuss the genealogy of microprocessors
- Understand the workings microprocessors used in personal computers
- Explain the structure of the personal computer system
- Conceptualize and differentiate the Von Neumann model vs Harvard architectures
- Describe the structure of instruction sets and their effect on registers and memory contents
- Describe the input output organization of the computer system
- Describe the memory organization of the computer system

Text Books

Morris M. Mano, Computer Systems Architecture, 3rd Ed., Prentice Hall

References

1. Andrew S. Tanenbaum, Structured Computer Organization, 5th ed., 2006, Pearson Education Inc. [1]

2. M. Mano & Kime C., Logic & Computer Design Fundamentals, 3rd Ed., 2004, Prentice-Hall Inc. [0]

3. John Hennessey & David Patterson, Computer Architecture: A Quantitative Approach, 4th Ed., 2003, Morgan Kauffman Publishers [1]

4. William Stallings, Computer Organization & Architecture: Designing for Performance, 5th Ed., 1996, Prentice-Hall Inc. [0]

Evaluation Scheme

Assignment:	20%
Mid Exam:	30%
Final Exam:	50%

Course Title: **Fundamentals of Programming**
Course Number: **INSY 212** **same as** **INTE321**
Credit Hour: **4**
Prerequisite: **Introduction to Information and Communication Technology**

Course Description

Introduction to programming principles and concepts focusing on structured programming and problem solving will be dealt in this course. The structured programming approach will be practically experienced with the C++ programming language. Problem solving techniques, simple algorithm design, testing and debugging techniques, and documentation standards will also be covered. The C++ syntactical elements and their semantics will also be learnt for the student. This includes but not limited to elementary operators, data types, control structures, user-defined and library functions, basic input/output, sequential files, arrays and structures. This course will be appropriate for students with little or no programming experience, but comfortable using computers with modern GUI-based operating systems. These concepts will be demonstrated in laboratory session.

Course Objectives

On completion of this course students should be able to:
- Apply the knowledge acquired in previous courses appropriately
- Assimilate the way a programmer thinks while mapping real world problems into computer programs
- Explain the various techniques of writing computer programs
- Apply the knowledge of writing, editing, compiling, running and debugging programs
- Explain and demonstrate steps involved in program development
- Apply the simple C++ data types, operators, and constructs in programs and explain how they are represented in the machine
- Apply the structured programming constructs: sequence, selection and iteration in solving problems
- Perform elementary interactive input and output operations;
- Apply, define and use the structured C++ data types: arrays, strings, structures in applications drawn from mathematics, the sciences, and other areas;
- Use text files to record and retrieve information in elementary applications;
- Demonstrate the ability of writing well-documented, user-friendly programs of short to medium length.

Text Books

Joel Adams & Larry Nyhoff, An Introduction to Computing, 3rd ed., Prentice Hall, 2003
References
1. .Walter Savitch, Problem Solving with C++, 5th & 6th editions, Pearson Education Inc.,2005/2009
2. Steve Oualline, Practical C++ Programming, O'Relly & Associates Inc., 2nd Edition, 1997
3. Steven Prata, C++ Primer Plus, 3rd ed., Sams Publishing,1998
4. D.S Malik, C++ Programming: Program Desing including Data Structures, Thomson Course Tech., 3rd ed., 2007
5. Tony Gaddis, Stardard Version of Starting Out with C++, 4th ed., 2005
6. Deitel & Deitel, C++ How to Program, Prentice Hall, 1994

Evaluation Scheme

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

Course Title: **Fundamentals of Database Systems**
Course Number: **INSY 322**   **same as**   **INTE 321**
Credit Hour: **3**
Prerequisite: **Fundamentals of Programming**

Course Description

This course exposes 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. In the lab session student will write sql statements to practice DDL and DML.

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,
- 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
- Use sql statement to create and manipulate database and its relations

Text Books

Abraham Silberschatz, Henry F. Korth, S. Sudarshan. 2005. Database System Concepts (5th ed).

References

1. 1. Ramez Elmasri, Shamkant B. Navathe. 2006. Fundamentals of Database System s(5th ed). ISBN-10 0321369574.
2. 2. Connolly T.M. and Carolyn E. Begg. 2009. Database Systems: A Practical Approach to Design, Implementation and Management, 5e.
3. 3. Database Processing. Fundamentals, Design and Implementation by David M. Kroenke
4. 4. Ronald R. P. & Ryan K.S., Teach Yourself SQL in 24 Hours, 2nd Ed., Sams Publushing, 2000
5. 5. Peter Rob & Carlos Coronel, Database Systems: Design Implementation and Management, 3rd Ed., Thomson Course Tech. 1997
6. 6. Richard T. Watson, Data Management: Database and Organizations, 4th Ed., Jhon Wiley & Sons, 2004
7. 7. David M. Kroenke et el, Database Processing, Prentice Hall, 11th Ed, 2010

Evaluation Scheme

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

Course Title: **Advanced Database Management Systems**
Course Number: **INSY 421** same as **INTE 421**
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, and distributed databases. A current trend in DBMS is also covered. This course is supported by a series of laboratory sessions on DB management, administration and security issues.

Course Objectives

On completion of this course students should be able to:
- Manage a database system.
- Understand how to organize and use databases effectively
- 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.

Text Books

Connolly T.M. and Carolyn E. Begg.. Database Systems: A Practical Approach to Design, Implementation and Management, 5th Ed., 2009

References

1. Ramez Elmasri, Shamkant B. Navathe. 2006. Fundamentals of Database Systems(5th ed). ISBN-10 0321369574.
2. Database Processing. Fundamentals, Design and Implementation by David M. Kroenke
3. Abraham Silberschatz, Henry F. Korth, S. Sudarshan. 2005. Database System Concepts (5th ed).
4. Micheal Otey & Paul Conte, SQL Server 7 Developer's Guide, McGrawHill, 1999
5. Steven Bobrowski, Oracle7 Server Technology Concepts Manual, 1992
6. Peter Rob & Carlos Coronel, Database Systems: Design Implementation and Management, 3rd Ed., Thomson Course Tech. 1997
7. David M. Kroenke et el, Database Processing, Prentice Hall, 11th Ed, 2010

Evaluation Scheme

Lab Assignments and Quizzes	20%
Mid-term	30%
Final Examination	50%

Course Title: **Structured System Analysis & Design**
Course Number: **INSY 331   same as INTE 331**
Credit Hour: **3**
Prerequisite: **Introduction to Information Communication Technology**

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
- Grasp lifecycles of system development
- Conceptualize object oriented system analysis and design techniques
- Analyze complex systems to structure them into manageable parts
- Analyze and design small and medium scale systems

Text Books

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. Shelly, Cashman, & Rosenblatt, System Analysis & Design, 4th Ed., 2001, ThomsonCourse Tech.
2. Kendall & Kendall, System Analysis & Design, 3rd Ed., 1995, Prentice-Hall Inc.
3. J.C.Wetherbe & N.P. Vitalari, System Analysis & Design: Best Practices, 4th Ed., West Publishing Company
4. J.W. Seatzinger et el., System Analysis & Design in a Changing World, Thomson Course Tech.
5. John G. Burch, System Analysis, Design & Implementation, 1992, Division of South Western Publishing

Evaluation Scheme

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

Course Title: **Business Process Management**
Course Number: **INSY 435**
Credit Hour: **3**
Prerequisite: **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
- Grasp the role and potential of IT to support business process management
- Comprehend how to support and manage business process change
- Know different approaches to business process modeling and improvement
- Capture 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

Text Books

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 Scheme

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

Course Title: **Object Oriented Programming**
Course Number: **INSY 311   same as INTE 411**
Credit Hour: **4**
Prerequisite: **Fundamentals of Programming**

Course Description

This course is designed to provide the fundamental theories; principles and techniques of object oriented programming. Topics to be dealt with are: classes, objects, data abstraction, encapsulation, information hiding, overloading, inheritance, polymorphism, exceptions handling. This course gives students the opportunity to work on the Java programming language during the practical session.

