UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* [FTK101]	**Nama Mata Kuliah** *(Course Name)* **:** [Algoritma dan Pemograman/ Algorithm and Programming]		
Program Studi *(Study Program)* **:** [Information System]	**Fakultas** *(Faculty)* **:** [FTIK-UB]		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** [None]	**Kredit** *(Credit)* **:** [4 SKS]		
	Kuliah *(Lecture)* **:** [3 SKS]	**Tutorial :** [0]	**Praktikum** *(Practicum)***:** [1 SKS]
Revisi *(Revision Status)***:** [R-1/~~2/3/4/5/...~~]	**Semester Ganjil/Genap*** *(Odd/~~Even Semester~~*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: [Siti Rohajawati, M.Kom.] [Boy Iskandar Pasaribu, S.Kom., G.D.B.S., M.I.S., M.I.T.} [Husni, M.Sc.]			

COURSE DESCRIPTION

[This course is aimed to give students **knowledge** and **skills** on how to **design** the **logic** of computer programming within **structural** conventions by using algorithms in the forms of **pseudocode**, **flowcharts** and their practical implementation onto **C++** coding.

COURSE OBJECTIVES

At the end of this courses, the students are expected to be able to :

I. Remember & Understand (C1 & C2):

Demonstrate an understanding of algorithms and programming concepts within structural conventions.

II. Apply (C3):

- Apply pseudocode and flowcharts to demonstrate competency of problem –solving skills.
- Apply coding with C++ programming language to demonstrate competency in translating the pseudocode and flowcharts onto the C++ codes.
- Write and execute the codes with the use of IDE (Integrated Development Environment) Microsoft Visual C++ 2008 & 2010 Express Edition Editor-Compiler.

METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and computer lab exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system (B.I.G).

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take

the Final test.

ASSESSMENT

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged. Lab exercises to be completed in the class or as homework.

Group Class Review Questions. These include short answers (**S.A.**) and exercise (**E**) to provide feedback of the students' understanding topic by topic.

Individual Lab Exercises. It includes practices and cases for writing and executing into java programming to provide feedback of the students' practical competency.

Closed-book Mid-Test and Final-Test. These written tests will evaluate the students' level of knowledge and skills on this course.

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Textbooks [T]:

[T1] Gaddis, T. (2010) *Starting Out with Programming Logic & Design*, Second Edition, International Edition, Pearson USA.
[T2] Deitel P. & Deitel H. (2012) *C++ How to Program*, Eight Edition, International Edition, Pearson, USA.
[T3] Schildtz, H. (2010) *C++, A Beginner's Guide*, Microsoft.

Compiler Software [CS]:
[CS1] Microsoft Visual C++ 2008 Express Edition
[CS2] Microsoft Visual C++ 2010 Express Edition

COURSE OUTLINE

This section should show topics, sub-topics, specific method of instruction/ delivery and material references.

Session	Topic & Sub-topics	Methods of delivery	Material references
1	Introduction Syllabus and SAP Topic: Introduction to Computers and Programming Specific sub-topics: 1. Introduction: Hardware, Software, & Programming 2. Computer and Process, store data, programs works 3. Types of Software 4. Review Question	Lecture, discussion, SA-E, reading requirements.	**[T1]** p.1 to 22 **[T1]** p.23 Etc.

Session	Topic & Sub-topics	Methods of delivery	Material references
2	Topic: Input, Processing, Output Specific sub-topics: 1. Designing a program 2. Variable: declarations, names constants 3. Calculations 4. Data type 5. Hand tracing a Program and Documenting	Lecture, discussion, SA-E, reading requirements.	**[T1]** p. 29 to 67 **[T1]** p.68 Etc.
3	Topic: Modules Specific sub-topics: 1. Introduction to modules 2. Defining and calling modules 3. Variable: local, global and constants 4. Passing arguments to modules	Lecture, discussion, SA-E, reading requirements. **Lab Practice**	**[T1]** p.75 to 108 **[T1]** p.109 Etc.
4	Topic: Decision Structures, Boolean Logic Specific sub-topics: 1. Introduction 2. Dual alternative 3. Comparing string 4. Nested decision 5. The case structure 6. Logical operators 7. Boolean variables	Lecture, discussion, SA-E, reading requirements. **Lab Practice**	**[T1]** p.115 to 154 **[T1]** p.155 Etc.
5	Topic: Repetition Structures Specific sub-topics: 1. Introduction 2. Condition-controlled loops 3. Calculating a running total 4. Sentinels 5. Nested loops	Lecture, discussion, SA-E, reading requirements. **Lab Practice**	**[T1]** p.163 to 210 **[T1]** p.211 Etc.
6	Topic: Functions Specific sub-topics: 1. Introduction 2. Generating random numbers	Lecture, discussion, SA-E, reading requirements. **Lab Practice**	**[T1]** p.217 to 250 **[T1]** p.251 Etc.

Session	Topic & Sub-topics	Methods of delivery	Material references
	3. Writing your own functions 4. Modularizing with functions 5. Library functions		
7	Topic: Input Validation Specific sub-topics: 1. Garbage In, Garbage Out 2. The input validation loop 3. Defensive programming 4. Review Material for Mid Exam	Lecture, discussion, SA-E, reading requirements. **Lab Practice**	**[T1]** p.257 to 265 **[T1]** p.266 Etc.
MIDDLE SEMESTER TEST			
8	Topic: Arrays Specific sub-topics: 1. Arrays basics 2. Sequentially searching an array 3. Processing the contents of an array 4. Parallel arrays 5. Two dimensional arrays 6. Arrays the three or more dimensions	Lecture, discussion, SA-E, reading requirements. **Lab Practice**	**[T1]** p.269 to 316 **[T1]** p.317 Etc.
9	Topic: Sorting and Searching Arrays Specific sub-topics: 1. The Bubble sort 2. The selection sort 3. The insertion sort 4. The Binary search	Lecture, discussion, SA-E, reading requirements. **Lab Practice**	**[T1]** p.323 to 354 **[T1]** p.355 Etc.
10	Topic: Files Specific sub-topics: 1. File input and output 2. Process file 3. Files and arrays 4. Processing records: adding, searching, modifying, deleting 5. Control break logic	Lecture, discussion, SA-E, reading requirements. **Lab Practice**	**[T1]** p.361 to 406 **[T1]** p.407 Etc.
11	Topic: Menu-Driven Programs Specific sub-topics: 1. Introduction 2. Modularizing a menu-	Lecture, discussion, SA-E, reading requirements. **Lab Practice**	**[T1]** p.413 to 453 **[T1]** p.454 Etc.

Session	Topic & Sub-topics	Methods of delivery	Material references
	driven program 3. Using loop to repeat the menu 4. Multiple level menus		
12	Topic: Text Processing and Recursion Specific sub-topics: 1. Introduction 2. Character by character text processing 3. Validating password 4. Formatting and unformatting 5. Problem solving and examples of recursive	Lecture, discussion, SA-E, reading requirements. **Lab Practice**	**[T1]** p.459 to 474 **[T1]** p.481 to 497 **[T1]** p.475 & 498 Etc.
13	Topic: Object Oriented Programming Specific sub-topics: 1. Procedural and OOP 2. Classes 3. Design classes with UML 4. Finding the classes 5. Introduction: Inheritance, Polymorphism, Encapsulation	Lecture, discussion, SA-E, reading requirements.	**[T1]** p.503 to 542 **[T1]** p.543 Etc.
14	Topic: GUI application Specific sub-topics: 1. Graphical User Interface 2. Designing the user interface for GUI Program 3. Writing event handlers 4. Review Material for Final Exam	Lecture, discussion, SA-E, reading requirements.	**[T1]** p.549 to 563 **[T1]** p.564 Etc.
FINAL SEMESTER TEST			

Dipersiapkan oleh *(Prepared by* **)**:			**Disahkan oleh** *(Certified by)* :		
Nama (*Name*) Jabatan (*Position*) Tanggal (*Date*)	: : :	[Siti Rohajawati & Boy P.]	Nama (*Name*) Jabatan (*Position*) Tanggal (*Date*)	: : :	[Siti Rohajawati] [Kepala Program Studi]

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* TIF101	**Nama Mata Kuliah** *(Course Name)* **:** Sirkuit Elektronik/Electronic Circuit		
Program Studi *(Study Program)* **:** Information Technology	**Fakultas** *(Faculty)* **:** FTIK-UB		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** [nama mata kuliah prasyarat, bilamana ada]	**Kredit** *(Credit)* **:** 3 SKS		
	Kuliah *(Lecture)* **:** 3 SKS	**Tutorial :** 0	**Praktikum** *(Practicum)***:** 0
Revisi *(Revision Status)***:** R-1	**Semester Ganjil/~~Genap~~*** *(Odd/~~Even~~ Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: Hoga Saragih, Dr., S.T., M.T.			

COURSE DESCRIPTION

This course provides a complete and straightforward coverage of the basics of electrical component and circuits. Fundamental circuit laws and analysis methods are discussed in a variety of basic circuits. Major topics included are: Ohm's Law, Kirchhoff's Laws, magnetism and electromagnetism, reactance, impedance, resonance, and passive filters

COURSE OBJECTIVES

Show list of course objectives. The list usually consists of five or six statements, general but comprehensive. The list may include specific skills or techniques students are expected to master after completing the course.

METHODS OF INSTRUCTIONS

Understand the basic concepts of electric circuits, power and energy. Apply the rules of parallel and series resistors and source superposition to simplify or solve resistive circuits.

- Solve resistive circuits using the nodal and mesh methods. Understand the function of dependent sources and solve simple circuits with dependent sources. Understand the physical laws governing capacitors and inductors. Understand the meaning of the time constant; calculate the time constant of a RC or RL circuit.
- Obtain the circuit forced response to constant inputs. Obtain the circuit solution to multiple switching operations. Understand the natural response of RLC circuits and the distinction between over-damped, critically damped and under-damped responses.
- Understand the concept of sinusoidal steady state, phasor, and impedance. Solve a circuit in the sinusoidal steady state and find the voltage and current phasors.
- Understand the passive filter use various combinations of resistors, capacitors, and inductors.

ATTENDANCE REQUIREMENT

In compliance with academic rules.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Principles of Electric Circuit: Conventional Current Version, Ninth Edition. Thomas L. Floyd 2010. Prentice Hall, Upper Saddle River, New Jersey.

COURSE OUTLINE

This section should show topics, sub-topics, specific method of instruction/ delivery and material references.

Session	Topic & Sub-topics	Methods of delivery	Material references
1	Voltage, Current, and Resistance		[# Chapter 2 Page 20]
2	Ohm's Law		[# Chapter 2 Page 20]
3	Energy and Power		[# Chapter 4 Page 100]
4	Series Circuits		[# Chapter 5 Page 122]
5	Parallel Circuits		[# Chapter 6 Page 178]
6	Series-Parallel Circuits		[# Chapter 7 Page 231]
7	Magnetism and Electromagnetism		[# Chapter 10 Page 376]
MIDDLE SEMESTER TEST			
8	Introduction to Alternating Current and Voltage		[#Chapter 11 Page 420]
9	Capacitors		[#Chapter 12 Page 484]
10	Inductors		[#Chapter 13 Page 544]
11	RC Circuits		[#Chapter 15 Page 623]
12	RL Circuits		[#Chapter 16 Page 701]
13	RLC Circuits and Resonance		[#Chapter 17 Page 751]
14	Passive Filters		[#Chapter 18 Page 803]
FINAL SEMESTER TEST			

Dipersiapkan oleh (*Prepared by*) :

Nama (*Name*) : Hoga Saragih, Dr., ST., M.T.

Jabatan (*Position*) :

Tanggal (*Date*) :

Disahkan oleh (*Certified by*) :

Nama (*Name*) :

Jabatan (*Position*) : Benfano Soewito, M.Sc., Ph.D.

Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* TIF002	**Nama Mata Kuliah** *(Course Name)* **:** Kalkulus 1 / Calculus 1		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Fakultas Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** N/A	**Kredit** *(Credit)* **:** 2		
	Kuliah *(Lecture)* **:** 2	**Tutorial :** --	**Praktikum** *(Practicum)***:** --
Revisi *(Revision Status)***: R-01**	**Semester Ganjil/Genap*** *(Odd/Even Semester*)* **Tahun Akademik 2012/2013** *(AY* 2012/2013*)*		
Lecturer's name:			

COURSE DESCRIPTION

This course will cover the beginner-level calculus materials: an introduction to analytic geometry, differentiation of algebraic and transcendental functions, applications of differentiation, introduction to integration, techniques of integration, and applications of definite integrals.

COURSE OBJECTIVES

The objectives of this course are as follows:

- Understand the concept of inverse functions and related techniques.
- Understand the concept of limits and its related topics such as continuity. Then understanding the concept of derivative as a consequence of applying the limit as a tool in solving the problem of finding the instantaneous rate of change. Then learn the techniques of differentiation of functions such as trigonometric, inverse trigonometric, exponential, and logarithmic function.
- Understand the behavior of the function through exploring its first and second derivatives.
- Understand the concept of integration as a tool in solving the problem of finding the area under the curve of a function.

Upon completion of the course the student should be able to:

1. Use techniques to compute limits of various kinds of functions.
2. Relate the concepts of limit and continuity and apply some consequences of continuity such as the Intermediate Value Theorem.
3. Recognize the existence of the vertical, horizontal, or slant asymptotes.
4. Use the techniques of computing limits to define the derivative of a function at some point as the instantaneous rate of change.
5. Derive the rules of differentiation and use them to find the derivatives of various kinds of functions of single variable.
6. Apply the Mean value Theorems.
7. Use the first and the second derivatives to: find the minimum and the maximum values of a function, find the intervals of increasing and decreasing, and find the intervals of concavity. Then using this information to draw a sketch of the curve of the given function.
8. Use the techniques of computing limits to define the integration of a function as the area under its curve.
9. Learn the Fundamental Theorem of calculus and use it to define the definite integral as the anti-derivate.
10. Integrate various kinds of functions by using the rules of integration and the substitution as first technique of substitution.

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

It is imperative that students take an active interest in the course. To succeed in this course, students must read, think, and write in an analytical manner and this takes time and practice. Such practice can only be achieved by working exercises. When troubles arise, and they will, the student must ask questions which may be directed to the instructor or other students in a variety of ways.

Students are also encouraged to work together on problem sets as part of their exercises. However, individual must ultimately demonstrate the understanding of the material by writing up his/her own solutions without the help of other students or their written work.

On average students need to spend, at least, 9 hours of study and preparation per week for this course.

ATTENDANCE REQUIREMENT

Comply with academic rules. Absence from lectures shall not exceed 22%. Students who exceed the 22% limit without a medical or emergency excuse acceptable to and approved by the Dean of the Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

A. George B. Thomas, Maurice D. Weir, Joel R. Hass; Thomas' Calculus 12th Ed.; Pearson Education, Inc., 2010.
B. Stewart, James (1999), Calculus : Early Transcendental, 4th Ed, Brooks Cole

COURSE OUTLINE

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
1	Numbers systems	1. Natural Numbers	Lecture, Class room discussion	A. AP-1, B. Ch. 1
		2. Integer Numbers		
		3. Whole Numbers		
		4. Rational Numbers		
		5. Irrational Numbers		
		6. Complex Numbers		
1	Lines	1. Gradient	Lecture, Class room discussion	A. AP-1, B. Ch. 1
		2. Line equation		
		3. Parallel lines		
		4. Perpendicular lines		
1	Distance, circles	1. The formula for the distance of		A. AP-1,

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
	and paraboles	two points in the field		B. Ch. 1
		2. Equation of a circle with center (0,0)		
		3. Equation of a circle with center (a, b)		
		4. General equation of a circle		
		5. General equation of parabole		
		6. Drawing parabole		
2	Functions	1. The concept of function	Lecture, Class room discussion	A. Ch. 1, B. Ch. 1
		2. Floor and ceiling functions		
		3. Constant function		
		4. Linear function		
		5. Odd and even functions		
		6. Combination function		
		7. Composition of functions		
		8. Trigonometry Functions		
3	Limit	1. The concept of limit	Lecture, Class room discussion	A. Ch. 2, B. Ch. 2
		2. Limit definition		
		3. One-Sided Limit: left-side & right-side limit		
		4. Limit rules		
		5. Limit of algebraic functions		
		6. Limit of trigonometric functions		
4	Continuity, tangents, and derivatives	1. Definition of continuity at a point	Lecture, Class room discussion	A. Ch. 2, B. Ch. 2
		2. Continuity tests		
		3. Continuous function		
		4. Slope and tangent line		
5	Derivatives of algebraic functions	1. Derivation rules	Lecture, Class room discussion	A. Ch. 3, B. Ch. 3
		2. Chain rules		
		3. Implicit differentiation		
6	Applications of Derivatives	1. Trig functions and their derivatives	Lecture, Class room discussion	A. Ch. 4, B. Ch. 3
		2. Inverse functions and their derivatives		
		3. Natural logarithmic function and its derivatives		
		4. Logarithmic function and its derivatives		
		5. Exponential functions and its derivatives		
		6. The function of rank (a^x) and its derivatives		
7	Aplikasi turunan	1. Maximum	Lecture, Class room discussion	A. Ch. 4, B. Ch. 4
		2. Minimum		
		3. Monotonicity		
		4. Concavity		
		5. Mean value		
MID-EXAM				
8	Integral	1. Lower sum approach	Lecture, Class room discussion	A. Ch. 5, B. Ch. 5
		2. Upper sum approach		
		3. Mid point approach		
9	Riemann Integral	1. Reimann sum	Lecture, Class room	A. Ch. 5

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
		2. Integral Notation	discussion	B. Ch. 5
		3. Concept of Riemann integral		
10	Basic integration of algebraic and trigonometric functions	1. Integral formulae for basic algebraic functions	Lecture, Class room discussion	A. Ch. 7 B. Ch. 7
		2. Integral formulae for trigonometric functions		
11	Integrals of transcendental functions	1. Integrals of natural logarithmic functions	Lecture, Class room discussion	A. Ch. 7
		2. Integrals of logarithmic functions		
		3. Integrals of exponential functions		
		4. Integrals of function of rank		
12	Techniques of integration	1. Substitution	Lecture, Class room discussion	A.Ch. 8 B. Ch. 7
		2. Partial Integral formulae		
		3. Partial Integral with tabulation		
13	Techniques of integration	1. Trigonometric substitution	Lecture, Class room discussion	A. Ch. 8 B. Ch. 7
		2. Integration of rational functions		
14	Applications of definite integrals	1. Areas under the curve	Lecture, Class room discussion	A. Ch. 6 B. Ch. 6
		2. Volumes under the curve		
		3. Areas between curves		
		4. Volumes between curves		
FINAL-EXAM				

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) : Irwan Prasetya Gunawan
Jabatan (*Position*) : Dosen
Tanggal (*Date*) : 09/08/2012

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito
Jabatan (*Position*) : Ketua Program Studi
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* SIF101/TIF107	**Nama Mata Kuliah** *(Course Name)* **:** Pengantar teknologi Informasi / Introduction to Information Teknologi		
Program Studi *(Study Program)* **:** Sistem Informasi/Teknik Informatika	**Fakultas** *(Faculty)* **:** Fakultas Teknik dan Ilmu Komputer		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** Tidak ada	**Kredit** *(Credit)* **:** 3 SKS		
	Kuliah *(Lecture)* **:** 3 SKS	**Tutorial :**	**Praktikum** *(Practicum)***:**
Revisi *(Revision Status)***:** R-1	**Semester Ganjil/Genap***Ganjil* **Tahun Akademik 2012/2013**		
Lecturer's name: Yudhiansyah Ahmadin, ST, M.T.I			

COURSE DESCRIPTION

This course is aimed to give students the fundamental understanding about information technology. The introduction started from the history of information technology developments, hardware, software, usage and implementations, related issues and trend & innovation in information technology.

COURSE OBJECTIVES

- Demonstrate understanding of the fundamental aspect of hardware, software and how the systems formed.
- Demonstrate understanding the usage of computers and application programs to benefit of human being.
- Demonstrate competency in the fundamentals of algorithm, programming, and problem solving.
- Demonstrate competency in the usage of networks, internet, web and its security
- Demonstrate understanding of issues and future development related to information technology.

METHODS OF INSTRUCTIONS

Class review questions to be completed in the class or as homework.

Class Review Questions. These include short answers (**S.A.**) and Case Study (**C.S.**) to provide feedback of the students' understanding topic by topic.

Mid-Test and Final Test. These written tests will evaluate the students' level of knowledge and skills on this course.

ATTENDANCE REQUIREMENT

The lecturer may use lectures, questions from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Final Test	40%
Mid-test	30%
Lab report / Assignment	20%
Attandace	10%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

[1]. Discovering Computers 2011 – Living in a Digital World
Cengage Technology 2011
Gary B. Shelly, Misty E. Vermaat.

[2]. Fluency with Information Technology – Skills, Concepts & Capabilities,
4th Editions, Pearson 2011
Lawrence Snyder.

[3]. Information Technology for Management,
7th Edition, Wiley 2010
Efraim Turban, Linda Volonio

COURSE OUTLINE

This section should show topics, sub-topics, specific method of instruction/ delivery and material references.