Course Objectives

Upon completion of the course students should be able to:

- Compare and contrast the two known programming paradigms structural programming and Object Oriented Programming,
- Understand basic object oriented concepts such as object, class, abstraction, hierarchy, modularity and encapsulation,
- Successfully carry out a project on the edit-compile-run cycle of software development in an appropriate software development environment,
- Use Java to implement and experiment on object oriented program development techniques and principles.

Text Books

Deitel & Deitel, Java How to Program, Pearson Edcuation Inc., 3rd/8th ed., 1999/2010

References

1. Bruce Eckel, Thinking in Java, Prentice Hall, 2nd Ed., 2000
2. Edith Au et el., Java Programming Basics, Pencom Systems Inc. 1996
3. Micheal C. Daconta, Java for C/C++ Programmers, Jhon Wiley & Sons Inc., 1996
4. Keneth Litwak, Pure Java 2, Sams Publishing Inc., 2000
5. Sanders K. E. and Andy Van Dam. 2005. Object-Oriented Programming in Java: A Graphical Approach, Preliminary Edition

Evaluation Scheme

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

Course Title: **Data Structures and Algorithms Analysis**
Course Number: **INSY 314 same as INTE 314**
Credit Hour: **3**
Prerequisite: **Object Oriented Programming**

Course Description

This course focuses on the study of data structures, algorithms and program efficiency. It helps students not only to write correct and efficeint programs but also have efficient interms of processor time utilization and memory usage. Topics include analysis of time and space requirement of algorithms; program efficiency improving techniques; absract data types such as linked lists, stacks, queues, and trees; simple searching and sorting algorithms; and advanced sorting algorithms. By making object oriented programming a prerequisite it is intended to deliver this course using object orientation. Students will practice the concepts mentioned in the lab session.

Course objectives

At the end of the course students should be able to:
- Understand and explain the theories and principles of data structures and algorithms
- Grasp the essence of writing efficient programs
- Comprehend how to create abstract data structures
- Analyze programs' space and time complexity
- Write effcient programs using the most appropriate data structure and algorithms
- Discuss the workings, prons and cons of sorting and searching algorithms

Text Books

Richard & Lewis, Fundamentals of Object Oriented Programming & Data Structures in Java, 2000, Cambridge University Press

References

1. Robert L. Kruse & Alexander J. Ryba, Data Structures & Program Design in C++, 1999, Prentice Hall
2. Frank M. Carrano & Janet J. Prichard, Data Abstraction & Problem Solving with Java, 2001, Addison Wisely Longman Inc.
3. Dietel & Dietel, Java How to Program, 11th Ed., 2010, Prentice Hall
4. Principles and Concepts of Data Structures, Schuam's Outline Series

Evaluation Scheme

Assignments and Lab Project:	30%
Mid-term:	30%
Final Exam:	40%

Course Title: **Information Systems Project Management**
Course Number: **INSY 452** **same as** **INTE 460**
Credit Hour: **3**
Prerequisite: **Structured 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

Text Books

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. Bainey, 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 312**   **same as**   **INTE 312**
Credit Hour: **3**
Prerequisite: **Fundamentals of Programming**

Course Description

This course offers an overview of the internet and WWW. 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)
- Comprehend essence and application of web-based information systems
- Analyze, design and develop small scale web-based information systems

Textbook:

Shelly et el., HTML Comprehensive Concepts and Techniques, 2nd Ed., Thomson Course Tech.

References

1. Deitel & Deitel, Internet & World Wide Web How to Program, , 4th ed., 2009 Pearson Edcuation Inc.[1]
2. Jennifer Niederst, Web Design in A Nutshell, 1999, O'Relly & Associates inc., [2]
3. Linda & William Weinman, Creative html design.2, 2001, New Riders
4. Laura Lemay, Teach Yourself Web Publishing with HTML in 14 Days, 1995, Sams.net Publishing
5. Don Gosselin, JavaScript Comprehensive, 2000, Thomson Course Tech.
6. Eric M. & William J., Dynamic HTML in Action, 2nd Ed., 1999, Microsoft Press
7. Peter den Haan et el., Beginning JSP 2: From Novice to Professional, 2004, APress
8. Chris Goode et el., Beginning ASP.NET 1.0 with Visual Basic.NET,2002, Wrox Press Ltd.
9. Susane Clark et el., VBScript Programmer's Reference, 1999, Wrox Press Ltd.
10. Danny Goodman, Dynamic HTML – The Definitive Reference, 2002, O'Relly
11. Danny Goodman, JavaScript Bible, 3rd Ed., IDG Books Worldwide Inc.,

Evaluation Scheme

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

Course Title: **Internet Programming II**
Course Number: **INSY 411 same as INTE 415**
Credit Hour: **3**
Prerequisite: **Internet Programming I and Fundamentals of Database Systems**

Course Description

Internet Programming II is a continuation of the course Internet Programming I. Topics include, client-side programming using scripting languages (JavaScript, VBScript); server-side programming (CGI, JSP, ASP, PHP); web-based database application development, java applets, XML XHTML.

Course Objectives:

At the end of the course students should be able to:
- understand the internet and World Wide Web
- comprehend essence and application of client-server web-based information systems
- analyze, design and develop dynamic web-based commercial systems

Textbook

Deitel & Deitel, Internet & World Wide Web How to Program, , 4th ed., 2009 Pearson Edcuation Inc

References

1. Don Gosselin, JavaScript Comprehensive, 2000, Thomson Course Tech.
2. Peter den Haan et el., Beginning JSP 2: From Novice to Professional, 2004, APress
3. Chris Goode et el., Beginning ASP.NET 1.0 with Visual Basic.NET,2002, Wrox Press Ltd.
4. Susane Clark et el., VBScript Programmer's Reference, 1999, Wrox Press Ltd.
5. Danny Goodman, Dynamic HTML – The Definitive Reference, 2002, O'Relly
6. Danny Goodman, JavaScript Bible, 3rd Ed., IDG Books Worldwide Inc.

Evaluation Scheme

Lab Project	30%
Class Exercises/Assignments	10%
Mid-term	20%
Final Exam	40%

Course Title: **Information and Society**
Course Number: **INSY 502   same as INTE 504**
Credit Hour: **3**
Prerequisite: **Introduction to ICT**

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

Through this course students will be able to:
- Discuss the impact of information on society
- Understand e-governance
- Realize and use ergonomics of computers
- Recognize ethical issues regarding information technology and adhere to the same

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

Continuous Assessment (quizzes and assignments)   30%
Mid-Term Examination   30%
Final Examination   40%

Course Title: **Systems and Network Administration**
Course Number: **INSY 442**   **same as INTE 445**
Credit Hour: **3**
Prerequisite: **Data Communication and Computer Network**

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.

Text Books

Mark Burgess, Principles of Network and Systems Administration, 2nd edition, 2004

References

1. Michael Aubert, MCSE Microsoft Windows Server 2003 Active Directory Enhanced, 2006, Thomson Course Tech.
2. Andrew S. Tanenbaum, Computer Networks, 3rd Ed., 1996, Prentice Hall
3. Patrick Ciccarelli & Christina Faulkner, Networking Fundations, 2004, Sybex Inc.
4. Melissia Craft et el., Network+: Exam Prep, 1999, The Coriolis Group
5. John Ray, Using TCP/IP, 1999, Que Corporation
6. William Stallings, Data and Computer Communications, 2004, Prentice Hall
7. J. F. Kurose and K. W. Ross: Computer Networking: A Top-Down Approach to the Internet (3rd ed), Pearson Education, Inc., 2005.[0]

Evaluation Scheme

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

Course Title: **Operating Systems**
Course Number: **INSY 340 same as INTE 441**
Credit Hour: **4**
Prerequisite: **Introduction to Information Communication Technology**