Session	Topic & Sub-topics	Methods of delivery	Material references
1	Introduction to Computers		[1], chapter 1, p.2-71.
2	Internet and World Wide Web		[1], chapter 2, p.72-139
3	Application Software		[1], chapter 3, p.140-207
4	The Component of System Unit		[1], chapter 4, p.208-255
5	Input		[1], chapter 5, p.256-301.
6	Output		[1], chapter 6, p.302-349
7	Storage		[1], chapter 7, p.350-395
MIDDLE SEMESTER TEST			
8	Operating Systems and Utility Programs		[1], chapter 8, p. 396-457
9	Communications and Networks		[1], chapter 9, p.458-511

SYLLABUS

Session	Topic & Sub-topics	Methods of delivery	Material references
10	Database Management		[1], chapter 10, p.512-553
11	Computer Security, Safety, Ethics, and Privacy		[1], chapter 11, p.554-617
12	Information System Development		[1], chapter 12, p. 618-661
13	Programming Language and Program Development		[1], chapter 13, p.662-717
14	Enterprise Computing		[1], chapter 14, p.718-781
FINAL SEMESTER TEST			

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) :
Jabatan (*Position*) : Yudhiansyah Ahmadin ST, M.T.I.
Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) :
Jabatan (*Position*) : [Ketua Program Studi]
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* TIF008	**Nama Mata Kuliah** *(Course Name)* **:** Aljabar Linier / Linear Algebra		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Fakultas Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** --	**Kredit** *(Credit)* **:** 2		
	Kuliah *(Lecture)* **:** 2	**Tutorial :** --	**Praktikum** *(Practicum)***:** --
Revisi *(Revision Status)***: R-01**	**Semester Ganjil/Genap*** *(Odd/Even Semester*)* **Tahun Akademik 2012/2013** *(AY* 2012/2013*)*		
Lecturer's name:			

COURSE DESCRIPTION

The course provides an introduction to the concepts and theories that form the foundation of Linear Algebra and Matrix.

COURSE OBJECTIVES

Upon completion of the course the student should be able to:

- Demonstrate understanding of Matrices and System of Equation.
- Demonstrate understanding of Determinants Matrice.
- Demonstrate understanding of Vector Space.
- Demonstrate understanding of Linear Transformation.
- Demonstrate understanding ofOrthogonality
- Demonstrate understanding of Eigenvalues.
- Demonstrate understanding of Numerical Linear Algebra.

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

It is imperative that students take an active interest in the course. To succeed in this course, students must read, think, and write in an analytical manner and this takes time and practice. Such practice can only be achieved by working exercises. When troubles arise, and they will, the student must ask questions which may be directed to the instructor or other students in a variety of ways.

Students are also encouraged to work together on problem sets as part of their exercises. However, individual must ultimately demonstrate the understanding of the material by writing up his/her own solutions without the help of other students or their written work.

On average students need to spend, at least, 6 hours of study and preparation per week for this course.

ATTENDANCE REQUIREMENT

Comply with academic rules.

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session.

Absence from lectures shall not exceed 22%. Students who exceed the 22% limit without a medical or emergency excuse acceptable to and approved by the Dean of the Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

1. Leon, S.J. (2010) *Liniear Algebra with application* ,Eight Edition, International Edition, Pearson USA.

COURSE OUTLINE

Note: all materials are delivered by means of in-class lectures and class room discussions

Session	Topics/Sub-Topics	Ref.	Assignment
1	Matrice and System of Equation 1	**[T1],** Chap 1, p1-p43	**[T1],**Exercise 1.1 no 7,8, Exercise 1.2 no 12, Exercise 1.3 no 1
2	Matrice and System of Equation 2	**[T1],** Chap 1, p44-p76	**[T1],** Exercise 1.4 no 7, Exercise 1.5 no 3,11, Exercise 1.6 no 5
3	Determinants	**[T1],** Chap 2, p84-p99	**[T1],** Exercise 2.1 no2,3, Exercise 2.2 no 1,3.
4	Vector Spaces 1	**[T1],** Chap 3, p110-p137	**[T1],** Exercise 3.1 no1,2, Exercise 3.2 no 4, Exercise 3.3 no 2.
5	Vector Spaces 2	**[T1],** Chap 3, p138-p161	**[T1],** Exercise 3.4 no 3, Exercise3.5 no 1,2 , Exercise 3.6 no 1.
6	Linear Transformation	**[T1],** Chap 4, p166-189	**[T1],** Exercise 4.1 no4,5, Exercise 4.2 no 4 , Exercise 4.3 no 4.
7	Orthogonality 1	**[T1],** Chap 5, p198-p240	**[T1],** Exercise 5.1 no17 , Exercise 5.2 no 1 , Exercise 5.3 no 3,Exercise 5.4 no 4.
SEMESTER MID TEST			
8	Orthogonality 2	**[T1],** Chap 5, p241-p276	**[T1],** Exercise 5.5 no 2,6, Exercise 5.6 no 5, Exercise 5.7 no 9.
9	Eigenvalues 1	**[T1],** Chap 6, p282-p323	**[T1],** Exercise 6.1 no1, Exercise6.2 no 1,2, Exercise 6.3 no 28.

Session	Topics/Sub-Topics	Ref.	Assignment
10	Eigenvalues 2	**[T1],** Chap 6, p324-p350	**[T1],** Exercise 6.4 no 1,4, Exercise 6.5 no 2,3.
11	Eigenvalues 3	**[T1],** Chap 6, p351-377	**[T1],** Exercise 6.6 no1,3, Exercise 6.7 no 1,4 , Exercise 6.8 no 6.
12	Numerical linear algebra 1	**[T1],** Chap 7, p386-p397	**[T1],** Exercise 7.1 no1,3, Exercise 7.2 no 2,8.
13	Numerical linear algebra 2	**[T1],** Chap 7, p398-p427	**[T1],** Exercise 7.3 no 1,4, Exercise 7.4 no 1,4, Exercise 7.5 no 1.
14	Numerical linear algebra 3	**[T1],** Chap 7, p428-p447	**[T1],** Exercise 7.6 no2,3, Exercise 7.7 no 1,
SEMESTER FINAL TEST			

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) : Irwan Prasetya Gunawan
Jabatan (*Position*) : Dosen
Tanggal (*Date*) : 29/08/2012

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito
Jabatan (*Position*) : Ketua Program Studi
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* UNI104	**Nama Mata Kuliah** *(Course Name)* **:** English for Academic Purposes 1		
Program Studi *(Study Program)* **:** Komunikasi,Politik,Manajemen,Akunting,Teknik Informatika,Sistem informatika,Teknologi pangan,Teknik lingkungan,Teknik sipil	**Fakultas** *(Faculty)* **:** FTIK,FEIS		
Mata Kuliah Para-syarat *(Course Prerequisite)* **:** [High School English. Mark of English is seven)	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** -	**Praktikum** *(Practicum)***:** -
Revisi *(Revision Status)***:** R-1	**Semester Ganjil/Genap*** *(Odd/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: a. Astrid Meliasari, Ph.D b. Azis Malek, M.Sc c. Riyanto,Drs.,M.A d. Rahmarni Sawitri,SS,SE e. Holilla Hatta, S.Pd.,MM. f. Cornelius Sembiring Meliala, MA g. Rini Anggraini, SH., M.A			

COURSE DESCRIPTION

The course covers the areas of Speaking, Reading, Listening and Writing (grammar). Each unit has different topic. The topics were chosen to include many situations that people experience. They will help you with your conversational English as well as introducing the students to more academic English.

COURSE OBJECTIVES

This course of EAP 1 is purposively offers some topics that relevant to give a comprehensive knowledge of English to students. The objectives of this EAP 1 are to assist students to comprehend, question, evaluate and produce a range of discourses which are relevant to academic contexts.

METHODS OF INSTRUCTIONS

This courses will be conducted by general teaching (GT) that combine with a "student-centered learning" (SCL) method. Class will be started with a speaking activity. The course will give more attention on the student learning process by using many discussions on the topic that we provide.

ATTENDANCE REQUIREMENT

Comply with academic rules.

1. Student should attend the 80% of all courses
2. Twenty minutes late is forbidden to fill the list of attendance

UNIVERSITAS BAKRIE

SYLLABUS

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

English for Academic Purposes 1 (handbook)

COURSE OUTLINE

.

Session	Topic & Sub-topics	Methods of delivery	Material references
1	**Communication :** 1. Profile an Author 2.It's easier said than done 3. Sentences 4. Practice Test .	-Discussion (in group) -Individual work	Chapter 1: p.1 - 8
2	**Education:** 1. Talking about University 2. Maria Montessori 3. Relative Clause 4. Practice Test	-Discussion (in pair) -Role Play -Individual work	Chapter 2: p. 9 - 17
3	**Jobs and Work:** 1. Skills and Personal Qualities 2. The Ideal Job 3. Present Perfect 4. Practice Test	-Discussion (in pair) -Role Play -Individual work	Chapter 2: p. 18 - 27
4	**Time Management:** 1. The history of Fiat 2. Balloonist 3. Future Tense 4. Practice Test	-Discussion (in group) -Individual work	Chapter 3: p. 28 - 36
5	**Health:** 1. Working in a clinic 2. Organic produce vs Regular produce 3. Modals 4. Practice Test	-Discussion (in group) -Role Play -Individual work	Chapter 4: p. 37 - 49
6	**The Environment** 1. Talking about Globalization 2.Polar bears 3. Passive Voice 4. Practice Test	-Discussion (in pair) -Individual work	Chapter 6: p. 50 - 58
7	PRESENTATION		
MIDDLE SEMESTER TEST			

SYLLABUS

Session	Topic & Sub-topics	Methods of delivery	Material references
9	**City Life:** 1. Talking about your local area 2. Commonwealth economics for a crowded planet 3. Degrees of Comparison 4. Practice Test	-Discussion (in pair) -Individual work	Chapter 7: p.61 - 68
10	**Art:** 1. Discussing Exhibition 2. Artist of the year: Margaret Tafoya 3. If-Clauses 4. Practice Test	-Discussion (in pair) -Individual work	Chapter 8: p. 69 - 75
11	**Advertising:** 1. Talking about the advertisements 2. Advertising – Then and Now 3. Adjectives – word order 4. Practice Test	-Discussion (in group) -Role Play) -Individual work	Chapter 9: p. 76 - 81
12	**Emotions:** 1. Song Appreciation 2. In your face 3. Participle Adjectives 4. Practice Test	-Discussion (in group) -Individual work	Chapter 10: p. 82 - 89
13	**Shopping:** 1. Placing an order 2. UK develops taste for fair trade 3. Statements in Reported Speech 4. Practice Test	-Discussion (in pair) -Role Play -Individual work	Chapter 11: p. 90 - 98
14	**Crime and Justice:** 1. Talking about Security 2. Dublin's first cyber criminal 3. Adverb Clause 4. Practice Test	-Discussion (in group) -Role Play -Individual work	Chapter 12: p. 99 - 106
15	PRESENTATION		
FINAL SEMESTER TEST			

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) :
Jabatan (*Position*) : Astrid Meliasari, Ph.D
Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) :
Jabatan (*Position*) : [Ketua Program Studix]
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* **FTK102**	**Nama Mata Kuliah** *(Course Name)* **:** **Statistika Deskritif - Descriptive Statistics**		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** -	**Kredit** *(Credit)* **:** 2		
	Kuliah *(Lecture)* **:** 2	**Tutorial :** 0	**Praktikum** *(Practicum)*: 0
Revisi *(Revision Status)*: R-1	**Semester Ganjil/~~Genap~~*** *(Odd/~~Even~~ Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: Ir. M.Th.Anitawati, M.S.,M.Sc.			

COURSE DESCRIPTION

This course introduces students to the data acquisition and analysis, tabular, graphical and numerical methods of descriptive statistics. The students will also learn about probability and use probability as a tool for anticipating what the distribution of data may look like under a set of assumptions.

COURSE OBJECTIVES

Upon completion of this course the student should be able to :

- Collect, organize, present, analyze, and interpret data using numerical measures and graphical presentations
- Calculate and interpret measures of central tendency and variability.
- Calculate probabilities using basic rules and use probability as a measure of reliability for an inference.
- Use discrete and continuous probability distributions in probability applications.
- Explain probability sampling and sampling distributions and describe their uses.

METHODS OF INSTRUCTIONS

Class instruction includes lecture, discussion, and problem solving. Students are expected to have read the material before class.

ATTENDANCE REQUIREMENT

Comply with academic rules.

ASSESSMENT

Mid test	30%
Final test	40%
Others	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

1. Statistics, Eleventh Edition. James T. McClave and Terry Sincich. 2009. Prentice Hall, Upper Saddle River, New Jersey.
2. Statistics. Principles and Methods. Sixth Edition. Richard A. Johnson and Gouri K. Bhattacharyya. 2011. John Wiley & Sons,Inc. Singapore

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
1.	**STATISTICS, DATA, AND STATISTICAL THINKING** a. The Science of Statistics b. Types of Statistical Applications c. Fundamentals Elements of Statistics d. Types of Data e. Collecting Data f. The Role of Statistics in Critical Thinking		Chapter 1 Page 2 - 25	Problems : 1.1, 1.2, 1.4, 1.7, 1.8. 1.15, 1.24, 1.28, 1.32
2.	**METHODS FOR DESCRIBING SETS OF DATA** a. Describing Qualitative Data b. Graphical Methods for Describing Quantitative Data		Chapter 2 Page 24 - 50	Problems : 2.5, 2.7, 2.13, 2.23, 2.28
3.	**METHODS FOR DESCRIBING SETS OF DATA (cont)** a. Numerical Measures of Central Tendency b. Numerical Measures of Variability		Chapter 2 Page 51 - 67	Problems : 2.46, 2.49, 2.57, 2.62, 2.70, 2.72, 2.81
4.	**METHODS FOR DESCRIBING SETS OF DATA (cont)** a. Interpreting the Standard Deviation b. Numerical Measures of Relative Standing c. Methods for Detecting Outliers d. Graphing Bivariate Relationships e. Distorting the Truth with Descriptive Techniques		Chapter 2 Page 68 - 111	Problems : 2.87, 2.95, 2.107, 2.109, 2.136, 2.138, 2.139
5.	**PROBABILITY** a. Events, Sample Spaces, and		Chapter 3 Page 112 -	Problems : 3.2, 3.4, 3.10, 3.14,

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	Probability b. Unions and Intersections c. Complementary Events		131	3.17,3.22, 3.26,
6.	**PROBABILITY (cont)** a. The Additive Rule and Mutually Exclusive Events b. Conditional Probability c. The Multiplicative Rule and Independent Events		Chapter 3 Page 132 - 153	Problems : 3.33, 3.35,3.38,3.45,3. 47, 3.58, 3.65, 3.68, 3.76
7.	**PROBABILITY (cont)** a. Random Sampling b. Some Counting Rules c. Bayes' Rule		Chapter 3 Page 154 - 179	Problems ; 3.99, 3.102, 3.117, 3.132, 3.135
	MID SEMESTER TEST			
8.	DISCRETE RANDOM VARIABLES a. Two Types of Random Variables b. Probability Distributions for Discrete Random Variables c. Expected Values of Discrete Random Variables		Chapter 4 Page 180 – 196	Problems : 4.1, 4.2, 4.4, 4.15, 4.19, 4.25, 4.32, 4.44,
9.	**DISCRETE RANDOM VARIABLES (cont)** a. The Binomial Random Variable **b.** The Poisson Random Variable		Chapter 4 Page 196 – 216	Problems : 4.63, 4.67,4.79, 4. 85, 4.90,
10.	**DISCRETE RANDOM VARIABLES (cont) and CONTINUOUS RANDOM VARIABLES** a. The Hypergeometric Random Variable b. Continuous Probability Distribution **c.** The Uniform Distribution		Chapter 4 Page 216 – 225 Chapter 5 Page 226 - 233	Problems : 4.100, 4.101, 4.107, 5.5, 5.6, 5.9, 5.16
11.	**CONTINUOUS RANDOM VARIABLES (cont)** a. The Normal Distribution **b.** Descriptive Methods for Assessing Normality		Chapter 5 Page 233 - 249	Problems : 5.23, 5.25, 5.29, 5.37, 5.39, 5.43, 5.45
12.	**SAMPLING DISTRIBUTIONS** **a.** The Concept of sampling Distribution		Chapter 6 Page 276 - 284	Problems : 6.1, 6.2, 6.3
13.	**SAMPLING DISTRIBUTIONS**		Chapter 6	Problems : 6.10,

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	(cont) a. Properties of Sampling Distributions : Unbiasedness and Minimum Variance		Page 284 - 288	6.11, 6.15, 6.19
14.	**SAMPLING DISTRIBUTIONS (cont)** a. The Sampling Distribution of x and The Central Limit Theorem		Chapter 6 Page 288 - 303	Problems : 6.22, 6.23, 6.28, 6.31, 6.34, 6.38
	FINAL SEMESTER TEST			

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) :

Jabatan (*Position*) : [koordinator mata kuliah]

Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito., Ph.D

Jabatan (*Position*) : Ketua Program Studi TIF

Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* **FTK103**	**Nama Mata Kuliah** *(Course Name)* **:** **Pemrograman Visual - Visual Programming**[1)]		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** FTK101 - Algorithms and Programming	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** 0	**Praktikum** *(Practicum)*: 0
Revisi *(Revision Status)*: R-1	**Semester ~~Ganjil~~/Genap*** *(~~Odd~~/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: • Benfano Soewito, M.Sc., Ph.D. • Manik Hapsara, Ph.D.			

COURSE DESCRIPTION

This course is intended to use in an introductory programming course. It is designed for student to understand the Visual Basic 2010 programming language. Major topics are included: problem solving and control statements, arrays, files, windows forms GUI, and graphics.

COURSE OBJECTIVES

Upon completion of the course the student should be able to:

- Understand the basic concepts of the visual studio integrated development environment (IDE) that assist student in writing, running and debugging visual basic programs.
- Create and demonstrate how programs can display information on the screen and obtain information from the user at the keyboard for processing. Understand the graphical user interface (GUI) to allow users to interact visually with the programs.
- Understand both single dimension and multi-dimensional variable arrays. Starting with creating and accessing arrays, then perform more complex array manipulations, including summing the elements of array, using arrays to summarize survey results, searching arrays for specific values and sorting arrays so their elements are in ascending order.
- Become familiar with sequential-access file processing, write to and read from files. To use file processing to implement a business application and to use classes StreamWriter and StreamReader to write text to and read text from files

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

ATTENDANCE REQUIREMENT

Comply with academic rules.

ASSESSMENT

Mid test	30%
Final test	40%
Lab exercises	15%
Others	15%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

- Visual Basic 2010 How to Program. Paul Deitel and Harvey Deiteil. Pearson Education, Inc., Prentice Hall, Upper Saddle River, New Jersey 07458.