Course Description

The course provides an introduction on the basic functions of operating systems. Topics to be covered are overview of operating systems including history, evolution and philosophy. The course then covers the process concept; the thread concept; scheduling: basic concepts, scheduling criteria, scheduling algorithms; inter-process communication, process synchronization, the critical section problem, semaphores, monitors, classical synchronization problems; deadlocks and avoidance, prevention. Memory management includes physical and virtual memory, swapping, allocation, paging, segmentation; file systems, access methods, directory structure, file system implementation, disk space management, Input/output, principles of I/O hardware and software; security: authentication and encryption. This course is accompanied by a practical laboratory sessions where students will be exposed to hands on experience in manipulating the internals of operating systems possibly using a LINUX distribution like UBUNTU, FEDORA or open SUSE

Course Objectives

At the end of the course students should be able to:
- Describe common inter-process communication and synchronization methods
- Explain common process scheduling algorithms
- Understand the problem of deadlocks
- Conceptualize the implementation of virtual memory as used in computer systems and some of the critical problems that need to be considered
- Describe the main issues of operating systems in handling i/o devices
- Grasp the goals of file system design and the ways in which several operating systems meet these goals
- Discuss the need for security in computer systems in the historical context and discuss several threats and methods of overcoming those threats

Text Books

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

References

1. Avi Silberschatz et el., Applied Operating System Concepts, 1st Ed., 2000, John Wiley & Sons, Inc.
2. William Stallings, Operating Systems: Internals & Design Principles, 5th Ed., 2005, Prentice Hall
3. Avi Silberschatz et el., Operating System Concepts, 6th Ed., John Wiley & Sons, Inc.
4. Grant Taylor, Linux Complete, 1999, Sybex Inc.
5. Mark J. Rochkind, Advanced Linux Programming, 1995, Prentice Hall
6. Michael Tischer, PC Intern Systems Programming, 1992, Abacus-Developer's Series
7. Christopher Negus, Linux Bible, 2005, Wiley Publishing Inc.,
8. Bill Ball, Teach Yourself Linux in 24 Hours, 2nd Ed., 1999, Sams Publishing Inc.

Evaluation Scheme

Lab Project	15%
Class Exercises/Assignments	15%
Mid-term	30%
Final Exam	40%

Course Title: **Data Communication and Computer Networks**
Course Number: **INSY 441 same as INTE 341**
Credit Hour: **3**
Prerequisite: **Introduction to Information Communication Technology**

Course Description

- This course introduces students the 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
- Discuss the concept of data encoding, data transmission and communication media sharing
- Analyze different types of computer networks and network architectures
- Explain the concept of path selection
- Conceptualize the various security threats and the security mechanisms to use

Text Books

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

References

1. Andrew S. Tanenbaum, Computer Networks, 3rd Ed., 1996, Prentice Hall
2. Patrick Ciccarelli & Christina Faulkner, Networking Fundations, 2004, Sybex Inc.
3. Melissia Craft et el., Network+: Exam Prep, 1999, The Coriolis Group
4. John Ray, Using TCP/IP, 1999, Que Corporation
5. Todd Lammle, CCNA Study Guide, 4th Ed., Sybex Inc.
6. Todd Lammle, CCNA Study Guide, 2nd Ed., Sybex Inc.
7. Networking Essentials Plus, Microsoft Press, ISBN:157231902x

Evaluation Scheme

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

Course Title: **Object Oriented Systems Analysis and Design**
Course Code: **INSY 433**
Credit Hour: **3**
Pre-Requisite: **Structured System Analysis and Design**

Course Description:

Introduction to Object Technology; Principles of Modeling, Principles of Object Orientation; systems development using the object technology; Modeling; principles of modeling; requirements gathering and modeling using use case; techniques of modeling static and dynamic aspects of systems; finding classes and objects; Interaction Diagrams – sequence and collaboration diagrams; Class Diagrams; object diagram; activity diagram; State chart diagrams; component diagram; deployment diagram. Individual and/or team project involving reports and walk-through in systems analysis and design is also a major component of this course using CASE tools.

Course Objectives

Upon completion of this course, students should be able to:
- Understand fundamental concepts and object-oriented techniques of systems analysis and design.
- Analyze problems through the development of structural, behavioral and state-chart models
- Capture user requirements through use-case modeling
- Examine use-cases to analyze and build an understanding of the problem
- Develop design models that reflect OO solutions
- Transfer best OO practices into projects in the workplace

Text books

1. Scott w. ambler. The Object Primer 3rd ed. University of Cambridge press.2004

References

1. Ian Sommerville, Software Engineering, 5th Ed., 1996, Addison Wesley
2. Grady Booch et el., The UML User Guide, 12th Ed., 2004, Addison Wesley
3. Pierre-Alain Muller, Instant UML, Wrox Press
4. Stephen R. Schach, Classical & Object Oriented Software Engineering, 4th Ed., 1999, McGraw Hill
5. Roger Pressman, Software Engineering: A Practitioner's Approach, 4th Ed.,1997,McGraw-Hill.

Evaluation Scheme

Assignment	20%
Project	30%
Mid Exam	20%
Final Exam	30%

Course Title: Introduction to Information Storage and Retrieval
Course Number: INSY 423
Credit Hour: 3
Prerequisites: Fundamentals of Data Base Systems and Data Structure and Algorithm

Course Description:

It includes Introduction to Information Storage and Retrieval (Definition, components, kinds of Information Retrieval Systems, the retrieval process etc.); automatic text operation and automatic indexing (term selection, term weighting, etc); data and file structure for information retrieval (flat files, inverted files, signature files, PAT trees, and graphs), Retrieval Model (Boolean Model, Vector Based Retrieval Model, Probabilistic Retrieval Model); Evaluation of Information retrieval systems (Precision Recall, fallout, generality, E-measure, harmonic mean, User based evaluation etc.), Techniques for enhancing retrieval effectiveness(including relevance feedback, query reformulation, thesauri etc), query languages, query operations, string manipulation and search algorithms, document classification and clustering; Current Issues in IR etc.

Course Objectives

After successful completion of the course, students will be able to:

- Understand the processes of information storage and retrieval;
- Explain modern information retrieval models;
- Design, develop and evaluate Information Retrieval systems;
- Understand evaluation issues in IR;
- Discuss current research issues in IR

Text

1. R. Baeza-Yates, B. Ribiero-Neto. (1999). Modern Information Retrieval, ACM Press, Addison-Wesley: New York
2. R. R. Korfhage. (1997). Information Storage and Retrieval, John Wiley & Sons: New York

References

1. G. Salton and M.J. McGill. (1983). Introduction to Information Retrieval. McGraw-Hill: New York
2. C.J. van Rijsbergen (1979). Information Retrieval. London: Buterworths
3. K. Sparck Jones and P. Willett (1997). Readings in Information Retrieval. Morgan Kaufmann: San Francisco
4. I.H. Witten, A. Moffat and T.C. Bell (1999). Managing gigabytes: Compressing and Indexing Documents and Images. Morgan Kaufmann: San Francisco
5. Cleveland, D. B., & Cleveland, A. D. (2001). *Introduction to indexing and abstracting*. 3rd ed. Greenwood Village, CO.: Libraries Unlimited. ISBN 978-1563086410
6. *Indexes: A chapter from The Chicago manual of style, 15th edition*. (2003). Chicago: University of Chicago Press. ISBN 978-0226104065

Evaluation Scheme

Assignment	20%
Project	20%
Mid Exam	20%
Final Exam	40%

Course Title: **Visual Programming**
Course Number: **INSY 412**
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

Michael Halvorson, Microsoft Visual Basic 2008: Step by Step, Microsoft Press, ISBN-10 0725625379

Reference

1. Stephens R., Visual Basic 2008 Programmers Reference, 2008, ISBN-10 0470182628. 1248 p.
2. Julia Case Bradley & Anita C. Millspaugh, Programming in Visual Basic. NET,4th Ed., 2003, McGrawHill
3. Mike Gunderly, ADO & ADO.Net Programming, 2002, Sybex Inc.,
4. Visual Basic 2008: Programmer's Reference, Wiley Publishing

Evaluation Scheme

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

Course Title: **Internship**
Course Number: **INTE 482**   **same as**   **INSY 462**
Credit Hour: **3**
Prerequisite: **Completing Third Year**

Course description

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. The internship will occur during the summer break between the third and fourth year. The intern will work regular work days for two and a half months. Students are expected to concentrate on the major ICT areas of the organization they are engaged during their attachment.

Objectives

During the time of the internship students are expected to fully engage themselves with all aspects of the organizational ICT infrastructures, systems and services including but not limited to:

- Legacy systems (both hardware and software) being used, migrations from old to modern systems (if any), etc
- How organizations manage their ICT needs and requirements
- Network systems being used and maintained, technologies(both hardware and software) used, services delivered, etc
- Operating systems and other software tools used
- The strategy deployed to respond organizational software needs
- Web systems and technologies being used
- Users expectations and satisfactions of the ICT services
- How end users' requests are managed
- Detailed knowledge of organizational ICT infrastructures and strategies
- New ways of doing things in ICT

Albeit an intern is expected to be effortful and successful in establishing all-rounded personality addressing the aforementioned areas it is also encouraging to find a specific area of interest and explore more deeply. For instance, after exploring the overall ICT infrastructures and systems of an organization a student may become more interested concentrate his/her effort either in the networking systems or software development or web development and services of the organization.

Evaluation Scheme

Daily reports and accomplishments	40%
Special project accomplished and report delivered	40%
Executive interview (viva voce)	10%
Job performance evaluation	10%

Course Title: E-Commerce
Course Number: INSY 553   same as   INTE 557
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

Up on completion of this course, 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

Text Books

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

Presentation:	10 %
Paper work:	20 %
Mid Examination:	30 %
Final Examination:	40 %

Course Title: **Decision Support Systems**
Course Number: **INSY 534**
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, artificially 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.

Text Books

Wayne L.winston, Christopher zapper ,Data Analysis and Decision Making with Microsoft Excel, 2006,Thomson , S. Christian Albright,

References

1. Seref M H., et al. 2007. Developing Spreadsheet-Based Decision Support Systems. ISBN-10 0975914650.
2. Organization for Economic Cooperation and Development (OECD). 2005.
   Statistics, knowledge and policy: key indicators to inform decision making.
   OECD, Paris.
3. Nunamaker, JF. 1996. Information systems – decision support systems and knowledge based systems. IEEE Computer Society Press, Los Alamitos, CA.

Evaluation Scheme

Two assignments	20%
Paper Work	20%
Mid Exam	20%
Final Exam	40%

Course Title: **Computer Maintenance and Technical Support**
Course Number: **INSY 542 same as INTE 444**
Credit Hour: **3**
Prerequisite: **Applied Physics and Introduction to ICT**

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.
- Comprehend and troubleshoot basic computer networks.
- Manage time and to set priorities within the needs of the client or organization.

Text Books

1. Jean Andrews, A+ Guide to Managing & Maintaining Your PC, 3rd ed., 2000, Thomson Course Tech., 2nd Ed.

References

1. Stephen J. Bigelow, Troubleshooting, Maintaining, & Repairing PCs, 2nd Ed., 1999, McGraw Hill.
2. David Groth & Dan Newland, A+ Complete Study Guide, 2002, Sybex Inc.
3. Osborne, A+ Certification Study Guide, 3rd Ed., 2001, McGraw Hill.
4. David Groth, A+ Core Module Study Guide, Sybex Inc.
5. Peter Norton & John Goodman, Inside the PC, 7th Ed., 1997, Sams Publishing
6. Tom Badgett et el., A Guide to Operating Systems Troubleshooting & Problem Solving, 1999, Thomson Course Tech.
7. Stephen J. Bigelow, Troubleshooting & Repairing PC Drives & Memory Systems, 2nd Ed., 1998, McGraw Hill.
8. Will Train, PC Upgrading & Maintenance, 1997, Sybex Inc.

Evaluation Scheme

Quizzes and Assignment:	30 %
Practical Work (Series of Lab Reports):	70 %

Course Title: **Senior Project**
Course Number: **INSY 552**
Credit Hour: **3**
Prerequisite: **Completing Fourth Year Sem. I**

Course Description

The purpose of this course is for students to practice what they have learned by applying 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

- Proposal   20 %
- Written   40%
- Presentation   40%

Course Title: **Management of Information Systems and Services**
Course Code: **INSY 531**
Credit Hour: **3**
Pre-Requisite: **Structured System Analysis and Design**

Course Description:

Introduction to internal and external management issues and practices in information organizations. Internal issues: organizational behavior, organizational theory, personnel, budgeting, planning. External issues: organizational environments, politics, marketing, strategic planning, funding sources.

Course Objectives

Up on completion of this course, students should be able to:
- Explore organizational needs for information and how information systems meet those needs.

- Evaluate information technology acquisitions including:
    - Assessing the feasibility of alternative technology solutions.
    - Determining how the technology solution affects stakeholders.
    - Prioritizing system requirements and constraints.
    - Determining of the organization to build or buy the technology.
    - Determining resources needs for implementing the technology system.
    - Constructing a decision matrix for evaluating alternative technology systems.
    - Developing an implementation and post-implementation plan.
    - Creating the appropriate documentation needed to defend a technology acquisition to management.

Text

McNurlin and Sprague, Information Systems Management in Practice, 7th Edition

References

1. Robert K. Wysocki AND James Young Information Systems: Management Practices in Action (1990) Wiley; 1 edition
2. Laudon, Kenneth C. and Jane P. Laudon (2009), 11e, Management Information Systems: Managing the Digital Firm. 013607846X

Evaluation Scheme

Project   30%
Mid   30%
Final   40%

Course Title: **Multimedia Systems**
Course Number: **INSY 432** **same as INTE 457**
Credit Hour: **3**
Prerequisite: **Introduction to ICT**

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,
- Comprehend applications of multimedia systems in day to day life
- Produce a multimedia presentation

Text Books

Suzanne, Jennifer, et el., Multimedia Basics, 2004, Thomson Course Tech.

References

1. Tay Vaughan. 2006. Multimedia: Making it Work, 7th ed. ISBN-10 0072264517.
2. Ralf Steinmetz & Klara Nahrstedt, Multimedia Fundamentals: Media Coding & Content Processing, Prentice Hall
3. Ze Nian Li & M. S. Drew, Fundamentals of Multimedia, 2004, Prentice Hall
4. G. Lu, Multimedia Database Management Systems, 1999, Artech House
5. K.R. Rao et el., Multimedia Communication Systems, 2002, Prentice Hall

Evaluation Scheme

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

Course Title: **Introduction to Artificial Intelligence**
Course Number: **INSY 434   same as INTE 432**
Credit Hour: **3**
Prerequisite: **Object Oriented Programming and Introduction to Logic**

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
- Outline search strategies and solve problems by applying a suitable search method
- Understand how agents reason
- Grasp the issues related to agent planning, handling uncertainty, learning from observation and communicate.

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

References
1.   James A. Anderson, An Introduction to Neural Networks, 1995, MIT Press.
2.   Rich Elaine, Artificial Intelligence, McGraw Hill

Evaluation Scheme
Assignment:	10%
Lab Assignment:	20%
Mid Exam:	30%
Final Examination:	40%

Course Title:	**Information Assurance and Security**
Course Number:	**INSY 554 same as INTE 564**
Credit Hour:	**3**
Prerequisite:	**Systems and Network Administration and Advanced Data Base Management Systems**

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, and 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
- Comprehend theories and principles of information security
- Grasp protection mechanisms and their strength and limitations
- Demonstrate how to secure files and users access

Text Books

Michael Whitman & Herbert, Principles of Information Security, 2nd Ed., 2005, Thomson Course Tech.