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
1.	**Introduction to Computers, the Internet and Visual Bacic** a. Computer Organization b. Hardware Trends c. Visual Basic d. The Internet and the World Wide Web e. Introduction to Microsoft.NET		Chapter 1 Page 33	Exercises 1.3 to 1.17
2.	**Dive Into Visual Basic 2010 Express** a. Menu Bar and Toolbar b. Navigating the Visual Studio IDE c. Using Visual Programming		Chapter 2 Page 56	Exercise 2.3 to 2.7
3.	**Introduction to Visual Basic Programming 1** a. Programmatically Displaying Text in a Label b. Addition Program c. Building the Addition Program		Chapter 3.1 to 3.4 Page 92	Lab
4.	**Introduction to Visual Basic Programming 2** a. Memory Concepts b. Arithmetic c. Decision Making: Equality and		Chapter 3.5 to 3.8 Page 111	Lab

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	Relational Operators			
5.	**Introduction to Problem Solving and Control Statements** a. Algorithms and Pseudocode b. Control Structure c. Repetition Statements If…Then d. Using the Debugger: Locating a Logic Error		Chapter 4 Page 135	Lab
6.	**Problem Solving and Control Statements: Part 2** a. Repetition Statements For..Next b. Examples and Application		Chapter 5.1 to 5.4 Page 181	Lab
7.	**Problem Solving and Control Statements: Part 2 continue** a. Formulating Algorithms: Nested Repetition Statements b. Select…Case and Do…Loop While c. Logical Operators		Chapter 5.5 to 5.12 Page 187	Lab
	MID SEMESTER TEST			
8.	**Methods Part 1** a. Classes and Methods b. Subroutines: Methods That Do Not Return Value c. Functions: Methods That Return Value d. Implicit Argument Conversions e. Passing Arguments: Pass-by-Value Vs. Pass-by-Reference f. Scope of Declarations		Chapter 6.1 to 6.8 Page 223	Lab
9.	**Methods Part 2** a. Case Study: Random-Number Generation b. Case Study: A Game of Chance c. Method Overloading d. Optional Parameters **e.** Using the Debugger: Debugging Commands		Chapter 6.9 to 6.14 Page 241	Lab
10.	**Arrays 1** a. Declaring and Allocating Arrays b. Initializing the Values in an Array c. Summing the Elements of an Array d. Using Arrays to Analyze		Chapter 7.1 to 7.8 Page 273	Lab

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	Survey Results **e.** Case Study: Flag Quiz			
11.	**Arrays 2** a. Passing an Arrays to a Method b. For Each…Next Repetition Statement c. Sorting an Array with Method Sort of Class Arrays d. Searching an Array with Linear Search e. Rectangular Arrays f. Case Study: Maintaining Grades Using a Rectangular Array **g.** Resizing an Array with the ReDim Statement		Chapter 7.9 to 7.17 Page 287	Lab
12.	**Files** a. Data Hierarchy b. Files and Streams c. Test-Driving the Credit Inquiry Application d. Writing Data Sequentially to a Text File **e.** Building Menus with the Windows Form Designer		Chapter 8 Page 321	Lab
13.	**Graphics and Multimedia** a. Drawing Classes and the Coordinate System b. Graphics Contexts and Graphics Objects c. Drawing Lines, Rectangles and Ovals d. Drawing Arcs, Polygons and Polylines e. Loading, Displaying and Scaling Images		Chapter 15 Page 583	Lab
14.	**Windows Form GUI: A Deeper Look** a. Controls and Components b. Creating Event Handlers c. Control Properties and Layout d. Mouse-Event and Keyboard-Event Handling e. Multiple Document Interface (MDI) Windows		Chapter 14 Page 527	Lab
	FINAL SEMESTER TEST			

LAB OUTLINE

Session	Topic	Textbook	Exercise
LC-1	General Introduction	Chapter 1	General Introduction
LC-2	Visual Basic Introduction	Page 89-90	2.9, 2.10, 2.11
LC-3	Addition and Multiplication Program	Page 130-131	3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10
LC-4	Displaying Tabular Data, Sorting and concatenating String	Page 131-132	3.11, 3.12, 3.13, 3.14
LC-5	Introduction to Problem Solving and Control Statements	Page 178-180	4.11 to 4.18
LC-6	Problem Solving and Control Statements: Part 2	Page 216-217	5.5, 5.6, 5.7
LC-7	Problem Solving and Control Statements: Part 2 continue	Page 217-219	5.8 to 5.15
MID SEMESTER TEST			
LC-8	Methods 1	Page 268-269	6.6 to 6.10
LC-9	Methods 2	Page 269-270	6.11 to 6.16
LC-10	Arrays 1	Page 317-318	7.4 to 7.9
LC-11	Arrays 2	Page 318-319	7.10 to 7.15
LC-12	Files	Page 346	8.2 to 8.5
LC-13	Graphics and Multimedia	Page 624	15.3 to 15.8
LC-14	Windows Form GUI: A Deeper Look	Page 581-582	14.3 to 14.5
FINAL SEMESTER TEST			

Project Group

Application	10%
Report Project and Manual	5%

Dipersiapkan oleh *(Prepared by* **)**:			**Disahkan oleh** *(Certified by)* :		
Nama (*Name*)	:		Nama (*Name*)	:	Benfano Soewito., Ph.D
Jabatan (*Position*)	:	[koordinator mata kuliah]	Jabatan (*Position*)	:	Ketua Program Studi TIF
Tanggal (*Date*)	:		Tanggal (*Date*)	:	

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* **TIF103**	**Nama Mata Kuliah** *(Course Name)* **:** **Matematika Diskrit / Descrete Mathematics**		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** -	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** 0	**Praktikum** *(Practicum)***:** 0
Revisi *(Revision Status)***:** R-1	**Semester ~~Ganjil~~/Genap*** *(~~Odd~~/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: • Irwan Prasetya Gunawan, Ph.D.			

COURSE DESCRIPTION

This course will cover the fundamental tools of discrete mathematics: logic, sets, proofs, number theory, recursion, induction, combinatorics, recurrence relations and graph theory, trees, and Boolean algebra.

COURSE OBJECTIVES

Upon completion of the course the student should be able to :

- Understand the foundation of discrete mathematics: sets, logic, sequences.
- Understand the concept of mathematical proofs and induction
- Understand the concept of number theory and its applications: Euclidian Algorithm, RSA encryption
- Understand the concept of combinatorics: permutations, combinations, elementary finite probability, recurrence relations
- Understand the basic concept of graph theory and its applications: isomorphism, planarity, circuits, trees, directed graphs, shortest-path algorithm
- Understand the basic concept of trees and its applications, tree transversal, spanning trees, and minimum spanning trees
- Understand the basic concept of Boolean algebra, Boolean functions, and its applications

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

ATTENDANCE REQUIREMENT

Comply with academic rules.

ASSESSMENT

Mid test	30%
Final test	40%
Others	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

1. Discrete Mathematics 7th Ed., Richard Johnsonbaugh, Pearson, 2009
2. Discrete Mathematics and Its Applications 4th Ed., Kenneth H. Rosen, McGraw-Hill International Ed.
3. Discrete Mathematics with Applications, Susanna S. Epp.

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
1.	**Introduction, logic** • Propositions • Conditional propositions • Logical Equivalence • Predicates and Quantifiers • Nested Quantifiers		[1] Ch. 1.2-1.6 [2] Ch. 1.1-1.4	**[1] Sec 1.2** (pp. 20): No 2, 5, 11, 13, 14, 18, 19, 20, 23, 26, 29, 32, 35, 38, 40, 42, 44, 46, 48, 50. **[1] Sec 1.3** (pp. 30): No. 1, 3, 5, 10, 13, 15, 16, 18, 20, 21, 22, 25, 27, 32, 34,37,38, 40, 42, 44, 49, 50, 52, 55, 57, 59, 62, 63, 66, 67, 69, 71, 73, 74, 75. **[1] Sec 1.4** (pp. 35): no. 3,4,6,7,10, 13,14,15, 18,20, 21,22,25,26 **[1] Sec 1.5** (pp. 50): no. 1, 3, 5, 8, 10, 12, 14, 16, 18, 21, 23, 25, 27, 28, 30, 31, 33, 36, 38, 40, 42, 44, 46, 49, 51, 53, 54, 55, 57, 58, 60, 62, 72 **[1] Sec 1.6** (pp. 58): no. 2-18 (even), 19-41 (odd), 42-70 (even)
2.	**Proof** • Introduction to Proofs • Direct Proofs • Proof methods and strategy • Resolution Proofs (optional)		[1] Ch. 2.1, 2.2, 2.3 (optional) [2] Ch. 1.6, 1.7	**[1] Sec 2.1** (pp. 75): no. 1, 6, 11, 17, 20, 25, 34, 41, 46, 52, 55, 56 **[1] Sec 2.2** (pp. 86): No. 2, 6, 12, 16, 21, 22, 24, 29, 34, 38, 40, 45, 48 **Optional [1] Sec 2.3** (pp. 86): No. 2, 4, 5, 7, 8

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
3.	**Induction** • Mathematical Induction • Strong form of Induction • Well-ordering		[1] Ch. 2.4, 2.5 [2] Ch. 4.1, 4.2	**[1] Sec 2.4** (pp. 102): no. 2, 4, 6, 11, 17, 23, 29, 36, 67, 71 **[1] Sec 2.5** (pp. 113): no. 2, 5, 8, 9, 13, 14, 17, 19, 21, 25
4.	**Sets and Functions** • Sets • Functions • Sequences and Strings • Summations		[1] Ch. 1.1, 3.1, 3.2 [2] Ch. 2.1-2.4	**[1] Sec 1.1** (pp. 12): no. 2, 6, 9, 15, 22, 23, 27, 28, 30, 32, 35, 38, 43, 46, 49, 51, 53, 58, 60, 62, 64, 66, 68, 72, 75, 79, 82, 88, 90, 91, 92 **[1] Sec 3.1** (pp. 132): no. 2, 5, 8, 12, 15, 18, 21, 25, 33, 37, 40, 46, 47, 53, 62, 75, 79, 89, 102 **[1] Sec 3.2** (pp. 145): no. 3, 11, 20, 26, 32, 38, 42, 46, 53, 54, 68, 74, 87, 90, 100, 112, 126, 131
5.	**Relations** • Relations • Equivalence Relations • Matrices of Relations (optional)		[1] Ch. 3.3-3.5 [2] Ch. 8.1-8.5	**[1] Sec 3.3** (pp. 157): no. 2, 4, 6, 11, 22, 29, 36, 46, 52, 57 **[1] Sec 3.4** (pp. 164): no. 2, 5, 11, 17, 23, 30, 37, 47, 51, 61 **[1] Sec 3.5** (pp. 172): no. 2, 7, 13, 17, 23, 27
6.	**Algorithm** • Introduction to algorithms • Examples of algorithms • Analysis of algorithms • Recursive algorithms		[1] Ch. 4.1-4.4 [2] Ch. 3.1-3.3	**[1] Sec 4.1** (pp. 185): no. 2, 4, 7, 13, 21, 24 **[1] Sec 4.2** (pp. 192): no. 3, 5, 9, 13, 19, 22 **[1] Sec 4.3** (pp. 207): no. 2, 5, 9, 12, 15, 17, 21, 26, 34, 38, 40, 48, 51, 58, 65, 76, 79, 84 **[1] Sec 4.4** (pp. 219): no. 3, 6, 10, 14, 20, 26, 34
7.	**Number theory** • Integers, its representations and algorithms • Divisions • Primes and Greatest Common Divisors • Euclidean algorithm		[1] Ch. 5.1-5.4 [2] Ch. 3.4-3.7	**[1] Sec 5.1** (pp. 219): no. 2, 5, 8, 12, 15, 18, 21, 25, 34 **[1] Sec 5.2** (pp. 247): No 2, 5, 11, 14, 19, 23, 26, 34, 39, 44, 52, 56 **[1] Sec 5.3** (pp. 258): No. 5, 10, 15, 20, 22, 25,

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	• RSA public-key cryptosystems			27, 32, 37, 38 **[1] Sec 5.4** (pp. 262): no. 3,4,6,7,10, 13,14,16
	MID SEMESTER TEST			
8.	**Counting** • Basic principles of counting • Permutations and Combinations • Generalized permutations and combinations • Binomial coefficients • Pigeonhole principle		[1] Ch. 6.1-6.4, 6.7, 6.8 [2] 5.1-5.4	**[1] Sec 6.1** (pp. 274): No 2, 10, 22, 26, 29, 36, 40, 41, 46, 52, 69, 75, 86, 90 **[1] Sec 6.2** (pp. 288): no. 2, 15, 14, 26, 30, 41, 51, 61, 66, 74, 80, 87, 90 **[1] Sec 6.3** (pp. 298): no. 3, 8, 12, 16, 20, 26, 28, 40, 45, 50 **[1] Sec 6.4** (pp. 304): No. 1, 3, 5, 10, 13, 15, 16, 18, 20, 21, 22
9.	**Discrete Probability** • Introduction to discrete probability • Discrete probability theory • Bayes' theorem • Expected value and variance		[1] Ch. 6.5, 6.6, [2] Ch. 6.1-6.4	**[1] Sec 6.5** (pp. 307): no. 2, 10, 16, 18, 26, 28, 34, 38, 42, 50 **[1] Sec 6.6** (pp. 307): no. 2, 4, 6, 11, 17, 23, 29, 36
10.	**Relations** • Introduction • Solving recurrence relations • Divide and conquer algorithms		[1] Ch. 7 [2] Ch. 7	**[1] Ch. 7** (pp.)Problems 2, 4, 7, 8, 9, 12
11.	**Graph Theory – 1** • Introduction to graph • Paths and cycles • Hamiltonian cycles • TSP • Shortest-path algorithm		[1] Ch. 8.1-8.4 [2] Ch. 9.1, 9.2, 9.5, 9.6	**[1] Sec 8.1** (pp. 385): no. 1, 6, 11, 18, 20, 25, 34, 41, 46, 52 **[1] Sec 8.2** (pp. 396): No. 2, 6, 12, 16, 21, 22, 29, 34, 38, 40, 46, 48, 56, 60, 66, 70, 76 **[1] Sec 8.3** (pp. 406): no. 2, 5, 8, 9, 13, 14, 17, 19, 21, 25, 30, 36 **[1] Sec 8.4** (pp. 412): no. 2, 4, 6, 10, 11
12.	**Graph Theory – 2** • Representation of graph		[1] Ch. 8.5-8.8 [2] Ch. 9.3,	**[1] Sec 8.5** (pp. 416): No. 1, 3, 5, 10, 13, 15, 18, 21, 25, 27, 32

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	• Isomorphism • Planar graph		9.4, 9.7	**[1] Sec 8.6** (pp. 422): no. 3, 7, 11, 13, 14, 18, 24, 32, 39, 42 **[1] Sec 8.7** (pp. 429): No 2, 5, 11, 13, 14, 18, 19, 20, 23, 26, 29 **[1] Sec 8.8** (pp. 434): no. 2, 5, 8, 13, 17, 19, 21
13.	**Trees** • Introduction • Applications of trees • Tree traversals • Spanning trees • Minimum spanning trees • Binary trees		[1] Ch. 9 [2] Ch. 10	**[1] Ch. 9** (pp. 506) Problems 1, 6, 11, 13, 17, 22, 25, 29, 34
14.	**Boolean Algebra** • Boolean algebras • Boolean functions • Applications		[1] Ch. 11 [2] Ch. 11	**[1] Ch. 11** (pp. 571) Problems 2, 5, 11, 13, 17
	FINAL SEMESTER TEST			

.

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) :

Jabatan (*Position*) : [koordinator mata kuliah]

Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito., Ph.D

Jabatan (*Position*) : Ketua Program Studi TIF

Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* TIF004	**Nama Mata Kuliah** *(Course Name)* **:** Kalkulus 2 / Calculus 2		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Fakultas Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** Calculus 1	**Kredit** *(Credit)* **:** 2		
	Kuliah *(Lecture)* **:** 2	**Tutorial :** --	**Praktikum** *(Practicum)***:** --
Revisi *(Revision Status)***: R-01**	**Semester Ganjil/Genap*** *(Odd/Even Semester*)* **Tahun Akademik 2012/2013** *(AY* 2012/2013*)*		
Lecturer's name:			

COURSE DESCRIPTION

This course will cover the intermediate-level calculus materials: sequence and series, first-order differential equations, second-order differential equations, vector-valued functions, partial derivatives, multiple integrals, and integration in vector fields.

COURSE OBJECTIVES

Upon completion of the course the student should be able to:

- Understand the foundation of sequence and series and use them in various applications such as proofing convergence of power series
- Understand and solve first-order and second-order differential equations applied to various problems related to electrical circuit analysis
- Understand the concept of vector-valued functions and prepare them for later materials such as partial derivatives, gradient vector, and line integrals including their applications
- Understand the concept, properties, and computational aspects of double and triple integrals and its applications to masses and moments

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

It is imperative that students take an active interest in the course. To succeed in this course, students must read, think, and write in an analytical manner and this takes time and practice. Such practice can only be achieved by working exercises. When troubles arise, and they will, the student must ask questions which may be directed to the instructor or other students in a variety of ways.

Students are also encouraged to work together on problem sets as part of their exercises. However, individual must ultimately demonstrate the understanding of the material by writing up his/her own solutions without the help of other students or their written work.

On average students need to spend, at least, 9 hours of study and preparation per week for this course.

ATTENDANCE REQUIREMENT

Comply with academic rules. Absence from lectures shall not exceed 22%. Students who exceed the 22% limit without a medical or emergency excuse acceptable to and approved by the Dean of the Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

1. George B. Thomas, Maurice D. Weir, Joel R. Hass; Thomas' Calculus 12th Ed.; Pearson Education, Inc., 2010.

COURSE OUTLINE

Note: all materials are delivered by means of in-class lectures and class room discussions

Session	Topics/Sub-Topics	Ref.	Assignment
1	Sequence - Sequence - Integral test - Comparison tests - Ratio and root tests	[1] Ch. 10.1, 10.3-10.5	[1] Ch 10 Problems 1-18 (even)
2	Infinite series - Infinite series - Alternating series - Convergence - Power series - Taylor and Maclaurin series - Binomial series	[1] Ch. 10.2, 10.6-10.10	[1] Ch 10 Problems 19-22, 30-33, 43-45, 52-55, 66, 71-74
3	First order differential equations - First-order linear equations - Slope fields - Euler's method	[1] Ch. 9.1-9.3	[1] Ch 9 Problems 1, 5, 8, 13, 16, 19, 21, 23, 27, 30, 31
4	Applications of first-order differential equations - Applications - Systems of equations - Phase planes	[1] Ch. 9.4-9.5	[1] Ch 9 Problems 35, 36
5	Second-order differential equations - Second-order linear equations - Nonhomogeneous linear equations	[1] Ch. 17.1-17.2	[1] Sec. 17.1 No. 4, 16, 28, 36, 42, 50, 56 [1] Sec. 17.2 No. 2, 6, 10, 16, 18, 22, 28, 32,34, 46, 52
6	Applications of second-order differential equations - Applications of second-order differential equations - Euler equations - Power series solutions	[1] Ch. 17.3-17.5	[1] Sec. 17.3 No. 4, 8, 12, 16, 18, 22 [1] Sec. 17.4 No. 2, 6, 14, 18, 20, 22 [1] Sec. 17.5 No. 2, 4, 6, 10, 14
7	Introduction to vector-valued functions	[1] Ch. 12.2-12.4, 13.1, 13.2	[1] Ch. 12 Problems 2, 7,

Session	Topics/Sub-Topics	Ref.	Assignment
	- Vectors - Dot product and cross product - Curves in space and tangents - Integrals of vector functions		10, 14, 18, 22, 26, 30, 34, 44, 50, 56, 60 [1] Ch. 13 Problems 2, 4, 12, 16, 22
SEMESTER MID TEST			
8	Applications of vector-valued integrals - Arc length in space - Curvature and normal vectors of a curve - Tangential and normal components of acceleration	[1] Ch. 13.3-13.5	[1] Ch. 13 Problems 6, 10, 16, 26, 30, 34
9	Partial derivatives - Functions of several variables - Limits and continuity in higher dimensions - Partial derivatives - Chain rules - Directional derivatives and gradient vectors	[1] Ch. 14.1-14.5	[1] Ch. 14 Problems 1,5,8, 14, 17, 18, 21, 24, 26, 31, 35, 39, 42
10	Applications of partial derivatives - Tangent planes and differentials - Extreme values and saddle points - Lagrange multipliers	[1] Ch. 14.6-14.8	[1] Ch. 14 Problems 45, 48, 55, 61, 65, 72, 81, 90, 92, 96
11	Double integrals - Double integral over rectangles - Double integral over general regions - Area by double integration	[1] Ch. 15.1-15.3	[1] Ch. 15 Problems 2, 6, 12, 14, 18
12	Triple integrals - Triple integrals in rectangular coordinates - Moments and center of mass - Substitutions in multiple integrals	[1] Ch. 15.5-15.8	[1] Ch. 15 Problems 24, 26, 28, 30
13	Line integrals - Line integrals and vector fields - Path independence - Conservative fields - Potential functions - Green's Theorem	[1] Ch. 16.1-16.4	[1] Ch. 16 Problems 2, 4, 7, 9, 10
14	Surface integrals - Surfaces and area - Surface integrals - Stokes' Theorem - Divergence Theorem	[1] Ch. 16.2, 16.5-16.8	[1] Ch. 16 Problems 13, 14, 18, 21, 26
SEMESTER FINAL TEST			

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) : Irwan Prasetya Gunawan
Jabatan (*Position*) : Dosen
Tanggal (*Date*) : 09/08/2012

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito
Jabatan (*Position*) : Ketua Program Studi
Tanggal (*Date*) :

SYLLABUS

Kode Mata Kuliah *(Course Code)*: **TIF 106**	**Nama Mata Kuliah** *(Course Name)* **:** **Konsep Sistem Informasi / Concept of Information Systems**		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** -	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** 0	**Praktikum** *(Practicum)*: 0
Revisi *(Revision Status)*: R-1	**Semester ~~Ganjil~~/Genap*** *(~~Odd~~/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: • Refyul Rey Fatri, S.Si., M.Sc., Ph.D.			

COURSE DESCRIPTION

Information systems and the strategies for managing them change quickly, but the concepts that guide both often remain timeless. These principles form the backbone of this comprehensive survey of the field, designed for a student's first course in information systems. By presenting the details and the big picture, this course puts the lessons of managing information systems into an understandable context. The overall principle is that the right information, if it is delivered to the right person, in the right fashion, and at the right time, can improve and ensure organizational effectiveness and efficiency.

COURSE OBJECTIVES

This course is aimed to give students the fundamental concepts information systems. The introduction started from the essential of information systems, IS infrastructures, IS and globalizations, IS investments and strategy, e-commerce, Web 2.0, business intelligence, enterprise IS, IS development and acquisition, security and controls, and ethics & crime in IS.

By the end of this course, students should be able to :

- Demonstrate understanding of the essential concepts of information systems.
- Demonstrate understanding the benefit of information systems.
- Demonstrate competency in the applying information systems in organization.
- Demonstrate competency in the applying information systems in business
- Demonstrate understanding of issues, development acquisition of information systems.
- Demonstrate understanding of security and controls in information systems.

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

ATTENDANCE REQUIREMENT

Comply with academic rules.

ASSESSMENT

Mid test	30%
Final test	40%
Reports/assignments/quizzes	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

[1]. Information Systems Today – Managing in Digital World,
4th Edition, Pearson Global Edition, 2010
Joe Valacich, Christoph Schneider.

[2]. Information Systems Essentials,
5th Edition, Cenage Course Technology, Cenage Learning, 2010
Ralph Stair, George Reynolds.

[3]. Introduction to Information Systems,
3rd Edition, Wiley 2011
R. Kelly Rainer, Casey G. Cegielski

One Flash disk, and it will be used to store files and assignments. Computer usage is required.
The purchase of a notebook, a folder to keep handouts and a dictionary are recommended.