References

1. Rick Lehtinen & G.T. Gantemi, Computer Security Basics, 2nd Ed., 2006, O'Relly Media Inc.,
2. David Salomon, Fundamentals of Computer Security, 2005, Springer
3. S.B. Sworth et el., Computer Security Handbook, 4th Ed., 2002, Willey Inc.
4. William Stallings et el., Computer Security: Principles & Practice, 2007, Prentice Hall

Evaluation Scheme

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

Course Title: **Data Mining and Warehousing**
Course Code: **INSY 521**
Credit Hour: **3**
 Prerequisite: **Advanced Data Base Systems**

Course Description

Data warehousing concepts: understanding the purpose of OALP, data warehouse and data marts, data warehousing terminology, the components of data warehouse architecture and infrastructure, why data warehouse, building data warehouse, and the front-end tools needed for a successful data warehouse. Introduction to basic concepts behind data mining, survey of data mining applications, techniques and models, introduction to data mining software suite, exploration of data mining methodologies. Topics may include decision tables, decision trees, classification rules, association rules, clustering, statistical modeling, and linear models. Case studies using large data sets taken from real-life applications. Problems encountered when dealing with large data sets. How much data is enough? Extensive use of data mining software, advanced techniques in data mining, text data mining, text classification, naïve Bayes, the EM algorithm, optimization, visualization, genetic algorithms, data augmentation, MarKov chain Monte Carlo techniques, knowledge extraction.

Course Objectives:
Upon completion of the course, students will be able to:
- Understand the nature and purpose of data mining
- Describe the theoretical constructs and core processes of data mining
- Capture the basic statistical concepts related to data mining.
- Describe the predictive modeling functions of data mining.
- Grasp the types and characteristics of predictive models.
- Describe the potential applications of data mining

Text:
      Data Mining : Concepts and Techniques, 2nd edition, Jiawei Han, Micheline Kamber, Morgan Kaufmann, ISBN 1558609016, 2006.

Reference
1. Mastering Data Mining, Michael Berry & Gordon Linoff, John Wiley & Sons, 2000.
2. Introduction to Data Mining Using SAS Enterprise Miner, Patricia Cerrito, ISBN: 978-1-59047-829-5, SAS Press, 2006.
3. Data Mining: A Knowledge Discovery Approach, Springer,K. Cios, W. Pedrycz, R. Swiniarski, L. Kurgan, ISBN: 978-0-387-33333-5, 2007.
4. Data Mining Introductory and Advanced Topics, Margaret Dunham, ISBN: 0130888923, Prentice Hall, 2003.
5. Advances in Knowledge Discovery and Data Mining, U. Fayyad, G. Piatetsky-Shapiro, P. Smyth, R. Uthurusamy, editors, AAAI/MIT Press, 1996

Evaluation Scheme
- Assignment   20%
- Project   30%
- Mid Exam   20%
- Final Exam   30%

Course Title: **IT and Economic Development**
Course Number: **INSY 503**   **same as**   **INTE 505**
Credit Hour: **3**
Prerequisite: **Information and Society**

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, other 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
- Analyze polices that promote information technology transfer and development

Text Books

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

References

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.

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

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

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

Course Title: **Knowledge Management**
Course Code: **INSY 522**
Credit Hour: **3**
Prerequisite: **Introduction to ICT**

Course description

Thorough coverage of the latest theory and practice of Knowledge Management (KM), with an integrated interdisciplinary presentation that makes sense of the confusingly wide variety of computer science and business KM perspectives arising simultaneously from artificial intelligence, information systems, and organizational behavior. Solidly covers the "hard" technical components of computer tools and technology for managing knowledge, without losing sight of the "soft" management needs and challenges in leveraging knowledge effectively within an organization. Critically evaluates the nature, computer representation, access, and utilization of knowledge versus information within a human context. Essential preparation for managerial, technical, and systems workers alike in today's modern knowledge-based economy.

Course objectives

Upon satisfactory completion of this course, students are expected to:
- Understand the fundamental concepts in the study of knowledge and its creation, acquisition, representation, dissemination, use and re-use, and management.
- Appreciate the role and use of knowledge in organizations and institutions, and the typical obstacles that KM aims to overcome.
- Know the core concepts, methods, techniques, and tools for computer support of knowledge management.
- Understand how to apply and integrate appropriate components and functions of various knowledge management systems.
- Be prepared for further study in knowledge generation, engineering, and transfer, and in the representation, organization, and exchange of knowledge.
- Critically evaluate current trends in knowledge management and their manifestation in business and industry.

Text Books

Irma Becerra-Fernandez, Avelino Gonzalez, Rajiv Sabherwal (2004). *Knowledge Management Challenges, Solutions, and Technologies* (edition with accompanying CD). Prentice Hall. ISBN: 0-13-109931-0.

Reference books

1. Elias M. Awad, Hassan M. Ghaziri (2004). *Knowledge Management*. Prentice Hall. ISBN: 0-13-034820-1.
2. Ian Watson (2002). *Applying Knowledge Management: Techniques for Building Corporate Memories*. Morgan Kaufmann. ISBN: 1558607609.
3. Madanmohan Rao (2004). *Knowledge Management Tools and Techniques: Practitioners and Experts Evaluate KM Solutions*. Butterworth-Heinemann. ISBN: 0750678186.
4. Amrit Tiwana (2002). *The Knowledge Management Toolkit: Orchestrating IT, Strategy, and Knowledge Platforms* (2nd Edition). Prentice Hall. ISBN: 013009224X.
5. Stuart Barnes (ed) (2002). *Knowledge Management Systems Theory and Practice*. Thomson Learning.

Evaluation Scheme

Assignments / quizzes:	20%
Mid Exam:	20%
Project:	20%
Final Exam:	40%

Course Title: **Expert System**
Course Number: **INSY 536**
Credit Hour: **3**
Prerequisite: **Introduction to Artificial Intelligence**

Course Description

Brief history of expert systems; Why expert systems? Economic   reasons, time, space, consistency and quality in decision-making, intellectual reasons, human cognitive shortcomings. Pure reasoning systems versus knowledge-rich systems. Knowledge acquisition: meaning, purpose, and techniques. Knowledge representation: frames, rules, classes and procedures. An introduction to expert system development tools and shells. Inference methods: forward and backward chaining, depth/ breadth approaches, rule selection strategies. Explanation: how/ why, symbolic and non-symbolic systems, probability/certainty factor, statistical systems, neural nets, case based reasoning.

Course Objectives

On completion of this course students should be able to:
- Appreciate the link between AI and Expert System
- Understand the historical development of knowledge based systems
- Develop and appreciate knowledge Based Systems and their architectures
- Comprehend a wide variety of knowledge representation techniques
- Grasp various methods for representing and reasoning uncertainty

Textbook
1. It Joseph C. Giarratano and Gary D. Riley, Expert Systems: Principles and Programming (4th edition), USA, Course Technology, 2004
2. Peter Jackson, Introduction to Expert Systems (3rd Edition), USA, Addison Wesley, 1998

References

1. John Durkin, Expert Systems: Design and Development, USA, Prentice Hall, 1994.
2. Sholom M. Weiss and Casimir A. Kulikowski , A Practical Guide to Designing Expert Systems USA, Rowman & Littlefield Pub Inc , March 1984

Evaluation Scheme

Quiz and Assignment:	20%
Mid Exam:	20%
Project:	20%
Final Exam:	40%

Course Title: UNIX System Administration and Support
Course Number: **INTE 541**
Credit Hour: **3**
Prerequisite: **Operating Systems, Data Communications and Computer Networks**

Course description

This course is designed to introduce the students how to perform basic and advanced systems administrative tasks on UNIX environments with the intention of enabling them to have the skills to mange users. Services files hardware devices and networks. Topics covered includes but not limited to installation and configuration of a UNIX based operating system, maintenance and monitoring of files systems, managing users. Monitoring and troubleshooting system performance, developing and customizing user login and other start-up scripts. Managing system services, Shell scripting, automating system services. Installing and updating application software , connecting to an network, Implementing fileservers, print servers and web server, mail servers, Security administration, Firewalls and IP masquerading, system backups and restores, and package and patch administration.

Course objectives

Upon successful completion of this course, students should be able to:
- Describe, define and understand the open and free software principles and mottos
- Understand the various UNIX and Linux based operating system distributions
- Install and configure a Linux based operating system
- Use and manage the operating system installed and configured
- Monitor and fine tune performances of typical operating system features
- Manage users and other resources in the operating system, possibly on a networked system
- Install, configure and test file, mail, print and web servers
- Perform security related configurations and patch updates
- Perform system backups and restores

Textboo*k*
> Evi Nemeth, Gareth Snyder et el., UNIX System Administration Handbook, 3rd Ed., 2001, Prentice Hall

References

1. Dave Taylor, Sams Teach Yourself UNIX System Administration in 24 Hours, Sams Publishing
2. David Tansley, Linux and UNIX Shell Programming
3. Mark Burgess, Principles of Network and System Administration

Evaluation Scheme

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

Course Descriptions for Supportive Courses

Course Title: **Microeconomics**
Course Number: **ECON 202**
Credit Hour: **3**
Prerequisite: **None**

Course Description:

This course introduces and explores a variety of microeconomic topics, including: utility, preference, choice, consumer equilibrium, market demand, and elasticity of demand, choice involving risk, production, cost, competitive market, pure monopoly and monopolistic competition. Students will work in teams on a professional task, using their knowledge of microeconomics.

Course Objectives:

Upon successful completion of this course, students will be able to:
• Define utility, preference and choice.
• Explain how consumers optimize their objectives given the opportunity.
• Relate the concept of elasticity to consumer demand
• Describe production and cost and how they are interrelated
• Identify the basic market structures and describe their characteristics

Text Books:

R.S. Pindyck and D. L. Rubinfeld, Microeconomics.

References

1. Hal R. Varian, Intermediate Microeconomics: A Modern Approach, 4th Ed.
2. Koutsyiannis, Modern Microeconomics.
3. E. Mansfield, Microeconomics: Theory and Applications.
4. D.S. Watson, Price Theory and its Uses.
5. J.P. Gold and C. Ferguson, Microeconomics Theory.
6. D.N. Dwivedi, Microeconomics Theory.
7. Essentials of Economics, 5e, by Mankiw, 2008
8. Principles of MicroEconomics by Frank and Bernanke, 3rd ed., 2007

Evaluation Scheme

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 post closing 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 Small Business Management and Entrepreneurship**
Course Number:	**MAEN 214**
Credit Hour:	**3**
Prerequisite:	**None**

Course description

This interdisciplinary course is designed to introduce students to the concept of sustainable entrepreneurship, a manageable process that can be applied across careers and work settings. It focuses on building entrepreneurial attitudes and behaviors that will lead to creative solution with in community organizational environments. Course topics include the history of entrepreneurships, the role of entrepreneurs in the 21st century global economy, and the identification of entrepreneurial opportunities. The element of creative problem solving, the development of a business concept/model, and the examination of feasibility studies and the social/moral/ethical implications of Entrepreneurship will be covered.

Course objectives

Upon successful completion of this course, students should be able to:
1. Describe and define the nature of entrepreneurship within the context of society, organization and individuals
2. Explain entrepreneurship as a creative and innovative process
3. Grasp the importance of developing and using a business plan
4. Discuss the factors to be considered in starting a new venture
5. Understand the specific management issues involved in setting up and running a small enterprise.
6. Distinguish between an entrepreneurial and conventional approach to management.
7. Develop a concept for an innovative product or service in his/her own area of interest.
8. Develop a personal framework for managing the ethical dilemmas and social responsibilities facing entrepreneurs.
9. Equip with the basic knowledge and skills of starting and operating a business for they will be future managers (or owner-managers) of these firms.

Textbook
Nicholas Siropilis: Entrepreneurship and Small Business Management 6th ed. 1998; Ll Indian Publishers, New Delhi

References
1. Kuratko, Donald. Entrepreneurship: Theory, Process and Practice, 2008. ISBN10: 0324590913
2. Katz, Jerry and R. Green, Entrepreneurial Small Business, 2008. ISBN 0073405063.
3. How to Write a Business Plan, Ethiopian Chamber of Commerce, 2004.
4. Small Business Management: Launching and Growing Entrepreneurial Ventures,J. Longenecker et al., 2007, 768 p. ISBN-10: 0324569728

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

Course Title: **Organizational Behaviour**
Course Number: **MAEN 422**
Credit Hour: **3**
Prerequisite: **Introduction to Entrepreneurship and Small 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

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: **Mathematics I**
Course Number: **MATH 203**
Credit Hour: **4**
Prerequisite: **None**

Course Description:

Basic mathematics logic, sets and their operations, functions and their graphs, matrix and its manipulations, system of linear equations and inequalities, elementary counting principles , recurrence relations, elements of Graph Theory: Definition , Examples, Matrix Representation, path and connectivity of a graph complete, regular and bipartite graph, trees and forest.

Course Objectives:

Upon successful completion of this course, students should be able to:
- Explain the basic concepts of logic, sets and matrices.
- Explain the concept of function.
- Apply the graphs of linear quadratic, logarithmic and exponential functions.
- Analyze the system of linear equations of 2x2 and 3x3.
- Analyze the system of linear inequalities of 2x2 and 3x3.
- Solve linear programming problems of smaller inequalities.
- Apply the methods and principles obtained to solve problems in the study of information science.
- Apply the graphs in application software.

Text Books:

Applied Finite Mathematics, S. T. Tan, 5th Edition, 1997 (30 copies)

References

1. College Algebra in Context, Harshberger and Yocco, 2007.
2. College Algebra , Hornsby and Lial, 2nd Edition, 1999 (38 copies)
3. College Mathematics for Business, Economics, Life and Social Sciences, Raymond A. Barnett   10ed, 2005
4. Mathematics for Business, Economics, Life Sciences, and Social Sciences, 11th Edition, 2008,
5. Applied Mathematics for Managerial, Life and Social Sciences , S.T. Tan, 4ed.,2003

Evaluation Scheme
Assignment	10%
Project work	10%
Mid-semester exam	25%
Attendance	5%
Final exam	50%

Course Title: **Mathematics II**
Course Number: **MATH 204**
Credit Hour: **4**
Prerequisite: **Mathematics I**

Course Description:

The course introduces the basic concepts of Limits: One-sided limits, infinite limits, Continuity of a function, Derivatives, Derivatives of Inverse Trigonometric, Hyperbolic functions, Implicit differentiation, Applications of derivatives, Integration: indefinite integral, techniques of integration, definite integrals, Application of integrals: area, volume , arc length ; Improper integrals; Differential Calculus of two variables: limits, continuity, partial derivatives, tangent lines, directional derivatives, gradient , total differential , tangent planes, relative extrema ; Double integral in iterated form, polar form, Applications

Course Objectives:
Upon successful completion of this course, students should be able to :
- Analyze the formal definition of Limit and Continuity
- Apply the Limit of Functions
- Analyze the points of discontinuity of Functions
- Analyze the derivative of Functions
- Apply derivatives of different types of Functions
- Use derivatives to solve problems
- Apply derivatives to sketch the graph of Functions
- Analyze an integral of a Function
- Apply integrals of different types of Functions
- Use integrals to find areas and volumes

Text and References
Primary Text
 1. College Mathematics for Business, Economics , Life Social Sciences Raymond   A. Barnett, 10ed ,2003,(30copies)

Additional References
1. Calculus and Its Applications Larry J. Goldstein, 9ed, 2005
2. Applied Mathematics for Managerial, Life and Social Sciences, S.T.Tan, 4ed, 2007
3.   College Algebra, Hornsby and Lial, 2nd Edition, 1999 (38 copies)
4.   Calculus Concepts and Context, James Stewart, 1997.
5.

Evaluation Scheme
Assignment	10%
Professional Work	5%
Mid Semester Exam	30%
Attendance	5%
Final Exam	50%

Course Title: **Introduction to Probability and Statistics**
Course Number: **STAT 301**
Credit Hour: **3**
Prerequisite: **Mathematics I**

Course Description:

This course is designed to show students the meaning of statistics, methods of data collection, methods of data presentation, and how to calculate measures of central tendency, measures of variation, moments, skewness and kurtosis, counting techniques, concepts of probability, probability distributions, sampling and sampling distribution of the sample, linear regression and correlation.