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
1.	**Defining Information Systems** a. IS Defined b. Terminology-data, information, knowledge, IS c. IS Today d. The Dual nature of IS e. Cases		[1], chapter 1, p.28-63.	Facebook.com, Online Map Services.
2.	**IS Infrastructres** a. IS Hardware Infrastructure b. IS Software Infrastructure c. Communication and Collaboration Infrastructure d. Data and Knowledge Infrastructure e. Application Software		[2], chapter 2, p.64-119	Amazon SimpleDB, Wifi in the Sky

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
3.	**IS and Globalization** a. Evolution of Globalization b. Opportunities for Operating in the Digital World c. Challenges of Operating in the Digital World d. Going Global: International Business Strategies in the Digital World		[1], chapter 3, p.120-163.	Flickr, Global Payment at Paypal
4.	**IS Investments and Strategic Advantage** a. Valuing IS b. Making the business Case for an IS c. Valuing Innovations d. Freeconomics: Why Free Products are the Future of the Digital World		[1], chapter 4, p.164-211	Netflix, Linkedin
5.	**Electronic Commerce** a. E-Commerce Defined b. B2B E-Commerce: Extranets c. B2E E-Commerce: Intranets d. B2C E-Commerce e. C2C E-Commerce f. Emerging Topics in E-Commerce		[1], chapter 5, p.212-257. [2], chapter 5, p.198-223	Crowdsourcing, Youtube, Paying with Cellphone in Canada.
6.	**Web 2.0 Technologies and Business Models** a. Defining Web 2.0 b. Empowering Individual with Web 2.0 c. Enhancing Collaboration with Web 2.0		[1], chapter 6, p.258-293	Google's Opensocial API, Wikipedia.
7.	**Organizational IS and Business Intelligence** a. Business Intelligence b. Business Intelligence Components c. Information Visualization		[1], chapter 7, p.294-341	The Netflix Prize, Applications to make you smarter.
	MID SEMESTER TEST			
8.	**Enterprise IS: CRM, ERP, SCM** a. Enterprise Systems b. Enterprise Resource Planning c. Customer Relationship Management d. Supply Chain Management		[1], chapter 8, p. 342-389	Dashboard, Real or Fake? Tech May Tell.

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	e. The Formula for Enterprise System Success.			
9.	**IS Development and Acquisition** a. Customized versus Off-the Shelf Software b. The Need for Structured Systems Development c. Steps in the Systems Development Process d. Other Approaches to Designing and Building Systems e. Need Alternatives to Building Systems Yourself **f.** Common Alternatives to In-house Systems Development		[1], chapter 9, p. 390-435	Open Source Software, FBI Database to Expand
10.	**Is Security and Controls** a. Is Security b. Safeguarding IS Resources c. Managing IS Security **d.** Is Controls, Auditing and the Sarbanes-Oxley Act		[1], chapter 10, p. 436-477	Under Attack, China's Great (Fire)wall.
11.	**IS Ethics and Computer Crime** a. IS Ethics b. Computer Crime **c.** Cyber war and Cyber terrorism		[1], chapter 11, p.478-523	Bridging the digital Divide, Terrorist Invade Gaming.
12.	**Information and Decision Support Systems** a. Decision Making and Problem Solving b. Overview of MIS c. Functional Aspects of MIS d. Overview of DSS e. Components of a DSS f. Group Support Systems **g.** Executive Support Systems		[2], chapter 6, p. 244-289	Enterprise Rent-A-Car, Keiper Watch Production.
13.	**Knowledge Management and Specialized Information Systems** a. Knowledge Management Systems b. Overview of Artificial Intelligence c. Virtual Reality		[2], chapter 7, p.292-332,	Bird & Bird Lawfirm, Virtual Worlds and Al Collide.

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	d. Other Specialized Systems			
14.	**Advanced Topics and Trends in managing the IS Infrastructure** a. Advanced Topics in IS Hardware b. Advanced Topics in IS Software c. Advanced Topics in Networking and Collaboration d. Advanced Topics in Database Management		[1], p.524-583	-
	FINAL SEMESTER TEST			

.

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) :

Jabatan (*Position*) : [koordinator mata kuliah]

Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito., Ph.D

Jabatan (*Position*) : Ketua Program Studi TIF

Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code)*: **TIF 109**	**Nama Mata Kuliah** *(Course Name)* **:** **Struktur Data / Data Structure[1)]**		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** -	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** 0	**Praktikum** *(Practicum)*: 0
Revisi *(Revision Status)*: R-1	**Semester ~~Ganjil~~/Genap*** *(~~Odd~~/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: • Yusuf Lestanto, S.T., M.Sc.			

COURSE DESCRIPTION

This course is aimed to give students knowledge and skills on how to generate data structure using C++ as well as to use OOD to solve a particular problem. Data structure consists of linked list, stacks, queues, binary trees and Standard, Template Library (STL).

COURSE OBJECTIVES

By the end of this course, students should be able to :

- Understand on creating and manipulating dynamic two-dimensional array, virtual function and abstract classes.
- Understand to create generic code to process data in linked lis.
- Understand the concept of abstract class to capture the basic properties of linked list and then derive two separate classes to process unordered and ordered lists.
- Understand the concept of abstract class to capture the basic properties of stacks and queues.
- Understand the concept of hashing
- Understand the concept of the Shell sort algorithm
- Understand the concept of B-trees.
- Understand how to find Euler circuits in a graph.

METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and computer lab exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain

in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

*Students coming 15 minutes after the class begins are not allowed to signing the class' attendance list. Students coming 30 minutes after the class begins are not allowed to enter the class.

ASSESSMENT

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged. Lab exercises to be completed in the class or as homework.

Class Review Questions. These include short answers to provide feedback for the students understanding topic by topic.

Lab Exercises. These include the use of MySQL DBMS to provide feedback on the students' practical competency, and group consultancy on the assigned project.

Mid-Test, Final-test and Project-based Assessment. This course is a project-based which means students will be obliged to conduct a project. The project will provide most part of the students' grade. The mid-test will be used to evaluate student understanding of the materials given in the classes.

Summary of the grading :

Project-based Assessment	40%
Final-test	30%
Mid-test	20%
Lab Exercises	10%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Main book:

1. D. S. Malik; Data Structures Using C++; 2nd eds; Course Technology (2009)

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references
1.	Software Engineering Principles and C++ classes		Chapter 1
2.	Object-Oriented Design (OOD) and C++		Chapter 2
3.	Pointers and Array-based-list		Chapter 3

Session	Topic & Sub-topics	Methods of delivery	Material references
4.	Standard Template Library (STL) I		Chapter 4
5.	Linked List		Chapter 5
6.	Recursion		Chapter 6
7.	Stacks		Chapter 7
	MID SEMESTER TEST		
8.	Queues		Chapter 8
9.	Searching and Hashing algorithm		Chapter 9
10.	Sorting algorithm		Chapter 10
11.	Binary trees and B-trees		Chapter 11
12.	Graphs		Chapter 12
13.	Standard Template Library (STL) II		Chapter 13
14.	Project Presentation		
	FINAL SEMESTER TEST		

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) :
Jabatan (*Position*) : [koordinator mata kuliah]
Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito., Ph.D
Jabatan (*Position*) : Ketua Program Studi TIF
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* [kode mata kuliah]	**Nama Mata Kuliah** *(Course Name)* **:** English for Academic Purposes 2		
Program Studi *(Study Program)* **:** Komunikasi,Politik,Manajemen,Akunting,Teknik Informatika,Sistem informatika,Teknologi pangan,Teknik lingkungan,Teknik sipil	**Fakultas** *(Faculty)* **:** FTIK, FEIS		
Mata Kuliah Para-syarat *(Course Prerequisite)* **:** Mark of EAP 1 at least C	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** -	**Praktikum** *(Practicum)***:** -
Revisi *(Revision Status)***:** R-1	**Semester Ganjil/Genap*** *(Odd/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: a. Astrid Meliasari, Ph.D b. Azis Malek, M.Sc c. Riyanto,Drs.,M.A d. Rahmarni Sawitri,SS,SE e. Holilla Hatta, S.Pd.,MM. f. Cornelius Sembiring Meliala, MA g. Rini Anggraini, SH., M.A			

COURSE DESCRIPTION

English for Academic Purposes 2 is designed for University level, the guided practice necessary to develop sentence patterns of written English in their simple and expanded forms and in the major transformations of those forms. The approach of EAP 2 course is practical, emphasizing that writing skills are essential for career advancement and that writing is a vital part of many jobs.

Each unit has various topics focusing to more Academic writing styles. The topics introduced sequentially, moving from the fundamentals of writing (paragraphing, sentence structure) to shorter assignments (business letter) to more complex forms of academic writing (quotations, paraphrasing, summarizing, and journalism)

COURSE OBJECTIVES

This EAP 2 class is to help the students developing their Academic writing skills for fundamentals of writing (paragraphing, sentence structure) to shorter assignments (business letter) to more complex forms of academic writing (quotations, paraphrasing, summarizing, and journalism)

METHODS OF INSTRUCTIONS

This courses will be conducted by general teaching (GT) that combine with a "student-centered learning" (SCL) method. Class will be started with a speaking activity. The course will give more attention on the student learning process by using many discussions on the topic that we provide.

SYLLABUS

ATTENDANCE REQUIREMENT

In Comply with academic rules.
1. Student should attend the 80% of all courses
2. Twenty minutes late is forbidden to fill the list of attendance compliance with academic rules.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

English for Academic Purposes 2 (hand book)

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references
1	**Paragraph Structure:** -Personality -Talking about Personality -Paragraph -Vocabulary check	-Discussion (in group) -Individual Work	Chapter 1: p.1 - 9
2	**Skimming and Scanning:** -Social Problems -School Problems -Improving your reading skill -Vocabulary check	-Discussion (in pair) -Individual Work -Role Play	Chapter 2: p.10 - 19
3	**Paragraph Development:** -The best of everything -Islands -Paragraph development -Vocabulary check	-Discussion (in group) -Individual Work	Chapter 3: p.20 - 27
4	**Writing an Argument:** -Gender Roles -Agree or Disagree -Writing an Argument -Vocabulary Check	-Discussion (in pair) -Individual Work	Chapter 4: p.28 - 34
5	**Quotations:** -Success -Computer	-Discussion (in group) -Individual Work	Chapter 5: p.35 - 44

SYLLABUS

Session	Topic & Sub-topics	Methods of delivery	Material references
	-Quotations -Vocabulary Check		
6	**Documenting Sources:** -Travelling -Label the map -Documenting Sources -Vocabulary check	-Discussion (in group) -Individual Work	Chapter 6: p.45 - 57
7	PRESENTATION		
MIDDLE SEMESTER TEST			
9	**Paraphrase:** -Challenge and Accomplishment -Music 103 -Paraphrasing -Vocabulary Check	-Discussion (in pair) -Individual Work	Chapter 9: p.60 -69
10	**Summarizing:** -Excuses and Lies -Model of tourism -Vocabulary Check	-Discussion (in group) -Individual Work -Role Play	Chapter 10: p.70 - 80
11	**Resumes, CVs, cover letter** -Employment issues -Interview letter -Resumes, CVs, cover letter -Vocabulary Check	-Discussion (in pair) -Individual Work -Role Play	Chapter 11: p.81 - 90
12	**Composition:** -Government Spending -Examiner & Candidate -Writing a Composition -Vocabulary Check	-Discussion (in pair) -Individual Work	Chapter 12: p.91 - 98
13	**Business Letter:** -Stress -Bali -Business letter -Vocabulary Check	-Discussion (in pair) -Individual Work -Role Play	Chapter 13: p.99 - 111
14	**Academic and Journalistic Writing:** -TV program -Sinclair electrical services -Journalism -Vocabulary Check	-Discussion (in group) -Individual Work	Chapter 14: p.112 - 125
15	PRESENTATION		
FINAL SEMESTER TEST			

UNIVERSITAS BAKRIE

SYLLABUS

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) : Astrid Meliasari, Ph.D

Jabatan (*Position*) :

Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito., Ph.D

Jabatan (*Position*) : Ketua Program Studi TIF

Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* FTK201	**Nama Mata Kuliah** *(Course Name)* **:** Statistika & Probabilitas/ Statistics & Probability		
Program Studi *(Study Program)* **:** Sistem Informasi/Information Systems	**Fakultas** *(Faculty)* **:** Faculty of Enginerring and Computer Science		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** FTK102	**Kredit** *(Credit)* **:** 3 SKS		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** 0	**Praktikum** *(Practicum)***:** 0
Revisi *(Revision Status)***:** R-1	**Semester Ganjil/Genap*** *(Odd/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: Refyul Rey Fatri, S.Si., M.Sc., Ph.D.			

COURSE DESCRIPTION

This course will cover the introductory-to-intermediate course in probability and statistics: basic concepts in probability theory and statistics, statistical terms such as population, sample, sample size, random variable, mean, variance; collecting data, graphical method; regression and correlation, probability basics, confidence intervals and hypothesis testing, linear regression, statistical experiments, forecasting, statistical quality control, and non-parametric statistics.

COURSE OBJECTIVES

Upon completion of the course, the student will be able to:

1. Collect and measure statistical data
2. Present data using various graphical methods
3. Calculate and interpret numerical summaries
4. Use and apply laws of probability and learn how these laws are used in statistical inference
5. Use the concepts of sampling distributions and learn how it applies in making statistical inferences be based on sample of data
6. Be familiar with some important discrete and continuous distributions
7. Understand the concept of hypotheses
8. Understand the concepts of regression and correlation
9. Use the proper technique of analysis on different statistical experiments
10. Understand the different of parametric and non-parametric statistics
11. Make appropriate use of statistical inference

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

It is imperative that students take an active interest in the course. To succeed in this course, students must read, think, and write in an analytical manner and this takes time and practice. Such practice

can only be achieved by working exercises. When troubles arise, the student must ask questions which may be directed to the instructor or other students in a variety of ways.

Students are also encouraged to work together on problem sets as part of their exercises. However, individual must ultimately demonstrate the understanding of the material by writing up his/her own solutions without the help of other students or their written work.

On average students need to spend, at least, 6 hours of study and preparation per week for this course.

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ATTENDANCE REQUIREMENT

In compliance with academic rules. Absence from lectures shall not exceed 20% (3 class meetings). Students who exceed the 20% limit without a medical or emergency excuse acceptable to and approved by the Dean of the Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

1. David R. Anderson, Dennis J. Sweeney, Thomas A. Williams; Statistics for Business and Economics, 11th Ed.; South-Western Cengage Learning, 2011.
2. Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers, Keying Ye; Probability and Statistics for Engineers and Scientists, 9th Ed.; Pearson Education, Inc., 2011.

COURSE OUTLINE

This section should show topics, sub-topics, specific method of instruction/ delivery and material references.

Session	Topic & Sub-topics	Methods of delivery	Material references
1	Topic: Hypothesis Tests Specific sub-topics: 1. Developing Null and Alternative Hypotheses 2. Type I and Type Errors 3. Population Means: σ known. 4. Population Means: σ unknown. .	Classroom meeting and practical problem solving	# 1, Chapter 9.3-9.4

Session	Topic & Sub-topics	Methods of delivery	Material references
2	Topic: Hypothesis Tests Specific sub-topics: 1. Population Proportion 2. Hypothesis Test and Decision Making 3. Calculating Probability of Type II errors 4. Determining the Sample Size .	Classroom meeting and practical problem solving	# 1, Chapter 9.5-9.8
3	Topic: Statistical Inference About Means and Proportions with Two Populations Specific sub-topics: 1. Inference difference between means: σ1 and σ2 known. 2. Inference difference between means: σ1 and σ2 unknown. 3. Inference difference between means: matched samples 4. Inference difference between proportions.	Classroom meeting and practical problem solving	# 1, Chapter 10.
4	Topic: Inferences About Population Variance Specific sub-topics: 1. One Population Variance 2. Two Population Variances. .	Classroom meeting and practical problem solving	# 1, Chapter 11
5	Topic: Test of Goodness Fits and Independence Specific sub-topics: 1. Goodness Fit Test: Multinomial Population 2. Test of Independence 3. Goodness Fit Test: Poisson and normal Distributions .	Classroom meeting and practical problem solving	# 1, Chapter 12
6	Topic: Experimental Design and Analysis of Variance	Classroom meeting and practical problem	# 1, Chapter 13.1-13.3.

Session	Topic & Sub-topics	Methods of delivery	Material references
	Specific sub-topics: 1. Intro to ED and ANOVA 2. ANOVA and CRD 3. Multiple Comparison Procedures .	solving	
7	Topic: Experimental Design and Analysis of Variance Specific sub-topics: 1. Randomized Block Design 2. Factorial Experiment 3. Case Problems .	Classroom meeting and practical problem solving	# 1, Chapter 13.4-13.5
MIDDLE SEMESTER TEST			
8	Topic: Simple Linear Regression Specific sub-topics: 1. Regression Model 2. Least Square Methods 3. Coefficient of Determination 4. Testing of Significance 5. Estimated Regression Equation 6. Residual Analysis .	Classroom meeting and practical problem solving	# 1, Chapter 14
9	Topic: Multiple Regression Specific sub-topics: 1. Regression Model. 2. Least Square Methods 3. Coefficient of Determination 4. Testing of Significance 5. Estimated Regression Equation 6. Qualitative Independent Variables 7. Residual Analysis .	Classroom meeting and practical problem solving	# 1, Chapter 15
10	Topic: Regression Analysis: Model Building Specific sub-topics: 1. General Linear Model 2. Add and Delete Variables 3. Analysis of Larger	Classroom meeting and practical problem solving	# 1, Chapter 16

Session	Topic & Sub-topics	Methods of delivery	Material references
	Problem 4. Multiple regression Approach to Exp Design. 5. Autocorrelation and Durbin-Watson test. .		
11	Topic: Index Numbers Specific sub-topics: 1. Price Relatives 2. Aggregate Price Indexes 3. Computing API from PR. 4. Important Price Indexes 5. Deflating a Series 6. Other Considerations .	Classroom meeting and practical problem solving	# 1, Chapter 17
12	Topic: Forecasting Specific sub-topics: 1. Component of Time Series 2. Smoothing Methods 3. Trend Projection 4. Trend and Seasonal Components 5. Regression Analysis 6. Qualitative Approaches .	Classroom meeting and practical problem solving	# 1, Chapter 18
13	Topic: Nonparametric Methods Specific sub-topics: 1. Sign Test 2. Wilcoxon signed-Rank Rest 3. Mann-Whitney-Wilcoxon Test 4. Kruskal Wallis Test 5. Rank Correlation .	Classroom meeting and practical problem solving	# 1, Chapter 19
14	Topic: Statistical Quality Control Specific sub-topics: 1. Philosophies and Framework 2. Statistical Process Control 3. Acceptance Sampling. .	Classroom meeting and practical problem solving	# 1, Chapter 20.
FINAL SEMESTER TEST			

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) :
Jabatan (*Position*) : Refyul Rey Fatri, S.Si. M.Sc., Ph.D.
Tanggal (*Date*) : 04 September 2012

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Siti Rohajawati, S.Kom., M.Kom.
Jabatan (*Position*) : Kaprodi Sistem Informasi,
Tanggal (*Date*) : 04 September 2012.

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* FTK203	**Nama Mata Kuliah** *(Course Name)* **:** Sistem Basis Data / Database Systems		
Program Studi *(Study Program)* **:** Sistem Informasi	**Fakultas** *(Faculty)* **:** Fakultas Teknik dan Ilmu Komputer		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:**	**Kredit** *(Credit)* **:** 3 SKS		
	Kuliah *(Lecture)* **:** 2 SKS	**Tutorial :**	**Praktikum** *(Practicum)***:** 1 SKS
Revisi *(Revision Status)***:** R-1	**Semester Ganjil** *(Odd Semester)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: Manik Hapsara, M.Sc., Ph.D.			

COURSE DESCRIPTION

This course is aimed to give students knowledge and skills on how to generate database designs and implement it onto a physical database using a proper methodology.

COURSE OBJECTIVES

By the end of this course, students should be able to:

1. Understand the concept of database and a database system;
2. Understand the database environment;
3. Understand the architectures of database systems;
4. Understand how to use Relational Model and Languages to verify relational-completeness of a database design;
5. Understand how to interpret Relational Model and Languages into SQL statements;
6. Give examples of DBMS architectures;
7. Classify a database into a proper architecture;
8. Explain terms used in database environment, e.g. data independence, database models, integrity constraints, etc;
9. Apply Entity-Relationship Model into generating a physical database model;
10. Apply Database System Development Lifecycle;
11. Implement physical database design onto a DBMS using SQL Data Manipulation and SQL Data Definition;
12. Analyze what data are used within a business and how they are related to each other and form information necessary to support the running of the business;
13. Differentiate steps of database design and generate outcomes from each step that can be used towards building a database application;
14. Organize activities necessary to generate conceptual, logical, and physical database design based on a proper methodology.

METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and computer lab exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

*Students coming 15 minutes after the class begins are not allowed to signing the class' attendance list. Students coming 30 minutes after the class begins are not allowed to enter the class.

ASSESSMENT

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged. Lab exercises to be completed in the class or as homework.

Class Review Questions. These include short answers to provide feedback for the students understanding topic by topic.