Course Objective:

Upon completion of this course, the students will be able to;
- Discuss and use statistical methods.
- Organize and analyze statistical data
- Interpret and apply statistical analyses

Text Books:

1. Basic Statistics for Business and Economics, Lind et al., 2006 (Business related students)
2. Introduction to Statistics and its Applications, Adem Kedir Geleto, 2ed, 2009 (Technical students)

Laboratory Manual

1. Microsoft Excel Manual, A. Bluman, 2007

References

1. Elementary Statistics in Social Research, Jack Levin/James Alan, 9ed, 2003
2. Complete Business Statistics, Aczel and Sounderpandian. 2006
3. Just The Essentials of Elementary Statistics, Johnson/Kuby: 3ed, 2003

Evaluation Scheme

Assignments	10%
Laboratory	20%
Mid term Exam	25%
Professional Task	5%
Final Exam	40%

Course Title: **Applied Physics**
Course Number: **PHYS 201**
Credit Hour: **3**
Prerequisite: **Co-Prerequisite with Mathematics I**

Course Description:

The purpose of this course is to reinforce previous learning of physics by focusing on the applied physics needed as support for the technical courses students will be taking in advanced studies. The theoretical work will be supported by a series of practical laboratory exercises. The topics covered include applications in 1-d and 2-d motion, forces, energy and momentum, torque and center of mass, statics, wave motion and sound, heat and temperature, electric charge, electric potential and current, magnetism, reflection and refraction of light, mirrors and lenses.

Course Objectives

After completing this course, students should be able to:
- Discuss the physical world based on a broad understanding of how it works
- Apply physics concepts when taking the technical courses where this skill is needed
- Reinforce past learning through performing practical exercises in important areas of physics
- Solve problems by using trouble-shooting skills
- Apply skill in working with instruments including data acquisition systems.
- Be curious about the physical world and want to know more about it

Text Books:

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

Reference:

1. How Things Work The Physics of Everyday Life, L. Bloomfield, 2nd Ed., 2001, 12 copies
2. Physics for Scientists and Engineers, Vol. 2, Paul Tipler, 2003, 2 copies
3. Physics with Vernier, K. Appel, et al.
4. Physics, P. Tippens, 6 th Ed., 2001
5. Physical Science, B. Tillery, 6th Ed. 2005, 7 copies
6. Physics for Scientists and Engineers, Vol. 1, Tipler and Mosca, 53, 2004.

Evaluation Scheme

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

Course Descriptions for Cross-Cutting Courses

Course Title: **Civic and Ethical Education**
Course Code: **CEED 201**
Credit Hours: **3**
Prerequisite: **None**

Course Description:

This course is designed to be offered as a common course to all students in the degree program in order to produce responsible, well-informed and competent citizens. The course encompasses the basic concepts of civic and ethical education, state and government, the values and principles of democracy, issues related to citizenship and patriotism, concepts of constitution and constitutionalism, fundamental human rights and major issue of development, basic ideas of international relations and contemporary issues.

Course Objectives:

At the end of the course the students will be able to:
- Explain the subject matter of civic and ethical education
- Develop professional ethics
- Appreciate the difference between state and government
- Practice the principles and values of democracy
- Understand the concept of citizen and citizenship
- Know the concept of constitution and constitutionalism
- Understand the principles of the Ethiopian constitution
- Explain the basic concepts and features of human rights
- Understand and analyze the concepts of development, the theories of development
- Understand the development policies and strategies of Ethiopia
- Know the concept of international relations
- Discuss the national interest and foreign policies of Ethiopia

Text Books
1. AAU (2005). Civic and Ethical Education, Compendium Part One. Addis Ababa: College of Social Sciences.
2. AAU (2005).Civic and Ethical Education, Compendium (2005) Part two. Addis Ababa: College of Social Sciences.
3. Miller, E.D.I (1984). Question that matter: an invitation to Philosophy
4. FDRE (1995). The constitution of Federal Democratic Republic of Ethiopia Addis Ababa.
5. Vincent, B. (1980) Philosophy: a text with readings, chapter three ethics and chapter four, Social Philosophy.

References

1. Gorge, D and Kalaer, H. (1993) An introduction to Business Ethics.
2. Matt, C. et al. (1991). Challenges of Citizenship.
3. Palmer, D. (1996). Does the center hold? An introduction to Western Philosophy. (chapter 7, Ethics, chapter 8, Critique of Traditional Ethical Theories: chapter 9 Political and Social Philosophy).
4. Boss, A. and Boss (1998). Perspective on ethics. London: Mayfield Publishing.
5. Kassaye, A. (2001), Fundamentals of Civic and Ethical Education. Aurum, A. and Popkin, H.(1996) introduction to Philosophy (Chapter 4 & Chapter 5)

Evaluation Scheme

Continuous Assessment	50%, which includes:
Attendance	5%
Reading assignment	10%
Team assignment	10%
Mid Term Examination	25%
Final examination	50%

Course Title: **Introduction to Philosophy (Logic)**
Course Number: **Phil 201**
Credit Hours: **3**
Prerequisite: **None**

Course Description:

The subject matter and purpose of logic; the fundamental laws of logic; the distinction between deductive and inductive arguments; validity and soundness in an argument; language and definition; rules of lexical definition; fallacies; categorical propositions; syllogism; syllogistic rules and fallacies; propositional logic; analogical reasoning and science and hypothesis.

Course Objectives:

At the end of the course the students will be able to:
- Develop the skills needed to construct sound arguments of one's own and evaluate the arguments of others.
- Instill a sensitivity for the formal component in language, a through command of which is indisputable to clear, effective and meaningful communication
- Process the cultivation on the habits of correct reason/critical/ thinking.
- Make distinction between good and bad arguments and avoid fallacious reasoning; and also expose students to different types of fallacy in such a way that they develop the habits of thinking self-independently.

Text Books:
1. Irving M. Copi et al, Introduction to Logic, 13th edition, 2009

References
1. Irving M. Copi, Introduction to Logic, 12th edition, 2005
2. Being Logical: A Guide to Good Thinking, D. McInerny, 2005
3. Logic, 2nd edition, Patrick J. Hurley, 1984.

Evaluation Scheme

Attendance	5%
Class participation	5%
Tests	30%
Group assignment	10%
Final examination	50%

Course Title: **Sophomore English**
Course Code: **FLEN 201**
Credit Hours: **3**
Prerequisites: **None**

Course Description:

A course designed to develop college-level reading and writing skills. It includes oral 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 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 work in the Language Lab, listening to lectures and taking notes, class discussion, giving short talks and responding to questions.

Course Objectives:

Upon successful completion of this course, students will be able to**:**
- Understand and critically analyze class readings, as well as their Text Books.
- 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.
- Make simple reports and presentations to the class on readings, discussions and professional tasks

Text Books:

Evergreen: A Guide to Writing with Readings, 8th Edition. Susan Fawcett. 2007. Houghton-Mifflin/ Cengage, ISBN10: 0618766448

References
1. Confidence in Writing: Paragraphs and Essays, Alan Meyer,   (14 copies)
2. Steps to Writing Well, Jean Wyrick, 6e, 2005, ISBN10: 14130-01092 (3)
3. The Brief Bedfprd Reader. Kennedy, Kennedy and Aaron, 8e, 2003 (54)
4. 75 Readings:Anthology ;by S. Buscemi, C. Smith, 2007
5. Reading for Results.
6. Listen; Listen to Learn: Lecture comprehension and Note-taking, R. Lebauer, 1988.
7. Prentice Hall Writing and Grammar: Communication in Action, by Carroll, et.al, 2005 (15)

Evaluation Scheme

Tests: reading, grammar, vocabulary	20%
Writing assignments:	35%
Professional task: writing, presentation	10%
Class participation in discussion	10%
Final exam, including writing	25%

Course Title: **Professional Writing**
Course Code: **FLEN 202**
Credit Hours: **3**
Prerequisites: **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 research in students' professional fields, incorporating credible evidence through quotations, paraphrase and summary, using MLA/APA. Students will learn to distinguish between opinion, facts and inferences and to use argument and persuasion. Students will prepare various types of letters, memos, email, proposals, graphics and documents which will be needed in their future professional work. Students will work in teams on a cross-disciplinary professional task, including written and oral work.