Lab Exercises. These include the use of MySQL DBMS to provide feedback on the students' practical competency, and group consultancy on the assigned project.

Mid-Test and Project-based Assessment. This course is a project-based which means students will be obliged to conduct a project. The project will provide most part of the students' grade. The mid-test will be used to evaluate student understanding of the materials given in the classes.

Summary of the grading :

Project-based Assessment	45%
Mid-test	30%
Class Review Questions	15%
Lab Exercises	10%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Main book:
Thomas Connolly, Carolyn Begg; *Database Systems: A Practical Approach to Design, Implementation, and Management*; 5th eds; International Edition; Pearson USA (2010)

Complimentary books:
Ramez Elmasri, Shamkant B. Navathe; *Database Systems: Models, Languages, Design, and Application Programming*; 6th eds; Global Edition; Pearson USA (2011)

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references
1	Introduction to Databases, Database environment, and Database architecture	Presentation & discussion	Chapter 1, 2, 3
2	Database System Development Lifecycle	Presentation & discussion	Chapter 10
3	Entity-Relationship Modeling	Presentation & discussion	Chapter 12
4	Enhanced Entity-Relationship Modeling	Presentation & discussion	Chapter 13
5	Normalization	Presentation & discussion	Chapter 14
6	Advanced Normalization	Presentation & discussion	Chapter 15
7	Quiz	Reviews	Chapter 12, 13, 14, 15
MIDDLE SEMESTER TEST			
8	The Relational Model	Presentation & discussion	Chapter 4
9	Relational Algebra and Relational Calculus	Presentation & discussion	Chapter 5

SYLLABUS

Session	Topic & Sub-topics	Methods of delivery	Material references
10	SQL Data Definition, part-1	Presentation & discussion	Chapter 7
11	SQL Data Definition, part-2	Presentation & discussion	Chapter 7
12	SQL Data Manipulation, part-1	Presentation & discussion	Chapter 6
13	SQL Data Manipulation, part-2	Presentation & discussion	Chapter 6
14	Project Final Preparation	Reviews	
PROJECT-BASED ASSESSMENT			

Dipersiapkan oleh *(Prepared by* **)**:
Nama (*Name*) : Manik Hapsara
Jabatan (*Position*) :
Tanggal (*Date*) : 15 Agustus 2012

Disahkan oleh *(Certified by)* :
Nama (*Name*) :
Jabatan (*Position*) : [Ketua Program Studi]
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code)*: **TIF 203**	**Nama Mata Kuliah** *(Course Name)* **:** **Sistem Dijital / Digital Systems**		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** **Database Systems**	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** 0	**Praktikum** *(Practicum)*: 0
Revisi *(Revision Status)*: R-1	**Semester ~~Ganjil~~/Genap*** *(~~Odd~~/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: • Dr. Hoga Saragih, ST, MT			

COURSE DESCRIPTION

Digital Design (4 credits). This course will cover the fundamental digital design : Digital system and binary numbers, Boolean algebra and logic gates, Gate level minimization, Combinational logic, synchronous sequential logic, register and counters, Memory and programmable logic, Design at the register transfer level, Asynchronous sequential logic, Digital integrated circuit, and Standar graphic symbols.

COURSE OBJECTIVES

The objective of the course is to explain how digital circuit of large complexity can be built in a methodological way, starting from Boolean logic and applying a set of rigorous techniques. Numerous examples and case studies will be used to illustrate how the concepts presented in the lectures are applied in practice, and how the need to accommodate different practically-motivated trade-offs can lead to alternative implementations. The students will apply their knowledge in the theory and labs by building increasingly more complex digital logic circuits.

The specific course outcomes supporting the program outcomes are :

1. Students should be able to solve basic binary math operations using the logic gates.
2. Students should be able to demonstrate programming proficiency using the various logical elements to design practically motivated logical units.
3. Students should be able to design different units that are elements of typical computer's lab.
4. Students should be able to apply knowledge of the logic design course to solve problems of designing of control units of different input/output devices.
5. Students should be able to wiring different logical elements, to analyze and demonstrate timing diagrams of the units modeled.
6. Students should be able to design electrical circuitry using logical elements realized on the base of different technologies.

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and practical problem solving, discussion, and field visit to assist the student to successfully meet the course's learning objectives.

ATTENDANCE REQUIREMENT

Comply with academic rules.

ASSESSMENT

Lab and Assignments	30%
Midterm Exam	30%
Final Exam	40%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

The following are suitable texts and/or references for this course:

1. Digital Design, 4-th edition, M. Morris Mano, Michael D. Ciletti, Prentice Hall (Textbook)
2. Introduction to Digital Logic Design, John P. Hayes, Prentice Hall, 1993.
3. Introduction to logic and Computer Design, Alan Marcovitz, McGraw Hill.
4. Logic and Computer Design Fundamentals, 4-th, M. Morris Mano, Charles R. Kime, Prentice Hall
5. Digital Design, Franc Vahid, John Wiley & Sons Inc.
6. Computer Design: An Example of Advanced Digital Logic Design, Sunggu Lee, Prentice Hall, 2000.
7. M. Morris Mano and Michael D. Ciletti., "Electronic Digital Design," 4th edition, ISBN-10: 0131989243
8. Advanced Digital Logic Design, Sunggu Lee, Prentice Hall, 2000.
9. Fundamentals of Digital Logic with VHDL Design, 3-rd, Stephen Brown, Zvonko Vranesic, McGraw Hill.
10. Fundamentals of Digital Logic and Microcomputer Design, 5-th edition, M. Rafiquzzaman, John Wiley & Sons Inc.
11. DeMassa and Ciccone, "Digital Integrated Circuits," John Wiley, 1996.

PREREQUISITES BY TOPIC :

Students are expected to have the following topical knowledge upon entering this course:

1. Satisfactory completion of understanding of basics of physics course on electricity.
2. Ability to describe and transform the simple logical equations.
3. Ability to perform simple jobs in wiring logical elements.
4. Ability to use a computer to prepare written reports and to perform basic data reduction, graphing, and engineering data presentation.

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
1.	**Chapter 1. Introduction Digital Design** 1.1 Digital Systems 1.2 Binary Numbers 1.3 number-Base Conversions 1.4 Octal and Hexadecimal Numbers		[1] Ch. 1	**Preparation LAB & Equipment**
2.	**Chapter 1. Digital Systems and Binary Numbers** 1.5 Complements 1.6 Signed Binary Numbers 1.7 Binary Codes 1.8 Binary Storage and Registers 1.9 Binary Logic **LAB 1**		[1] Ch. 1	**Chapter 1, no. 2, 3, 5, 6, 7, 9, 12, 19, 24, 29.**
3.	**Chapter 2. Boolean Algebra and Logic Gates** 2.1 Introduction 2.2 Basic Definition 2.3 Axiomatic Definition of Boolean Algebra 2.4 Basic Theorems and Properties of Boolean Algebra 2.5 Boolean Functions		[1] Ch. 2.	**Preparation LAB & Equipment**
4.	**Chapter 2. Boolean Algebra and Logic Gates** 2.6 Canonical and Standard Forms 2.7 Other Logic Operations 2.8 Digital Logic Gates 2.9 Integrated Circuit **LAB 2**		[1] Ch. 2.	**Chapter 2, no. 2, 3, 4, 9, 11, 12, 15, 17, 18, 19.**
5.	**Chapter 3. Gate-Level Minimization** 3.1 introductions 3.2 The Map Method 3.3 Four-Variable Map 3.4 Five variable Map 3.5 Product-of-Sums Simplification **Discussions Group**		[1] Ch. 3	**Preparation LAB & Equipment**
6.	**Chapter 3. Gate-Level Minimization** 3.6 Don't-Care Conditions 3.7 NAND and NOR implementation 3.8 Other Two-level Implementations 3.9 Exclusive-OR function 101 3.10 Hardware Description Language **LAB 3**		[1] Ch. 3	**Chapter 3, no. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.**
7.	**Chapter 4 Combinational Logic**		[1] Ch. 4	**Chapter 4, no. 1, 2, 3, 5, 6, 7, 9, 10,**

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	4.1 Introduction 4.2 Combinational Circuit 4.3 Analysis Procedure 4.4 Design Procedure 4.5 Binary Adder-Subtractor 4.6 Decimal Adder 4.7 Binary Multiplier 4.8 Magnitude Comparator 4.9 Decoders 4.10 Encoders 4.1 1 Multiplexers 4.12 HDL Models of Combinational Circuits			**11, 14.** **Preparation FOR MID TEST**
	MID SEMESTER TEST			
8.	**Chapter 5 Synchronous Sequential Logic** 5.1 introduction 5.2 Sequential Circuits 5.3 Storage Elements : Latches 5.4 Storage Elements: Flip-Flops 5.5 Analysis of Clocked Sequential Circuits 5.6 Synthesizable HDL Models of Sequential Circuits 5.7 State Reduction and Assignment 5.8 Design Procedure		[1] Ch. 5	**Chapter 5, no. 3, 6, 7, 8, 9, 11, 12, 14, 15, 16.** **Preparation LAB & Equipment**
9.	**Chapter 6 Registers and Counters** 6.1 Registers 6.2 Shift Registers 6.3 Ripple Counters 6.4 Synchronous Counters 6.5 Other Counters 6.6 HDL for Registers and Counters **LAB 4**		[1] Ch. 6	**Chapter 6. no. 3, 7, 11, 11, 12, 14, 15, 18, 21, 22.**
10.	**Chapter 7 Memory and Programmable Logic** 7.1 introduction 7.2 Random-Access Memory 7.3 Memory Decoding 7.4 Error Detection and Correction 7.5 Read Only Memory 7.6 Programmable Logic Array 7.7 Programmable Array Logic 7.8 Sequential Programmable Devices **Discussions Group**			**Chapter 7, no. 2, 3, 7, 8, 10, 11, 12, 13, 14, 16.** **Preparation LAB & Equipment**
11.	**Chapter 8 Design at the Register Transfer Level** 8.1 introduction 8.2 Register Transfer Level (RTL) Notation		[1] Ch. 8.	

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	8.3 Register Transfer Level in HDL 8.4 Algorithmic State Machines (ASMs) 8.5 Design Example 8.6 HDL Description of Design Example 8.7 Sequential Binary Multiplier 8.8 Control Logic 8.9 HDL Description of Binary Multiplier 8.10 Design with Multiplexers 8.11 Race-Free Design 8.12 Latch-Free Design 8.13 Other Language Features **LAB 5**			
12.	**Chapter 9 Asynchronous Sequential Logic** 9.1 introduction 9.2 Analysis Procedure 9.3 Circuits with Latches 9.4 Design Procedure 9.5 Reduction of State and Flow Tables 9.6 Race-Free State Assignment 9.7 Hazards 9.8 Design Example		[1] Ch. 9	**Chapter 9, no. 2, 4, 5, 10, 18, 20, 22, 23, 24, 25.** **Preparation LAB & Equipment**
13.	**Chapter 10 Digital Integrated Circuits** 10.1 introduction 10.2 Special Characteristic 10.3 Bipolar-Transistor Characteristic 10.4 RTL and DTL Circuits 1.5 Transistor-Transistor Logic 10.6 Emitter-Coupled Logic 10.7 Metal-Oxide Semiconductor 10.8 Complementary MOS 10.9 CMOS Transmission Gate Circuits10.10 Switch-Level Modeling with HDL **LAB 6**		[2] Ch. 10	
14.	**Chapter 12 Standard Graphic Symbols** 12.1 Rectangular-Shape Symbols 12.2 Qualifying Symbols 12.3 Dependency Notation 12.4 Symbols for Combinational Elements 12.5 Symbols for Flip-Flops 12.6 Symbols for Registers 12.7 Symbols for Counters 12.8 Symbol for RAM **LAB 7**		[1] Ch. 12	**Preparation FOR FINAL TEST**
	FINAL SEMESTER TEST			

Dipersiapkan oleh *(Prepared by* **)**:			**Disahkan oleh** *(Certified by)* :		
Nama (*Name*)	:		Nama (*Name*)	:	Benfano Soewito., Ph.D
Jabatan (*Position*)	:	[koordinator mata kuliah]	Jabatan (*Position*)	:	Ketua Program Studi TIF
Tanggal (*Date*)	:		Tanggal (*Date*)	:	

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code)*: **TIF206**	**Nama Mata Kuliah** *(Course Name)* **:** **Sistem Operasi Operating Systems[1)]**		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** -	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** 0	**Praktikum** *(Practicum)***:** 0
Revisi *(Revision Status)***:** R-1	**Semester ~~Ganjil~~/Genap*** *(~~Odd~~/Even Semester*)* **Tahun Akademik 2011/2012**		
Lecturer's name: • Yudhiansyah Ahmadin, S.T, M.T.I.			

COURSE DESCRIPTION

In this lecture will discuss organization, structure and the concept of the operating system. The topics will addressed include the introduction of the operating system, history, basic concepts, and structure; Processes, Memory Management, File System, Input / Output, Distributed Systems and Security.

COURSE OBJECTIVES

By the end of this course, students should be able to :

- To learn what is Operating System.
- Demonstrate understanding of Process Management.
- Demonstrate understanding of Memory Management.
- Demonstrate understanding of I/O Device.
- Demonstrate understanding of Operating System Security
- Demonstrate understanding of Distributed System.

METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and computer lab exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

ASSESSMENT

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged. Lab exercises to be completed in the class or as homework.

Class Review Questions. These include short answers (S.A.) and algorithm workbenches (A.W.) to provide feedback of the students' understanding topic by topic.

Mid-Test and Final-Test. These written tests will evaluate the students' level of knowledge and skills on this course.

Summary of the grading :

Final test	40%
Mid-test	30%
Lab Report / Assignment	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Textbooks [T]:

[T1] Stuart, B.L, . (2009) Principles of Operating System , International Edition, Course Technology.

[T2] Sobell, M.G, . (2010) A Practical Guide to linux commands, Editors, and Shell Programming , Second Edition, Prentice Hall.

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references	Course Assignment
1.	**Introducting to Operating System** a. Terminology – what is operating system. b. Areas of Operating System responsibility. c. History of Operating Systems. d. Technique of Organizing Operating System. e. Bootstrapping. f. System calls.		**[T1],** Chap1, p1-p19	Lab Session
2.	**Principles of process managment** a. Process concept. b. Process Operation. c. Process State.		**[T1],** Chap 5, p81-p85	Lab Session

Session	Topic & Sub-topics	Methods of delivery	Material references	Course Assignment
	d. The Process Table.			
3.	**Principles of process managment** a. Process thread. b. Process scheduling.		**[T1],** Chap 5, p86-p94	Review test L1-L3
4.	**Principles of process management** a. Process creation and termination. b. Interrupt control. c. Atomic instruction. d. Peterson algorithm. e. Semaphore.		**[T1],** Chap 5, p100-p107	Lab Session
5.	**Principles of process managment** a. Deadlock condition. b. Dealing with deadlock.		**[T1],** Chap 5, p111-p112	Lab Session
6.	**Principles of process management** a. Memory hierarchy. b. Address translation. c. Memory related services. d. Memory layout. e. Memory allocation technique.		**[T1],** Chap 9, p195-p211	Review test L4-L6
7.	**Principles of memory management** a. Memory over allocation technique. b. Memory management in Embeded System		**[T1],** Chap 9, p213-p229	Lab Session
	MID SEMESTER TEST			
8.	**Principles of I/O device managment** a. Element of I/O subsystem. b. I/O Device Characteristic. c. Objective I/O Subsystem design.		**[T1],** Chap 13, p307-p319	Lab Session
9.	**Principles of I/O device managment** a. Device Driver structure **b.** Device Management technique		**[T1],** Chap 13, p320-p331	Lab Session
10.	**Principles of file system** a. File System Service. b. General File System Design. c. Name Space.		**[T1],** Chap 17, p399-p419	Review test L8-L10

Session	Topic & Sub-topics	Methods of delivery	Material references	Course Assignment
	d. Managing Storage Space.			
11.	**Principles of Operating System Security** a. User Authentication. **b.** Basic Resource Protection.		**[T1],** Chap21, p511-p520	Lab Session
12.	**Principles of Operating System Security** a. Type of threat. **b.** Encryption.		**[T1],** Chap21, p521-p531	Lab Session
13.	**Principles of Distributed System** a. Distribution Concepts. b. Processor sharing. c. Election Algorithm.		**[T1],** Chap 22, p537-p550	Review test L11-L13
14.	**Lecture Summary**			
	FINAL SEMESTER TEST			

COMPUTER LAB (CL) SESSIONS

Session	Topic	Lab Assignment
CL-1	Introducing	**[T2]**, Chap 2
CL-2	Basic Utility and Working with files	**[T2]**, Chap 3, p47-p59
CL-3	Utility tools	**[T2]**, Chap 3, p60-p69
CL-4	Path names, Working with directory, Access List	**[T2],** Chap 4, p83-p110
CL-5	Command Line, Standard Input/Output	**[T2],** Chap 5, p117-p139
CL-6	Introducing to Vim editor	**[T2],** Chap 6, p151-p167
CL-7	Using Vim editor	**[T2],** Chap 6, p168-p184
MID SEMESTER TEST		
CL-8	Bash Intro and process	**[T2],** Chap 8, p269-p308
CL-9	Using Bash	**[T2],** Chap 8, p308-p335
CL-10	Bash control structure and file descriptor	**[T2],** Chap 10, p398-p431
CL-11	Bash parameter, builtin command, expression and programming	**[T2],** Chap 10, p434-p472
CL-12	PERL intro and variable	**[T2],** Chap 11, p486-p500
CL-13	Perl programming	**[T2],** Chap 11, p501-p523
CL-14	Introducing to "SED"	**[T2],** Chap 13
FINAL SEMESTER TEST		

.

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) :

Jabatan (*Position*) : [koordinator mata kuliah]

Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito., Ph.D

Jabatan (*Position*) : Ketua Program Studi TIF

Tanggal (*Date*) :

SYLLABUS

Kode Mata Kuliah *(Course Code):* TIF207	**Nama Mata Kuliah** *(Course Name)* **:** Komunikasi Data / Data Communications		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Fakultas Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** --	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** --	**Praktikum** *(Practicum)***:** --
Revisi *(Revision Status)***: R-01**	**Semester Ganjil/Genap*** *(Odd/Even Semester*)* **Tahun Akademik 2012/2013** *(AY* 2012/2013*)*		
Lecturer's name: Irwan Prasetya Gunawan, Ph.D			

COURSE DESCRIPTION

This course presents a comprehensive overview of data communications. It is based on the bottom-up approach to data communications. The course emphasizes data communications concepts as outlined by the 7 layer Open System Interconnection (OSI). This course introduces the architecture, structure, functions, components, and models of data communication network including computer network, Internet, and mobile. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum.

COURSE OBJECTIVES

Upon completion of the course the student should be able to:

- Understand the fundamentals of data communications.
- Evaluate and apply formulae to practical communication problems concerning bandwidth, noise and symbols.
- Understand the different media available to support data communications.
- Understand the role of the various protocols in facilitating the transfer of data across a communication network.
- Appreciate the role of the ISO seven layer model which attempts to standardise communication

METHODS OF INSTRUCTIONS

The course is delivered as a class-based course. Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

It is imperative that students take an active interest in the course. To succeed in this course, students must read, think, and write in an analytical manner and this takes time and practice. Such practice can only be achieved by working exercises. When troubles arise, and they will, the student must ask questions which may be directed to the instructor or other students in a variety of ways.

Students are also encouraged to work together on problem sets as part of their exercises. However, individual must ultimately demonstrate the understanding of the material by writing up his/her own solutions without the help of other students or their written work.

On average students need to spend, at least, 6 hours of study and preparation per week for this course.

ATTENDANCE REQUIREMENT

Comply with academic rules. Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session.

Absence from lectures shall not exceed 22%. Students who exceed the 22% limit without a medical or emergency excuse acceptable to and approved by the Dean of the Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Required materials:

1. Behrouz Forouzan, “Data Communications and Networking”, Fourth Edition, McGraw Hill International, 2007 [Forouzan, 2007].

Supporting materials:

1. Andrew S. Tanenbaum, “Computer Networks”, Third Edition, Prentice Hall International, 1996 [Tanenbaum, 1996].
2. William Stallings, “Data and Computer Communications”, Fifth Edition, Prentice Hall International, 1997 [Stallings, 1997].
3. Douglas E. Comer, “Internetworking with TCP/IP Volume I: Principles, Protocols, and Architecture”, Third Edition, Prentice Hall International, 1995 [Comer, 1995].
4. Douglas E. Comer and David L. Stevens, “Internetworking with TCP/IP Volume II: Design, Implementation, and Internals”, Secodn Edition, Prentice Hall International, 1996 [Comer and Stevens, 1996].

COURSE OUTLINE

Note: all materials are delivered by means of in-class lectures and class room discussions

Session	Topics	References
1	1. Introduction to data communications	[Tanenbaum] ch 1, [Forouzan] ch 1
	2. Historical review of computer networking	[Tanenbaum] ch 1
	3. Computer networking hardware	[Tanenbaum] ch 1.2
	4. Computer networking software	[Tanenbaum] ch 1.3
	5. Network architecture	[Forouzan] ch 1
2	1. Fundamentals of communications	[Tanenbaum] ch 2.1
	2. Reference model	[Tanenbaum] ch 1.4, [Forouzan] ch 2
	3. Standardisation	[Tanenbaum] ch 1.6, [Forouzan] ch 1
	4. Network topologies	[Forouzan] ch 1
	5. Data communication basic	[Tanenbaum] ch 2.1
	6. Packet-based data communication	[Tanenbaum] ch 5.1.1
	7. Circuit switched vs packet switched	[Forouzan] ch 8.1
	8. Message switching, datagram, virtual circuit	[Tanenbaum] ch 5.1.1, 5.1.3, 5.1.4
	9. Connection vs connectionless oriented	[Tanenbaum] ch 5.1.3, 5.1.4
3	1. Wired-based communications	[Forouzan] ch 7.1
	2. Wireless communications	[Forouzan] ch 7.2
	3. Examples of communications network	
4	1. Data Link Layer basics	[Tanenbaum] ch 3
	2. Encoding, framing	[Forouzan] ch 4.1, 4.2, [Tanenbaum] ch 3.1.2
	3. Error detection, error correction, reliable transmission	[Tanenbaum] ch 3.2, [Forouzan] ch 10, 10.2
	4. Sliding windows	[Tanenbaum] Ch 3.4
5	1. Channel allocation	
	2. Multiple access protocols	[Tanenbaum] ch 4.2, [Forouzan] ch 12.1, 12.1
	3. Ethernet	[Tanenbaum] ch 4.3
6	1. Network layer	[Forouzan] ch 19, 20, 21, 22
	2. Network layer addressing	[Tanenbaum] ch 5.6.2, [Forouzan] Ch 19.1, 19.2, 21.1
	3. IPv4 and IPv6	[Tanenbaum] Ch 5.6.1, Ch 5.6.2, [Forouzan] Ch 19.1, Ch 20.2

Session	Topics	References
	4. Routing algorithm	[Tanenbaum] Ch 5.1.1, [Forouzan] Ch 22.3, Ch 22.4
7	1. Spanning tree	[Tanenbaum] Ch 5.2.7
	2. Intra/inter-domain routing protocols	[Forouzan] Ch 22.3
	3. CIDR	[Tanenbaum] Ch 5.6.2
	MID-TEST EXAMS	
9	1. IP	
	2. QoS	[Tanenbaum] Ch 5.4, [Forouzan] Ch 24.5, Ch 24.6, Ch 24.9
	3. Congestion control	
10	1. End-to-end protocol	
	2. Data presentation	[Forouzan] Ch 1 (pp 5-6), Ch 29.1
	3. Compression	[Tanenbaum] Ch 7.4.2 (audio), [Forouzan] Ch 29.2
11	1. Transport service	
	2. Transport protocol	[Tanenbaum] Ch 6, [Forouzan] Ch 23
12	1. UDP	[Tanenbaum] Ch 6.4, [Forouzan] Ch 23.2
	2. TCP	[Tanenbaum] Ch 6.5, [Forouzan] Ch 23.3, Ch 23.4 (STCP)
	3. Performance issues	[Tanenbaum] Ch 6.6
13	1. DNS	[Tanenbaum] Ch 7.1, [Forouzan] Ch 25
	2. Email	[Tanenbaum] Ch 7.2, [Forouzan] Ch 26.2
	3. WWW	[Tanenbaum] Ch 7.3, [Forouzan] Ch 27.1, Ch 27.2
	4. Multimedia	[Tanenbaum] Ch 7.4, [Forouzan] Ch 29.1
	5. Streaming	[Tanenbaum] Ch 7.4.3, [Forouzan] Ch 29.3 Ch 29.4
14	1. Wireless networking	[Tanenbaum] Ch 4.4
	2. Security	[Tanenbaum] Ch 8.6.4
	3. Wireless broadband	[Tanenbaum] Ch 4.5

Session	Topics	References
	4. WIMAX	
15	1. Network security basic	[Tanenbaum] Ch 8, [Forouzan] Ch 31
	2. Cryptography	[Tanenbaum] Ch 8.1, [Forouzan] Ch 30
	3. Symmetric key algorithm	[Tanenbaum] Ch 8.2, [Forouzan] Ch 30.2
	4. Public key infrastructure	[Tanenbaum] Ch 8.3, [Forouzan] Ch 31.7
	5. Internet Security	[Forouzan] Ch 32
	6. IPSec	[Forouzan] Ch 32.1
	7. PGP	[Forouzan] Ch 32.3
	8. Firewalls	[Forouzan] Ch 32.4
FINAL TEST EXAM		

Dipersiapkan oleh *(Prepared by* **)**:
Nama (*Name*) : Irwan Prasetya Gunawan
Jabatan (*Position*) : Dosen
Tanggal (*Date*) : 29/08/2012

Disahkan oleh *(Certified by)* :
Nama (*Name*) : Benfano Soewito
Jabatan (*Position*) : Ketua Program Studi
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

TIF 302
Data Communication

(3 SKS)

Student

GF 22 GMSB Academic Affairs,
Jl. HR. Rasuna Said Kav. C 22, **Kuningan, Jakarta Selatan 12920**
Phone: 021 – 526 1448

SYLLABUS
TIF 302
Data Communication

I. NAME OF FACULTY

Iwan Adhicandra

II. COURSE DESCRIPTION

This course examines the underlying technology that makes data communication possible. The course will cover various transmission media, digital and analog signals, modulation, multiplexing, circuit switching, error control and flow control. The course will also cover many real-world examples of data communication, including modems, DSL, Ethernet, wireless LANs, and cell phones.

III. COURSE PREREQUISITE:

None

IV. LANGUAGE:

Indonesian and English

V. TEXTBOOK & STATIONARY

Textbooks [T]:

[T1] Forouzan, Behrouz A., and Sophia Chung Fegan, (2003) *Data Communications and Networking*, McGraw-Hill.

VI. COURSE OBJECTIVES

By the end of this course, students should be able to:

- Understand main issues in data communications including layered communication architectures, transmission techniques, protocol design, network organization, security, implementation techniques and user-to-user data exchange principles

VII. METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and computer lab exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

VIII. ATTENDANCE PROCEDURE

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

IX. METHODS OF EVALUATION

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged. Lab exercises to be completed in the class or as homework.

Class Review Questions. These include short answers (**S.A.**) and algorithm workbenches (**A.W.**) to provide feedback of the students' understanding topic by topic.

Mid-Test and Final-Test. These written tests will evaluate the students' level of knowledge and skills on this course.

Summary of the grading :

Final test	40%
Mid-test	30%
Lab Report / Assignment	30%

X. COURSE OUTLINE

LECTURE (L) SESSIONS

SESSION	TOPIC	Textbook	Course Assignment
L-1	Introduction and Basic Concept	**[T1],** Ch.1, Ch.2, p1-p32	Lab Session
L-2	The OSI Model	**[T1],** Ch.3, p35-p53	Lab Session
L-3	Signals and Encoding	**[T1],** Ch.4, Ch.5, p55-p118	Lab Session
L-4	Transmission of Digital Data and Transmission Media	**[T1],** Ch.6, Ch.7, p121-p195	Lab Session
L-5	Multiplexing, and Error Detection and Correction	**[T1],** Ch.8, Ch.9, p197-p245	Lab Session
L-6	Data Link Control and Protocols	**[T1],** Ch.10, Ch.11, p247-p304	Lab Session
L-7	Local Area Networks (LAN)	**[T1],** Ch.12, p307-p341	Review
MID SEMESTER TEST			

L-8	Metropolitan Area Networks (MAN)	**[T1],** Ch.13, p343-p355	Lab Session
L-9	Switching	**[T1],** Ch.14, p357-p374	Lab Session
L-10	Networking and Internetworking Devices	**[T1],** Ch.20, p477-p506	Lab Session
L-11	Transport Layer	**[T1],** Ch.21, p507-p523	Lab Session
L-12	Upper OSI Layer	**[T1],** Ch.22, p525-p548	Lab Session
L-13	TCP/IP	**[T1],** Ch.23, p549-p590	Review
L-14	Review	Review	Review
FINAL SEMESTER TEST			

COMPUTER LAB (CL) SESSIONS

SESSION	TOPIC	Lab Assignment
CL-1	Packet Sniffing and Wireshark	
CL-2	ARP	
CL-3	Ethernet	
CL-4	Wireless	
CL-5	IP and ICMP	
CL-6	UDP and TCP	
CL-7	Review	
MID SEMESTER TEST		
CL-8	HTTP and FTP	
CL-9	TELNET, SMTP,	
CL-10	POP3 and DNS	
CL-11	Encoding and Transport Layer	
CL-12	IPsec, SSL, SSH	
CL-13	IPsec, SSL, SSH	

CL-14	Review	
FINAL SEMESTER TEST		

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* UNI 103	**Nama Mata Kuliah** *(Course Name)* **:** Pendidikan Kewarganegaraan/Citizenship		
Program Studi *(Study Program)* **:** Komunikasi, Politik, Manajemen, Akunting, Teknik Informatika, Sistem Informatika, Teknologi Pangan, Teknik Lingkungan, Teknik Sipil	**Fakultas** *(Faculty)* **:** FTIK,FEIS		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:**	**Kredit** *(Credit)* **:** 2		
	Kuliah *(Lecture)* **:** 2	**Tutorial :** -	**Praktikum** *(Practicum)***:** -
Revisi *(Revision Status)***:** R1	**Semester Ganjil/Genap*** **Tahun Akademik 2012/2013** *(AY 2012/2013)*		

Lecturer's name:

1. Asmiati Abdul Malik
2. Bani Pamungkas
3. Maulana
4. Mohammad Abduhzen
5. Ubaedillah

COURSE DESCRIPTION

Mata kuliah Citizenship merupakan salah satu mata kuliah pengembangan kepribadian dan wawasan mahasiswa untuk menjadi seorang warga negara dengan karakter dan visi kebangsaan yang kuat, personalitas diri yang santun dan bermoral serta mampu berfikir kritis dan analisis serta mampu bersikap proaktif merespon dan menjadi solusi atas sejumlah tantangan dan permasalahan yang di hadapi bangsa ini ke depan khusus di tingkat global. Melalui mata kuliah ini diharapkan pula dapat membangun dasar pengetahuan yang kuat dari mahasiswa mengenai peran penting pancasila dalam kehidupan bernegara, dasar-dasar kewarganegaraan (*civic knowledge*), keterampilan kewarganegaraan (*civic skill*), sikap kewarganegaraan (*civic disposition)* dan etika kewarganegaraan (*civic ethic*) dalam menghormati kebhinekaan Indonesia, bersikap demokratis dan menjaga bangunan persatuan dan kesatuan bangsa.

Melalui mata kuliah ini pula diharapkan dapat memperkokoh pemahaman mahasiswa terhadap wawasan kewilayahan negara baik historis, yuridis maupun yurisdiksi nasional Indonesia, sekaligus memberikan wawasan geopolitik dan geostrategi dalam upaya pembangunan segala bidang dalam upaya mendorong peran dan keunggulan Indonesia ikut serta mewujudkan perdamaian dunia atas dasar kemerdekaan.

COURSE OBJECTIVES

Mahasiswa dapat memiliki wawasan, sikap dan perilaku yang mampu mengimplementasikan teori, konsep dan prinsip-prinsip kehidupan kewarganegaraan Indonesia berdasarkan Pancasila dan konsitusi Undang-Undang Dasar 1945 yang demokratis, berjiwa kebangsaan,

cinta tanah air, menjunjung tinggi nilai moralitas dan hukum, partisipatif dalam aktivitas pembangunan masyarakat bangsa dan negara bangsa dalam kerangka menjaga keutuhan wilayah sesuai geopolitik dan geostragi Indonesia, guna mencapai tujuan dan cita-cita bangsa

METHODS OF INSTRUCTIONS

Pengajaran di dalam kelas menggunakan kombinasi antara metode ceramah, interaksi kelas melalui diskusi, proses pembelajaran personal serta aktivitas di luar kelas yang dilakukan oleh mahasiswa secara berkelompok. Untuk membangun suasana pembelajaran yang dinamis dan interaktif di kelas, digunakan pula fasilitas multimedia dan jaringan internet.

Dalam pembelajaran personal, focus aktivitas dilakukan melalui metode refleksi individual terhadap materi perkuliahan yang dikaitkan dengan aktivitas berkelompok dalam menyelesaikan project kelompok secara bersama. Project kelompok dipresentasi secara bergantian setiap pekannya. Mahasiswa dengan pembelajaran interaktif ini diarahkan untuk dapat membangun interaksi langsung antar mereka, mengemukakan pendapat perseonalnya serta berdiskusi di kelas dalam mengulas realitas nyata yang terjadi dari persoalan bangsa yang relevan dengan materi perkuliahan setiap pekannya. Pada akhir proses perkuliahan, setiap mahasiswa memiliki tugas untuk menuangkan pemikiran dan gagasannya terhadap masa depan bangsa ke depan sebagai refleksi dari pengetahuan yang di dapatnya selama mengikuti perkuliahan.

ATTENDANCE REQUIREMENT

Mengikuti aturan akademik yang berlaku maka:

1. Mahasiswa diwajibkan mengikuti 80% dari keseluruhan materi pengajaran
2. Maksimum keterlambatan adalah 20 menit, lebih dari pada itu dianggap tidak hadir.

ASSESSMENT

Metode dan bobot evaluasi:

Ujian Tengah Semester	20%
Ujian Akhir Semester	20%
Presentasi/Partisipasi di Kelas	40%
Essay	20%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

a. Sedarnawati Yasni, *Citizenship*, BSM, (Bogor, Media Aksara, 2010).
b. Kolumnis dan Wartawan Kompas, *Merajut Nusantara Rindu Pancasila*, (Jakarta: Penerbit Buku Kompas, 2010.
c. Kabul Budiyono, *Pendidikan Pancasila Untuk Perguruan Tinggi*, (Bandung: Alfabeta, 2009).
d. Indra J Piliang, Hadi Soesastro dan Edi Prasetyono, *Merumuskan Kembali Kebangsaan Indonesia*, (Jakarta : Center for Strategic and International, 2002).
e. Jimly Asshiddiqie, *Konstitusi dan Konstitusionalisme Indonesia*, (Jakarta : Sekjen Kepaniteraan Mahkamah Konstitusi RI, 2005).

f. A. Ubaedillah, *Pendidikan Kewarganegaraan (Civic Education) Demokrasi, Hak Asasi Manusia dan Masyarakat Madani*, (Jakarta: Kencana, 2010).
g. Jazim Hamidi, Mustafa Lutfi. *Civic Education : antara realitas politik dan implementasi hukumnya*, (Jakarta : Gramedia Pustaka Utama), 2010.

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references
1	**Topic**: Kontrak Perkuliahan, Overview Urgensi dan Perkembangan Pendidikan PKn, Penjelasan topik bahasan perkuliahan **Specific sub-topics:** 1. Menjelaskan latar belakang pendidikan Pkn di Indonesia 2. Menjelaskan konsep dasar PKn dalam memperkuat orientasi kewarganegaraan. 3. Menjelaskan peran dan kontribusi mahasiswa dalam merespon tantangan dan permasalahan bangsa dengan menggunakan perspektif PKn 4. Menyebutkan Garis Besar dan ruang lingkup perkuliahan PKn	1. General Lecturer 2. Discussion	1. Sedarnawati Yasmin, *Citizenship*, hal. 1-15. 2. Jazim Hamidi, Mustafa Lutfi. *Civic Education* : antara realitas politik dan implementasi hukumnya, hal. 161-181. 3. *Rindu Pancasila*, hal .73-87 4. A. Ubaedillah *Pendidikan Kewarganegaraan*, hal. 1-14 5. Kabul Budiyono, *Pendidikan Pancasila Untuk Perguruan Tinggi*, hal. 1-30
2	**Topic:** Identitas Nasional **Specific sub-topics:** 1. Memahami dan memiliki wawasan Negara/Negara bangsa. 2. Memahami dan memiliki wawasan kebangsaan dan kebhinekaan 3. Memahami dan mencintai identitas nasional Indonesia 4. Dapat merefleksikan peran penting yang harus diambil dalam membangun bangsa di tingkat global	1.General Lecturer 2.Presentation 3. Discussion	1. Sedarnawati Yasmin, *Citizenship*, hal. 17-50. 2. Indra J Piliang, Hadi Soesastro, Edi Prasetyono, *Merumuskan Kembali Kebangsaan Indonesia*, hal. 3-13, 56-62, 86-96. 3. Jazim Hamidi, Mustafa Lutfi. *Civic Education* : antara realitas politik dan implementasi hukumnya, hal. 39-45. 4. *Rindu Pancasila*, hal. 263-268 5. A. Ubaedillah *Pendidikan Kewarganegaraan*, hal 17-34 6. Kabul Budiyono, *Pendidikan Pancasila Untuk Perguruan Tinggi*, hal. 54-65; 111-122; Reread 1-30
3	**Topic:** Pancasila sebagai Sistem Filsafat dan Sistem Etika **Specific sub-topics:** 1. Gagasan kelahiran dan	1. General Lecturer 2.Presentation 3. Discussion	1. Sedarnawati Yasmin, *Citizenship*, hal. 143-216. 2. *Rindu Pancasila*, hal. XVII-XX, 9-12, 17-21 3. A. Ubaedillah *Pendidikan*

Session	Topic & Sub-topics	Methods of delivery	Material references
	berkembangnya Pancasila 2. Mengkaji dan mendiskusikan keberadaan Pancasila dari sudut: ontologis, epistemologis dan aksiologis. 3. Mengerti kedudukan Pancasila sebagai suatu sistem etika 4. Fungsi Pancasila sebagai dasar negara dan perisai dapat menjaga keutuhan bangsa.		*Kewarganegaraan*, hal 17-34 Kabul Budiyono, *Pendidikan Pancasila Untuk Perguruan Tinggi*, hal. 35-46; 125-136
4	**Topik:** Konsitusi sebagai Kontrak Sosial Masyarakat **Specific sub-topics:** 1. Perkembangan gagasan konstitualisme. 2. Menjelaskan dan menguraikan perkembangan konstitusi Indonesia dari masa ke masa 3. Memahami prinsip dasar penyelenggaraan negara yang ada dalam konstitusi	1.General Lecturer 2.Presentation 3. Discussion	1. Sedarnawati Yasmin, *Citizenship*, hal. 93-141. 2. Jimly Asshiddiqie, *Konstitusi dan Konstitusionalisme Indonesi*a, hal. 1-28, 29-50, 51-67. 3. Indra J Piliang, Hadi Soesastro, Edi Prasetyono, *Merumuskan Kembali Kebangsaan Indonesia*, hal 99-115 4. A. Ubaedillah *Pendidikan Kewarganegaraan*, hal 59-81 Kabul Budiyono, *Pendidikan Pancasila Untuk Perguruan Tinggi*, hal. 105-110
5	**Topic:** Sistem Politik, dan Pemerintahan **Specific sub-topics:** 1. Pengertian system politik, mekenisme proses system politik, political role, politial structure, political culture, ciri-ciri system politik, arah dan sasaran dukungan sistem politik, structure dan fungsi politik. 2. Menjelaskan dan menguraikan Pengertian Pemerintah/pemerintahan dalam arti sempit dan luas, system dan proses sistem pemerintahan, khususnya menurut konstitusi Indonesia.	1.General Lecturer 2.Presentation 3. Discussion	1. Sedarnawati Yasmin, *Citizenship*, hal. 93-141, 379-411. 2. Jimly Asshiddiqie, *Konstitusi dan Konstitusionalisme Indonesia*, hal. 131-201, 202-235, 3. Jazim Hamidi, Mustafa Lutfi. *Civic Education* : antara realitas politik dan implementasi hukumnya, hal. 117-159 4. *Rindu Pancasila*, hal. 90-101 5. A. Ubaedillah *Pendidikan Kewarganegaraan*, hal 59-81, 137-157, 159-174 6. Kabul Budiyono, *Pendidikan Pancasila Untuk Perguruan Tinggi*, hal. 111-112;157-195 dan baca kembali 54-65
6	**Topic**: Sistem Pemerintahan Daerah **Specific sub-topics:** 1. Memahami sistem perintahan daerah, 2. Konsepsi otonomi daerah. 3. Asas desentralisasi,	1.General Lecturer 2.Presentation 3. Discussion	1. Sedarnawati Yasmin, *Citizenship*, hal. 93-141, 379-411. 2. Jimly Asshiddiqie, *Konstitusi dan Konstitusionalisme Indonesia*, hal. 131-201, 202-