Course Objectives:

Upon successful completion of this course, students will be able to:
- Incorporate vocabulary appropriate to their field of study in their writing and speaking.
- Write essays with a clear thesis, logical points to support the thesis, and evidence based on library and internet research.
- Avoid plagiarism by incorporating research evidence using proper documentation.
- Improve writing and proofreading skills through participating in peer review.
- Write clear, concise and effective letters, reports, proposals, and other documents appropriate to their field of study, using library and internet research.
- Speak clearly and effectively in groups, meetings and in a final oral presentation for the professional task.

Text Books:
1. Evergreen: A Guide to Writing with Readings, 8th Edition. Susan Fawcett. 2007. Cengage, ISBN10: 0618766448
2. Alred, Gerald J, Brusaw, Charles, Oliu, Walter; Business Writers' Handbook,2008. Bedford
3. Alred, Gerald J, Brusaw, Charles, Oliu, Walter; Handbook of Technical Writing, 2008, 9th ed.

References
1. Michael Merkel, Technical Communication, 9e, ISBN9780-312485979 Bedford St. Martins.
2. Tom Jehn, Jane, Writing in the Disciplines: a Supplement, 2007, ISBN10: 0312452640
3. Discovering Arguments, an Introduction to Critical Thinking and Writing,2e, D. Memering,2006
4. Locker, Kaczmarek. Guide to Business Communication: Building Critical Skills,2e, 2004.
5. Guffey, Mary Ellen. Business Writing, 2007. Thomson, Southwestern Publishers.
6. Writing and Speaking for Business, W. Baker, 2007, BYU Publishing.

Evaluation Scheme

Essays	30%
Professional writing assignments:	50 %
Professional task: writing, presentation	10%
Class participation in discussion	10%

Course Title: **Presentation and Communication Skills**
Course Code: **FLEN 301**
Credit Hours: **3 Hrs.**
Prerequisites: **Professional Writing**

Course Description:

Following previous limited instruction in making brief talks and reports, this course is designed to improve students' ability to give effective formal presentations and work in groups. Students will focus on audience and purpose, with attention to organization, providing support for their points, appropriate use of visual aids and awareness of nonverbal behavior. They will give talks of varying length, planned and impromptu, followed by questions and feedback. Students will research and write a proposal paper relevant to their field, with proper documentation, and formally present their proposal using AV equipment. This will be good preparation for the professional task. In group assignments, students will learn to conduct effective meetings, negotiate, apply critical thinking in making decisions, deal with conflict usefully but respectfully, and use turn-taking and other English conversational conventions. Resume writing and interviewing skills will prepare them when they look for jobs.

Course Objectives:
Upon successful completion of the course, students will be able to:
- Demonstrate awareness of audience, purpose, and the importance of skilled communication in the solution of business problems.
- Negotiate differences in communication between themselves and people from other cultures and those with viewpoints disagreeing with their own.
- Employ a variety of communication strategies;
- Make effective presentations, oral and written, with or without an equipment.
- Apply critical thinking and decision-making skills to business or technical tasks
- Work effectively with other people in small groups or teams
- Listen actively for understanding
- Give and receive feedback which will improve their own and others' communication.

Text Books:
1. Public Speaking: An Audience-Centered Approach, Steven Beebe and Susan Beebe, 6 ed., 2006.
2. Munter, Mary and Lynn Russell, Guide to Presentations, 7th Ed, 2007.

References
1. Rudolph Verderber, Communicate, 9th ed, 1999, Wadsworth Publishing. (150
2. Locker, Kitty, Kaczmarek, Stephen Kyo, Building Critical Skills, 4th Ed. *McGraw-Hill, 2008.*
3. The Art of Public Speaking, and Learning Tools Suite, 8e,by Stephen Lucas, 2004 + CDRom,(12)
4. Writing and Speaking for Business, W. H. Baker, 2007, BYU Publishing.
5. Essentials of Business Communication, M.E. Guffey, 5e, 2007, Southwestern-Thomson.

Evaluation Scheme:

Class work: discussion, role plays, short talks	20%
Professional Task	10%
Quizzes:	20%
Final research Proposal and Presentation	25%
Group work, assignments and presentations	25%

Course Title: **General Psychology**
Course Code: **PSYC 201**
Credit Hours: **3**
Prerequisites: **None**

Course Description:

This 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 and personality, abnormal psychology and social psychology. Emphasis will be placed on applying psychological principles and data to life experience. Students will learn to understand the psychological foundations of human behavior in all occupations. They will learn how to apply psychological principles and concepts in order to overcome human and environmental barriers to effective relationships. Topics to be covered include motivation, emotion, knowledge retention, group dynamics, worker efficiency, sensation and perception, personality, and development of attitudes. Students will complete the proficiency task of developing a personal statement of goals and values.

Course Objectives:

Upon satisfactory conclusion of this course, students will have developed the ability to:
- Understand human behavior and relationships in different professions and in life at large
- Apply knowledge gained from the course in the areas of business, government and education
- Understand the major factors that influence group and individual decision-making
- Understand effective human and environmental relationships
- Use knowledge of psychology to develop a personal statement of goals and values

Text Books:
        Kalat, James. Introduction to Psychology, 8th ed. Wadsworth, 2008

References
1. Weiten, Wayne, Diane Helpern. Psychology: Themes and Variations: with Concept Charts. Briefer Edition, 7th ed. Thomson-Wadsworth, 2007
2. Psychology: A Modular Approach to Mind and Behavior, 10e, Dennis Coon, 2006.
3. Psychology, Stephen Davis and Joseph Pallidino, 4e, 2003
4. The Essential World of Psychology, Samuel Wood and Ellen Green Wood, 2002.
5. Psychology: A Journey, Dennis Coon, 2002.
6. Psychology, 7th ed., John Santrock, 2005

Evaluation Scheme

Assignments	20%,
Projects, practical work	30%
Mid-semester examination	20%
Final project / examination	30%

Course Title: **Leadership Skills**
Course Code: **MAEN 441**
Credit Hours: **3**
Prerequisites: **None**

Course Description:

This course challenges students to be leaders as leadership is in each and every one. The course outlines how one identifies one's leadership niche and helps one cultivate what one may have to offer as a leader. The course provokes students to think critically about their future life path and in so doing encourages students to find themselves in a world of leaders. In initiating students to such self-discovery, the course encourages students to be committed to certain steps of personal transformation that would set them as leaders. The course uses competency based training as an approach. Concepts are revealed and discussed and applications are attempted within a mock arrangement. Students will then be required to explore leadership qualities within the work environment. Cases shall be used as examples of real life situations for leadership exercises, and speakers invited to talk about their own leadership journeys.

Course Objectives:

The course shall impress upon each student that each is a leader and with this awareness the course shall encourage students to work on their leadership niche. The course shall then impress upon students the attitudinal changes that they need to make and the life goal paths that they should explore.

Text Books

1. Focus on Leadership: Servant Leadership for 21st Century, Ken Blanchard (30 c.)
2. Awakening the Leader Within: A Story of Transformation, Kevin Cashman, Jack Forem (30)
3. The Purpose-Driven Life, Rick Warren, 2002 (150 c.)

References

1. Principle-Centered Leadership, Steven Covey, 1991. (10 c.)
2. Leadership Challenges, Kouzes and Posner, 4th Ed., 2008
3. Leadership: Courage in Action, Robert Terry, 1999.
4. Leadership: Theory and Practice, Northouse, 9th Ed, 2009

Evaluation Scheme

Midterm and final exams	60%
Leadership in the class	20%
Leadership Project	20%