Session	Topic & Sub-topics	Methods of delivery	Material references
	4. Dekonsentrasi, tugas perbantuan, struktur penda, 5. Pemilihan kepala Daerah, pembentukan kawasan khusus, pembagian urusan pusat dan daerah, asas penyelenggaraan pemerintahan		235, 3. Jazim Hamidi, Mustafa Lutfi. *Civic Education* : antara realitas politik dan implementasi hukumnya, hal. 117-159 4. *Rindu Pancasila*, hal. 90-101 5. A. Ubaedillah *Pendidikan Kewarganegaraan*, hal 59-81, 137-157, 159-174 Kabul Budiyono, *Pendidikan Pancasila Untuk Perguruan Tinggi*, hal. 111-112;157-195 dan baca kembali 54-65
7	**Topic:** Wawasan Kewarganegaraan **Specific sub-topics:** 1. Pengertian WN, asas kewarganegaraan Indonesia, asas khusus kearganegaraan. 2. Menjelaskan dan mendeskripsi hak dan kewajiban warganegara	1. General Lecturer 2.Presentation 3. Discussion	1. Jazim Hamidi, Mustafa Lutfi. *Civic Education* : antara realitas politik dan implementasi hukumnya, hal. 89-113 2. A. Ubaedillah *Pendidikan Kewarganegaraan*, hal 83-93 Kabul Budiyono, *Pendidikan Pancasila Untuk Perguruan Tinggi*, Hal. Reread 7-30; reread 54- 65; Reread 105-110
UJIAN TENGAH SEMESTER			
8	**Topic:** Memahami Hak Asasi Manusia **Specific sub-topics**: 1. Pengertian HAM dan hubungannya dengan Rule of Law. 2. Mendiskripsikan sejarah perjalanan HAM. 3. Mendiskripsikan periodesasi HAM PBB. 4. Mengklasifiksasikan macam dan sifat HAM, 5. Menjelaskan HAM perspektif Indonesia menurut UUD 1945 dan regulasi lainnya	1. General Lecturer 2.Presentation 3. Discussion	1. Sedarnawati Yasmin, *Citizenship*, hal. 219-265. 2. Indra J Piliang, Hadi Soesastro, Edi Prasetyono, Merumuskan Kembali Kebangsaan Indonesia, hal 391-402 3. Jazim Hamidi, Mustafa Lutfi. *Civic Education* : antara realitas politik dan implementasi hukumnya, hal. 209-237 4. Rindu Pancasila, hal.35-38 5. A. Ubaedillah *Pendidikan Kewarganegaraan*, hal 109-135 6. Kabul Budiyono, *Pendidikan Pancasila Untuk Perguruan Tinggi*, hal. 139-153. Ket; hanya sebagai penunjang tambahan berdasarkan konteks implementasi dari sila Kemanusian yang adil dan beradab.
9	**Topic:** Kehidupan Demokrasi dan Civil Society **Specific sub-topics:** 1. Pengertian dan prinsip-prinsip demokrasi, serta nilai-nilai	1. General Lecturer 2.Presentation 3. Discussion	1. Sedarnawati Yasmin, *Citizenship*, hal. 357-377, 425-436. 2. Indra J Piliang, Hadi Soesastro, Edi Prasetyono, Merumuskan Kembali Kebangsaan

Session	Topic & Sub-topics	Methods of delivery	Material references
	demokrasi, 2. Paradigma demokrasi Indonesia, 3. Implementasi demokrasi, 4. Budaya demokrasi dan civil society/mas. madani., 5. Pendidikan demokrasi: pengerian, peran infra dan supra struktur politik, 6. Memiliki sikap dan perilaku demokratis		Indonesia, hal 254-266 3. Jazim Hamidi, Mustafa Lutfi. *Civic Education* : antara realitas politik dan implementasi hukumnya, hal.183-194. 4. Rindu Pancasila, hal. 115-118. 5. A. Ubaedillah *Pendidikan Kewarganegaraan*, hal 35-57, 175-195 Kabul Budiyono, *Pendidikan Pancasila Untuk Perguruan Tinggi*, hal. 139-153 Ket; hanya sebagai penunjang tambahan berdasarkan konteks implementasi dari sila ke 4 dan ke 5
10	**Topic**: Kewilayahan Negara **Specific sub-topics:** 1. Dinamika perkembangan kewilayahan negara Indonesia: pada awal kemerdekaan hingga kini , 2. Menjelaskan Konsepsi dan keuntungan kewilayahan berdasarkan deklarasi Djuanda 1957 dan UU no 4/PRP/1960 asas negara kepulauan., 3. Konsepsi ZEE Indonesia 200 mil, 4. Kedaulatan negara dalam perspektif kewilayahan	1. General Lecturer 2.Presentation 3. Discussion	1. Sedarnawati Yasmin, *Citizenship*, hal. 267-324, 327-355.
11	**Topic:** Wawasan Nusantara **Specific sub-topics:** 1. Wawasan nasional suatu bangsa, latar belakang filosogis wawasan nusantara, 2. Hakikat, asas, arah pandang, kedudukan, fungsi, tujuan dan implementasi wawasan nusantara	1. General Lecturer 2.Presentation 3. Discussion	1. Sedarnawati Yasmin, *Citizenship*, hal. 267-324, 327-355.
12	**Topic:** Geopolitik dan Geostrategi Indonesia **Specific sub-topics:** 1. pengertian dan latar belakang geopoltik dan geostrategi Indonesia, 2. Menguraikan aplikasi geopolitik dan geostrategi dalam pembangunan nasional, 3. Menganalisa geopolstra dalam konteks hubungan internasional,	1. General Lecturer 2.Presentation 3. Discussion	1. Sedarnawati Yasmin, *Citizenship*, hal. 267-324, 327-355.

Session	Topic & Sub-topics	Methods of delivery	Material references
	4. Mengkreasikan peran geopolstra Indonesia bagi upaya perdamaian dunia.		
13	**Topic:** Kesadaran Bela Negara **Specific sub-topics:** 1. pentingnya hubungan warga negara dengan kewajiban bela negara. 2. Menguraikan peran yang dapat dilakukan selaku warga negara untuk berkontribusi dalam membela negara.	1. General Lecturer 2.Presentation 3. Discussion	1. Sedarnawati Yasmin, *Citizenship*, hal. 51-92 2. Rindu Pancasila, hal. 108-112 3. Kabul Budiyono, *Pendidikan Pancasila Untuk Perguruan Tinggi*, hal. 109
14	**Topic:** Kapita Selekta dan Refleksi Pekuliahan PKn **Specific sub-topics:** Mereview ulang pembahasan materi secara keseluruhan serta mengidentifikasi kesulitan materi yang dihadapi oleh mahasiswa	1. General Lecturer 2.Presentation 3. Discussion	a. Sedarnawati Yasni, *Citizenship*, BSM, (Bogor, Media Aksara, 2010). b. Kolumnis dan Wartawan Kompas, *Merajut Nusantara Rindu Pancasila*, (Jakarta: Penerbit Buku Kompas, 2010. c. Kabul Budiyono, *Pendidikan Pancasila Untuk Perguruan Tinggi*, (Bandung: Alfabeta, 2009). d. Indra J Piliang, Hadi Soesastro dan Edi Prasetyono, *Merumuskan Kembali Kebangsaan Indonesia*, (Jakarta : Center for Strategic and International, 2002). e. Jimly Asshiddiqie, *Konstitusi dan Konstitusionalisme Indonesia*, (Jakarta : Sekjen Kepaniteraan Mahkamah Konstitusi RI, 2005). f. A. Ubaedillah, *Pendidikan Kewarganegaraan (Civic Education) Demokrasi, Hak Asasi Manusia dan Masyarakat Madani*, (Jakarta: Kencana, 2010). g. Jazim Hamidi, Mustafa Lutfi. *Civic Education : antara realitas politik dan implementasi hukumnya*, (Jakarta : Gramedia Pustaka Utama), 2010.
UJIAN AKHIR SEMESTER			

Dipersiapkan oleh *(Prepared by* **)**:
Nama (*Name*) : [koordinator mata kuliah]

Disahkan oleh *(Certified by)* :
Nama (*Name*) : [Ketua Program Studi]

Jabatan (*Position*)	:	Jabatan (*Position*)	:
Tanggal (*Date*)	:	Tanggal (*Date*)	:

SYLLABUS

Kode Mata Kuliah *(Course Code):* FTK 202	**Nama Mata Kuliah** *(Course Name)* **:** *Effectual Entrepreneurship*		
Program Studi *(Study Program)* **:** Teknik Informatika	**Fakultas** *(Faculty)* **:** FTIK		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** -	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** -	**Praktikum** *(Practicum)***:** -
Revisi *(Revision Status)***:** -	**Semester Ganjil/Genap*** *(Odd Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: Boy Iskandar Pasaribu, S.Kom., G.D.B.S., M.I.S., M.I.T.			

COURSE DESCRIPTION

The course is aimed to equip the students with entrepreneurial soft-skills on the ability to make doable entrepreneurial decisions and actions at a novice level through ***understanding***, ***applying*** and ***analyzing*** Effectuation Process and Principles (EPP) logic by expert and growing start-up entrepreneurs for the early stage creation of the students' start-up ventures based on the students' characteristics, knowledge, skills and resources.

COURSE OBJECTIVES

By the end of this course, students should be able to:

O1. ***Remember & Understand:***

Demonstrate an understanding of Effectuation Process and Principles (EPP) mindset being applied by global expert and Indonesian growing start-up entrepreneurs.

O2. ***Apply:***

Demonstrate a competency in implementing and executing EPP mindset by the students to make doable entrepreneurial decisions and actions for the early-stage creation of the students' start-up ventures.

O3. ***Analyze:***

Demonstrate a competency in analyzing the implementation of EPP mindset by Indonesian growing start-up entrepreneurs whether there are similarities and differences with the global expert entrepreneurs. The students are expected to attribute to their perspective in the early-stage creation of their own ventures with the guidance of the faculty.

METHODS OF INSTRUCTIONS

With the guidance through lecturing, facilitating and mentoring from the faculty, the students should do ***lecture-based, discussion-based*** and ***experiential-based*** learning in order to produce ***Group Learning Logs and Group Presentation*** assignments through the implementation of EPP on their early-stage entrepreneurial journey.

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in class sessions is of prime importance for successful completion of this course. Students will be expected to attend for the class sessions on time and to remain in class until the end of the class sessions. Students should **attend at least 80%** of the scheduled classes in order to be able **to get a marking score on the Final Evaluation**.

ASSESSMENT

10 Group Learning Logs (gLogs): To evaluate the student's building up process of his/her EPP journey toward achieving objectives: understanding (**O1)**, applying (**O2)**, and analysis (**O3)**.

Peer Assessment (PA): To evaluate the students' teamwork in order to help each other in understanding and analysis that are related to the implementation of EPP by expert entrepreneurs, start-up entrepreneurs and the students' own ventures. The higher the quality and quantity of the understanding (**O1**), applying (**O2**) and analysis (**O3**) through the group discussions, the higher grade the student will get. (0: Good Contribution, -1: Not enough contribution, -2: Very minimum contribution)

Group Presentation (GP): To evaluate the students' understanding and analysis that is related to the implementation of EPP onto the students' ventures. The higher the quality of the understanding (**O1**), applying (**O2**) and analysis (**O3**), the higher grade the student will get.

1. **FINAL-EVALUATION : 40%**
   a. **gLog-6 to gLog-10 (40%)**
   b. **PA (each student evaluate other students within his/her group: 0, -1, -2)**
2. **MID-EVALUATION : 30%**
   a. **gLog-1 to gLog-5 (30%)**
   b. **PA (each student evaluate other students within his/her group: 0, -1, -2)**
3. **ASSIGNMENT : 30%**
   GP-S14 (30%)

Late & Absent Score-Deduction Policy:

Any student who is **more than 15 minutes late or absent** to the scheduled class will face a consequence of his/ her evaluation score being deducted by **-1**. This policy is implemented starting from **Session 2 until Session 14**.

MATERIAL REFERENCES AND REQUIRED SUPPLIES

SIC Handbook [H]:

[H] Pasaribu, B. [2012] *SIC Student Handbook – Resources Compilation and Instructions*, FTIK-Bakrie University, Jakarta.

Textbook [T]:

[T1] Read, S., Sarasvathy, S.D., Drew, N., Wiltbank R., Ohlsson, A-V.(2011) *Effectual Entrepreneurship*, Routledge, New York.

[T2] Sarasvathy, S.D. (2008) *Effectuation: Elements of Entrepreneurial Expertise*, Edward Elgar Publishing Limited, Massachusetts.

Published Paper [PP]:

[PP1] Sarasvathy, S. (2001) *What makes entrepreneurs entrepreneurial?* Harvard Business Review.

[PP2] Sarasvathy, S.D. (2001) *Causation and Effectuation: Toward a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency*, The Academy of Management Review.

[PP3] Stuart Read, Saras Sarasvathy (2005) *Knowing What to Do and Doing What You Know: Effectuation as a Form of Entrepreneurial Expertise*, The Journal of Private Equity.

[PP4] Chandler G.N., DeTienne D.R., McKelvie A. and Mumford T.V. (2011)*Causation and Effectuation Processes: A Validation Study*, Journal of Business Venturing, 26.

Online Video [OV]:

[OV1] Saras Sarasvathy on TED Conference: http://www.youtube.com/watch?v=t5HZW4NqZ-E

[OV2] Stuart Read at IMD Class:

http://www.youtube.com/watch?v=3i1WSaeoygA

[OV3] Saras Sarasvathy: Effectuation Research with Expert Entrepreneurs"

http://www.effectuation.org/videos/saras-sarasvathy-explains-effectuation-research

[OV4] Persuasive Speaking Tips: Pathos, Ethos, Logos:
http://www.youtube.com/watch?v=eOHvNuWp2p4&feature=fvwrel

[OV5] Introduction for Persuasive Speech:

http://www.youtube.com/watch?v=NBObNfR2n_4&NR=1

[OV 6] Justifying Persuasive Speech Topics:

http://www.youtube.com/watch?v=rmG5DbQ3H58&feature=relmfu

[OV 7] Richard Branson on "Affordable Loss" Principle:

http://www.effectuation.org/videos/richard-branson-discusses-his-version-affordable-loss-principle

[OV8] Stuart Read on "Affordable Loss" Principle:

http://www.youtube.com/watch?v=XWLBrj2lLoA

[OV9] ICEHOTEL in Sweden:

http://www.youtube.com/watch?v=eUiR7fhIIBI

[OV10] Stuart Read on "Lemonade" Principle:

http://www.youtube.com/watch?v=ZTTcfbFU8G8&list=PL1CB958D2AB874C4C&index=3

[OV11] Robert Kiyosaki on Cashflow Quadrant:

http://www.youtube.com/watch?v=arh3X9t_98g

Website [W]:

[W1]http://www.effectuation.org/

[W2] http://www.mindtools.com

[W3]https://www.stephencovey.com/7habits/7habits.php

[W4]www.thestartupfoundry.com

[W5]www.inc.com

Further Reference [FR]:

[FR1] Bandura A., Cervone D. (1986)*Differential Engagement of Self-Reactive Influences in Cognitive Motivation*, Organizational Behavior and Human Decision Processes, v.38, i.1.

[FR2] Cialdini R. (2006)*Influence: The Psychology of Persuasion*, Harper Paperbacks, NY.

[FR3] Covey S. (2004) *The 7 Habits of Highly Effective People, Powerful Lessons in Personal Change*, Free Press, NY.

[FR4] Eric Von Hippel (1994)*The Sources of Innovation*, Oxford University Press, NY.

[FR5] Hisrich R.D., Peters M.P., Shepherd D.A. (2008)*Entrepreneurship*, Seventh Edition, McGraw-Hill.

[FR6] Kiyosaki, R. (2010) *The Cashflow Quadrant, Panduan Ayah Kaya Menuju Kebebasan Finansial*, PT Gramedia Pustaka Utama, Jakarta.

[FR7] Knight F. (1921)*Risk, Uncertainty and Profit*, Houghton Mifflin Company, NY.

[FR8] Ronstadt, R. (1988)*The Corridor Principle*, Journal of Business Venturing, v.3, i.1, Winter 1988.

[FR9] Schotther, A. (2003)*Decision Making with Naïve Advice*, American Economic Review.

[FR10] Schumpeter (1911)*Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*, Transaction Publishers, New Brunswick.

COURSE OUTLINE

This section should show topics, sub-topics, specific method of instruction/ delivery and material references.

Session	Topic & Sub-topics	Methods of delivery	Material references
1 (100912)	Topic: Course Introduction Specific sub-topics: 1. Syllabus Explanation 2. EPP Introduction 3. Faculty and Students Introduction	Lecture and Discussion	H, T1, T2, OV3
2 (170912)	Topic: Entrepreneurial Journey Specific sub-topics: 1. The Stages 2. Cashflow Quadrant 3. Achmad Bakrie Case	Lecture and Discussion	H, FR6, OV11
3 (240912)	Topic: **Entrepreneur-1** Sharing Session Specific sub-topics: **Chairul Tanjung**	Lecture and Discussion	H

Session	Topic & Sub-topics	Methods of delivery	Material references
	CT Corp "Start-up Experience in Creating Multiple Businesses Empire"		
4 (011012)	Topic: EPP1: Start with Means and Birth-In-Hand Principle Specific sub-topics: 1. Expert Entrepreneurs Characteristics 2. Start with Means 3. Birth in Hand Principle	Lecture and Discussion	H, T1, T2, FR8
5 (081012)	Topic: **Entrepreneur-2** Sharing Session Specific sub-topics: **Didik Subiyantoro** mbahbintoro.com "Start-up Experience in Creating Online and Offline Batik shop."	Lecture and Discussion	H
6 (151012)	Topic: EPP2: Creating Goal and Affordable-Loss Principle Specific sub-topics: 1. Creating Student Venture Goal 2. Idea Feasibility 3. Affordable Loss Principle	Lecture and Discussion	H, T1, FR4, W2, OV7, OV8
7 (221012)	Topic: **Entrepreneur-3** Sharing Session Specific sub-topics: **Eko Prasetyo** Green Farming Industries "Start-up Experience in Creating Farming and Distribution Business."	Lecture and Discussion	H
MIDDLE SEMESTER EVALUATION			
8 (191112)	Topic: EPP3: Interaction Plan and Quilt Principle Specific sub-topics: 1. Creating Interaction Plan 2. Quilt Principle 3. Ice Hotel Case	Lecture and Discussion	H, T1, FR3, W3, OV9

SYLLABUS

Session	Topic & Sub-topics	Methods of delivery	Material references
9 (261112)	Topic: **Entrepreneur-4** Sharing Session Specific sub-topics: **Selina Liman** urbanesia.com "Start-up Experience in building urbanesia.com."	Lecture and Discussion	H
10 (031212)	Topic: EPP4: Stakeholder Commitment and Lemonade Principle Specific sub-topics: 1. Acquiring Stakeholder Commitment 2. Win-Win Agreement 3. Adhere to Lemonade Principle	Lecture and Discussion	H, T1, T2, W4, W5
11 (101212)	Topic: EPP5: New Means New Goal and Pilot on The Plane Principle Specific sub-topics: 1. Updating Student Venture Goal & Means 2. Pilot on the Plane Principle 3. Control Paradoxes	Lecture and Discussion	H, T1, T2, W4, W5
12 (171212)	Topic: All Processes and Principles Specific sub-topics: 1. All Processes and Principles updated to Student Ventures 2. EPP Summary	Lecture and Discussion	H, T1, T2
13 (311212)	Topic: Group Presentations and Interactions	Presentations and Discussions	H
14 (070113)	Topic: Group Presentations and Interactions	Presentations and Discussions	H
FINAL SEMESTER EVALUATION			

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) :
Jabatan (*Position*) : [koordinator mata kuliah]
Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) :
Jabatan (*Position*) : [Ketua Program Studi]
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* FTK 202	**Nama Mata Kuliah** *(Course Name)* **:** *Soft Internship Class*		
Program Studi *(Study Program)* **:** Sistem Informasi	**Fakultas** *(Faculty)* **:** FTIK		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** -	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** -	**Praktikum** *(Practicum)***:** -
Revisi *(Revision Status)***:** -	**Semester Ganjil/Genap*** *(Odd Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: Boy Iskandar Pasaribu, S.Kom., G.D.B.S., M.I.S., M.I.T.			

COURSE DESCRIPTION

The course is aimed to equip the students with **entrepreneurial soft-skills** on the ability to make **doable entrepreneurial decisions** and **actions** at a novice level through ***understanding***, ***applying*** and ***analyzing*** Effectuation Process and Principles (EPP) mindset by expert and growing start-up entrepreneurs for the early stage of the creation of the students' start-up ventures based on the students' characteristics, knowledge, skills and resources.

COURSE OBJECTIVES

By the end of this course, students should be able to:

1. ***Remember & Understand (C1&C2):***

   Demonstrate an understanding of Effectuation Process and Principles (EPP) mindset being applied by global expert and Indonesian growing start-up entrepreneurs.

2. ***Apply (C3):***

   Demonstrate a competency in implementing and executing EPP mindset by the students to make doable entrepreneurial decisions and actions for the early-stage creation of the students' start-up ventures.

3. ***Analyze (C4):***

   Demonstrate a competency in analyzing the implementation of EPP mindset by Indonesian growing start-up entrepreneurs whether there are similarities and differences with the global expert entrepreneurs. The students are expected to attribute to their perspective in the early-stage creation of their own ventures with the guidance of the faculty.

METHODS OF INSTRUCTIONS

With the guidance through lecturing, facilitating and mentoring from the faculty, the students should do ***lecture-based, discussion-based*** and ***experiential-based*** learning in order to produce ***Group Learning Logs and Group Presentation*** assignments through the implementation of EPP on their early-stage entrepreneurial journey.

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ASSESSMENT

10 Group Learning Logs (gLogs): To evaluate the student's building up process of his/her EPP journey toward achieving objectives: understanding (C**2)**, applying (**C3)**, and analysis (**C4)**.

Peer Assessment (PA): To evaluate the students' teamwork in order to help each other in understanding and analysis that are related to the implementation of EPP by expert entrepreneurs, start-up entrepreneurs and the students' own ventures. The higher the quality and quantity of the understanding (**C2**), applying (**C3**) and analysis (**C4**) through the group discussions, the higher grade the student will get. (0: Good Contribution, -1: Not enough contribution, -2: Very minimum contribution)

Group Presentation (GP): To evaluate the students' understanding and analysis that is related to the implementation of EPP onto the students' ventures. The higher the quality of the understanding (C**2)**, applying (**C3)**, and analysis (**C4)**, the higher grade the student will get.

1. **FINAL-EVALUATION : 40%**
   a. **gLog-5 to gLog-10 (40%)**
   b. **PA (each student evaluate other students within his/her group: 0, -1, -2)**
2. **MID-EVALUATION : 30%**
   a. **gLog-1 to gLog-4 (30%)**
   b. **PA (each student evaluate other students within his/her group: 0, -1, -2)**
3. **ASSIGNMENT : 30%**
   GP-S14 (30%)

Late & Absent Score-Deduction Policy:

Any student who is **more than 15 minutes late or absent** to the scheduled class will face a consequence of his/ her evaluation score being deducted by **-1**. This policy is implemented starting from **Session 2 until Session 14**.

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[T1] Read, S., Sarasvathy, S.D., Drew, N., Wiltbank R., Ohlsson, A-V.(2011) *Effectual Entrepreneurship*, Routledge, New York.

[T2] Sarasvathy, S.D. (2008) *Effectuation: Elements of Entrepreneurial Expertise*, Edward Elgar Publishing Limited, Massachusetts.

Published Paper [PP]:

[PP1] Sarasvathy, S. (2001) *What makes entrepreneurs entrepreneurial?* Harvard Business Review.

[PP2] Sarasvathy, S.D. (2001) *Causation and Effectuation: Toward a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency*, The Academy of Management Review.

[PP3] Stuart Read, Saras Sarasvathy (2005) *Knowing What to Do and Doing What You Know: Effectuation as a Form of Entrepreneurial Expertise*, The Journal of Private Equity.

[PP4] Chandler G.N., DeTienne D.R., McKelvie A. and Mumford T.V. (2011)*Causation and Effectuation Processes: A Validation Study*, Journal of Business Venturing, 26.

Online Video [OV]:

[OV1] Saras Sarasvathy on TED Conference: http://www.youtube.com/watch?v=t5HZW4NqZ-E

[OV2] Stuart Read at IMD Class:

http://www.youtube.com/watch?v=3i1WSaeoygA

[OV3] Saras Sarasvathy: Effectuation Research with Expert Entrepreneurs"

http://www.effectuation.org/videos/saras-sarasvathy-explains-effectuation-research

[OV4] Persuasive Speaking Tips: Pathos, Ethos, Logos:
http://www.youtube.com/watch?v=eOHvNuWp2p4&feature=fvwrel

[OV5] Introduction for Persuasive Speech:

http://www.youtube.com/watch?v=NBObNfR2n_4&NR=1

[OV 6] Justifying Persuasive Speech Topics:

http://www.youtube.com/watch?v=rmG5DbQ3H58&feature=relmfu

[OV 7] Richard Branson on "Affordable Loss" Principle:

http://www.effectuation.org/videos/richard-branson-discusses-his-version-affordable-loss-principle

[OV8] Stuart Read on "Affordable Loss" Principle:

http://www.youtube.com/watch?v=XWLBrj2lLoA

[OV9] ICEHOTEL in Sweden:

http://www.youtube.com/watch?v=eUiR7fhIIBI

[OV10] Stuart Read on "Lemonade" Principle:

http://www.youtube.com/watch?v=ZTTcfbFU8G8&list=PL1CB958D2AB874C4C&index=3

[OV11] Robert Kiyosaki on Cashflow Quadrant:

http://www.youtube.com/watch?v=arh3X9t_98g

Website [W]:

[W1]http://www.effectuation.org/

[W2] http://www.mindtools.com

[W3]https://www.stephencovey.com/7habits/7habits.php

[W4]www.thestartupfoundry.com

[W5]www.inc.com

Further Reference [FR]:

[FR1] Bandura A., Cervone D. (1986)*Differential Engagement of Self-Reactive Influences in Cognitive Motivation*, Organizational Behavior and Human Decision Processes, v.38, i.1.

[FR2] Cialdini R. (2006)*Influence: The Psychology of Persuasion*, Harper Paperbacks, NY.

[FR3] Covey S. (2004) *The 7 Habits of Highly Effective People, Powerful Lessons in Personal Change*, Free Press, NY.

[FR4] Eric Von Hippel (1994)*The Sources of Innovation*, Oxford University Press, NY.

[FR5] Hisrich R.D., Peters M.P., Shepherd D.A. (2008)*Entrepreneurship*, Seventh Edition, McGraw-Hill.

[FR6] Kiyosaki, R. (2010) *The Cashflow Quadrant, Panduan Ayah Kaya Menuju Kebebasan Finansial*, PT Gramedia Pustaka Utama, Jakarta.

[FR7] Knight F. (1921)*Risk, Uncertainty and Profit*, Houghton Mifflin Company, NY.

[FR8] Ronstadt, R. (1988)*The Corridor Principle*, Journal of Business Venturing, v.3, i.1, Winter 1988.

[FR9] Schotther, A. (2003)*Decision Making with Naïve Advice*, American Economic Review.

[FR10] Schumpeter (1911)*Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*, Transaction Publishers, New Brunswick.

COURSE OUTLINE

This section should show topics, sub-topics, specific method of instruction/ delivery and material references.

Session	Topic & Sub-topics	Methods of delivery	Material references
1	Topic: Course Introduction Specific sub-topics: 1. Syllabus Explanation 2. EPP Introduction 3. Faculty and Students Introduction	Lecture and Discussion	H, T1, T2, OV3
2	Topic: Entrepreneurial Journey Specific sub-topics: 1. The Stages 2. Cashflow Quadrant 3. Achmad Bakrie Case	Lecture and Discussion	H, FR6, OV11
3	Topic: Entrepreneur-1 Sharing Session Specific sub-topics: Chairul Tanjung CT Corp	Lecture and Discussion	H

Session	Topic & Sub-topics	Methods of delivery	Material references
	"Start-up Experience in Creating Multiple Businesses Empire"		
4	Topic: EPP1: Start with Means and Birth-In-Hand Principle Specific sub-topics: 1. Expert Entrepreneurs Characteristics 2. Start with Means 3. Birth in Hand Principle	Lecture and Discussion	H, T1, T2, FR8
5	Topic: Entrepreneur-2 Sharing Session Specific sub-topics: Didik Subiyantoro mbahbintoro.com "Start-up Experience in Creating Online and Offline Batik shop."	Lecture and Discussion	H
6	Topic: EPP2: Creating Goal and Affordable-Loss Principle Specific sub-topics: 1. Expert Entrepreneurs Characteristics 2. Start with Means 3. Birth in Hand Principle	Lecture and Discussion	H, T1, FR4, W2, OV7, OV8
7	Topic: Entrepreneur-3 Sharing Session Specific sub-topics: Eko Prasetyo Green Farming Industries "Start-up Experience in Creating Farming and Distribution Business."	Lecture and Discussion	H
MIDDLE SEMESTER EVALUATION			
8	Topic: EPP3: Interaction Plan and Quilt Principle Specific sub-topics: 1. Expert Entrepreneurs Characteristics 2. Start with Means 3. Birth in Hand Principle	Lecture and Discussion	H, T1, FR3, W3, OV9

SYLLABUS

Session	Topic & Sub-topics	Methods of delivery	Material references
9	Topic: Entrepreneur-4 Sharing Session Specific sub-topics: Selina Liman urbanesia.com "Start-up Experience in building urbanesia.com."	Lecture and Discussion	H
10	Topic: EPP4: Stakeholder Commitment and Lemonade Principle Specific sub-topics: 1. Acquiring Stakeholder Commitment 2. Win-Win Agreement 3. Adhere to Lemonade Principle	Lecture and Discussion	H, T1, T2, W4, W5
11	Topic: EPP5: New Means New Goal and Pilot on The Plan Principle Specific sub-topics: 1. Acquiring Stakeholder Commitment 2. Win-Win Agreement 3. Adhere to Lemonade Principle	Lecture and Discussion	H, T1, T2, W4, W5
12	Topic: All Processes and Principles Specific sub-topics: 1. All Processes and Principles updated to Student Ventures 2. EPP Summary	Lecture and Discussion	H, T1, T2
13	Topic: Group Presentations and Interactions	Presentations and Discussions	H
14	Topic: Group Presentations and Interactions	Presentations and Discussions	H
FINAL SEMESTER TEST			

Dipersiapkan oleh *(Prepared by* **)**:			**Disahkan oleh** *(Certified by)* :		
Nama (*Name*) Jabatan (*Position*) Tanggal (*Date*)	: : :	[Boy Iskandar Pasaribu] [Head of Incubator Dept.]	Nama (*Name*) Jabatan (*Position*) Tanggal (*Date*)	: : :	[Ketua Program Studi]

SYLLABUS

Kode Mata Kuliah *(Course Code):* FTK205	**Nama Mata Kuliah** *(Course Name)* **:** LAN dan Wireless / LAN and Wireless		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Fakultas Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** Komunikasi Data	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** --	**Praktikum** *(Practicum)***:** --
Revisi *(Revision Status)***: R-01**	**Semester Ganjil/Genap*** *(Odd/Even Semester*)* **Tahun Akademik 2012/2013** *(AY* 2012/2013*)*		
Lecturer's name: Irwan Prasetya Gunawan, Ph.D			

COURSE DESCRIPTION

This course presents a comprehensive overview of networking from fundamentals to advanced applications and services. It is based on the top-down approach to networking. The course emphasizes concepts and skills required to design networks, while providing opportunities for practical application and hands-on experience by teaching students how to install, operate, and maintain networks.

This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. It uses the OSI and TCP layered models to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. Labs use a "model Internet" to allow students to analyze real data without affecting production networks. Packet Tracer (PT) activities help students analyze protocol and network operation and build small networks in a simulated environment. At the end of the course, students would be able to build simple LAN topologies by applying basic principles of cabling; performing basic configurations of network devices, including routers and switches; and implementing IP addressing schemes.

COURSE OBJECTIVES

This curriculum provides students with the skills needed to succeed in networking-related degree programs and helps them prepare for CCNA certification. It also helps students develop the skills necessary to fulfill the job responsibilities of network technicians, network administrators, and network engineers. It provides a theoretically rich, hands-on introduction to networking and the Internet.

Upon completion of the course the student should be able to:

- Explain the importance of data networks and the Internet in supporting business communications and everyday activities
- Explain how communication works in data networks and the Internet
- Recognize the devices and services that are used to support communications across an Internetwork
- Use network protocol models to explain the layers of communications in data networks
- Explain the role of protocols in data networks
- Describe the importance of addressing and naming schemes at various layers of data networks
- Describe the protocols and services provided by the Application layer in the OSI and TCP/IP models and describe how this layer operates in various networks

- Analyze the operations and features of the Transport layer protocols and services
- Analyze the operations and feature of the Network layer protocols and services and explain the fundamental concepts of routing
- Design, calculate, and apply subnet masks and addresses to fulfill given requirements
- Describe the operation of protocols at the OSI Data link layer and explain how they support communications
- Explain the role of Physical layer protocols and services in supporting communications across data networks
- Explain fundamental Ethernet concepts such as media, services, and operation
- Employ basic cabling and network designs to connect devices in accordance with stated objectives
- Build a simple Ethernet network using routers and switches
- Use Cisco CLI commands to perform basic router and switch configuration and verification
- Analyze the operations and features of common Application layer protocols such as HTTP, DNS, DHCP, SMTP, Telnet, and FTP.
- Utilize common network utilities to verify small network operations and analyze data traffic.
- Perform advanced switch and router configuration and troubleshooting for VLANs.
- Perform advanced switch configuration and troubleshooting for STP.
- Perform advanced switch configuration and troubleshooting for VTP.
- Perform advanced switch configuration and troubleshooting for switch security.
- Perform advanced switch configuration and troubleshooting for trunking switches
- Perform basic configuration of a wireless access point.
- Perform basic configuration of a wireless router.
- Perform basic configuration of a wireless NIC.
- Perform basic wireless LAN troubleshooting.
- Perform basic wireless router security configuration and troubleshooting.

METHODS OF INSTRUCTIONS

The course is delivered in a combination of class-based and practical-based. Practical would be done in several different modes including packet tracer network simulator, wireshark, and direct practice using routers and switches on laboratory environment.

Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

It is imperative that students take an active interest in the course. To succeed in this course, students must read, think, and write in an analytical manner and this takes time and practice. Such practice can only be achieved by working exercises. When troubles arise, and they will, the student must ask questions which may be directed to the instructor or other students in a variety of ways.

Students are also encouraged to work together on problem sets as part of their exercises. However, individual must ultimately demonstrate the understanding of the material by writing up his/her own solutions without the help of other students or their written work.

On average students need to spend, at least, 6 hours of study and preparation per week for this course.

ATTENDANCE REQUIREMENT

Comply with academic rules. Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session.

Absence from lectures shall not exceed 22%. Students who exceed the 22% limit without a medical or emergency excuse acceptable to and approved by the Dean of the Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Required materials:

1. CCNA Exploration Module 2, "Routing Protocols and Concepts", http://tif.bakrie.ac.id/?content=cnap

COURSE OUTLINE

Note: all materials are delivered by means of in-class lectures and class room discussions

Course Outline				
Wk	**Ch**	**Sub Ch**	**Section**	**Topics**
1	**1.0**			**Living in a Network-centric world- Chapter Intro**
			1.0.1	Chapter Introduction
		1.1		Communicating in a Network-Centric World
			1.1.1	Networks supporting the Way We live
			1.1.2	Examples of Today's Popular Communication Tools
			1.1.3	Networks Supporting the Way We Learn
			1.1.4	Networks Supporting the Way We Work
			1.1.5	Networks Supporting the Way We Play
		1.2		Communication- An Essential Part of Our Lives
			1.2.1	What Is Communication?
			1.2.2	Quality of Communications
		1.3		The Network as a Platform
			1.3.1	Communicating over Networks
			1.3.2	The Elements of a Network
			1.3.3	Converged Networks

Course Outline				
Wk	**Ch**	**Sub Ch**	**Section**	**Topics**
		1.4		The Architecture of the Internet
			1.4.1	The Network Architecture
			1.4.2	A Fault Tolerant Network Architecture
			1.4.3	A Scalable Network Architure
			1.4.4	Providing Quality of Service
			1.4.5	Providing Network Security
		1.5		Trends in Networking
			1.5.1	Where is it all Going
			1.5.2	Networking Career Opportunities
		1.6		Chapter Labs
			1.6.1	Lab- Using collaboration tools- Internet relay chat (IRC) and instant messaging (IM)
			1.6.2	Lab- Using collaboration tools- Wiki's and Web logs
		1.7		
			1.7.1.1 and	Summary and Review
			1.7.1.3	Packet Tracer Skills integration challenge
			1.7.4	Learn more
	2.0		2.0.1	Communicating over the Network- Chapter
		2.1		The Platform for Communications
			2.1.1	The Elements of Communication
			2.1.2	Communicating the Messages
			2.1.3	Components of the Network
			2.1.4	End Devices and their Role on the Network
			2.1.5	Intermediary devices and their Role on the
			2.1.6	Network Media
		2.2		LANS, WANS, and Internetworks
			2.2.1	Local Area Networks
		2.2	2.2.2	Wide Area Networks
			2.2.3	The Internet- A Network of Networks
			2.2.4	Network Representations
			2.2.5	Activity- Using NeoTrace to View Internetworks
		2.3		Protocols
			2.3.1	Rules that Govern Communications
			2.3.2	Network Protocols
			2.3.3	Protocol Suites and Industry Standards
			2.3.4	The Interaction of Protocols
			2.3.5	Technology Independent Protocols
		2.4		Using Layered Models
			2.4.1	The Benefits of Using a Layered Model
			2.4.2	Protocols and Reference Models

Course Outline				
Wk	**Ch**	**Sub Ch**	**Section**	**Topics**
			2.4.3	The TCP/IP Model
			2.4.4	The Communication Process
			2.4.5	Protocol Data Units and Encapsulation
			2.4.6	The Sending and Receiving Process
			2.4.7	The OSI Model
			2.4.8	Comparing the OSI Model with the TCP/IP Model
		2.5		Network Addressing
			2.5.1	Addressing the Network
			2.5.2	Getting the Pieces of Data to the End Device
			2.5.3	Getting the Pieces of Data through the
			2.5.4	Getting the Pieces of Data to the Right
			2.5.5	Warriors of the Net
		2.6		Chapter Labs
			2.6.1	Lab: Topology Orientation and Building a Small
			2.6.2	Lab: Using Wireshark to View Protocol Data
		2.7		Chapter Summary
			2.7.1	Summary and Review
			2.7.2	Check Your Understanding
			2.7.3	Chapter Problems and Discussion
			2.7.4	PT Skills Integration Challenge
			2.7.5	To Learn More
		2.8	2.8.1	Chapter Quiz
	3.0			Application Layer Functionality and
			3.0.1	Chapter Introduction
		3.1		Applications – the interface between the networks
			3.1.1	OSI and TCP/IP Model
			3.1.2	Application layer software
			3.1.3	User Applications, services, and application layer protocols
			3.1.4	Application layer protocol functions
		3.2		Making provisions for application layer services
			3.2.1	The client-server model
			3.2.2	Servers
			3.2.3	Application layer services and protocols
			3.2.4	Peer-to-peer networking and P2P
		3.3		Application Layer protocols and services examples
			3.3.1	DNS services and protocol
			3.3.2	WWW service and HTTP
			3.3.3	E-mail services and SMTP/POP Protocols
			3.3.4	FTP
			3.3.5	DHCP
			3.3.6	File Sharing Services and SMB protocol

Course Outline				
Wk	**Ch**	**Sub Ch**	**Section**	**Topics**
			3.3.7	P2P services and Gnutella protocol
			3.3.8	Telnet Services and Protocol
		3.4		Chapter labs and activities
			3.4.1	Data stream capture
			3.4.2	Lab: Managing a web server
			3.4.3	Lab: Email services and protocols
		3.5		Chapter Summary
			3.5.1	Summary and Review
		3.6		Chapter Quiz
			3.6.1	Chapter Quiz
2	4.0		4.0.1	OSI Transport Layer- Chapter Introduction
		4.1		Roles of the Transport Layer
			4.1.1	Purpose of the Transport Layer
			4.1.2	Controlling the conversations
			4.1.3	Supporting Reliable Communication
			4.1.4	TCP and UDP
			4.1.5	Port Addressing
			4.1.6	Segmentation and Reassembly- Divide and
		4.2		The TCP protocol – Communicating with reliability
			4.2.1	TCP- Making Conversations Reliable
			4.2.2	TCP Server Processes
			4.2.3	TCP Connection Establishment and Termination
			4.2.4	TCP Three-Way Handshake
			4.2.5	TCP Session Termination
		4.3		Managing TCP Sessions
			4.3.1	TCP Segment Reassembly
			4.3.2	TCP Acknowledgement with Windowing
			4.3.3	TCP Retransmission
			4.3.4	TCP Congestion Control- Minimizing Segment
		4.4		The UDP protocol – Communicating with Low
			4.4.1	UDP- Low Overhead vs. Reliability
			4.4.2	UDP Datagram Reassembly
			4.4.3	UDP Server Processes and Requests
			4.4.4	UDP Client Processes
		4.5		Lab Activities
			4.5.1	Observing TCP and UDP using Netstat
			4.5.2	TCP/IP Transport Layer Protocols, TCP and UDP
			4.5.3	Application and Transport Layer Protocols- Lab
		4.6	4.6.1	Chapter Summary and Review
		4.7	4.7.1	Chapter Quiz

Course Outline				
Wk	**Ch**	**Sub Ch**	**Section**	**Topics**
	5.0		5.0.1	Chapter Introduction OSI Network Layer
		5.1		Roles of the Network Layer – from host to host
			5.1.1	Network Layer - Communication from host to host
			5.1.2	The IP v4 protocol - example network layer
				protocol
			5.1.3	IP v4 protocol - connectionless
			5.1.4	IP v4 protocol- best effort
			5.1.5	The IP protocol – media independent
			5.1.6	IPv4 packet- Packaging the Transport layer pdu
			5.1.7	IPv4 packet header
		5.2		Networks – Dividing hosts into groups
			5.2.1	Networks - separating host into common groups
			5.2.2	Why separate hosts into networks? - performance
			5.2.3	Why separate hosts into networks? - security
			5.2.4	Why separate hosts into networks? – Address Management
			5.2.5	How do we separate hosts into networks? - Hierarchical addressing
			5.2.6	Dividing the networks - networks from networks
3		5.3		Routing – How our data packets are handled
			5.3.1	Device parameters - supporting communication outside our network
			5.3.2	IP Packets - Carrying data end to end
			5.3.3	A gateway - the way out of our network
			5.3.4	A route- the path to a network
			5.3.5	The Destination Network
			5.3.6	The next hop - where the packet goes next
			5.3.7	Packet forwarding - moving the packet toward its destination
			5.4	Routing processes: how routes are learned
			5.4.1	Routing protocols- sharing the routes
			5.4.2	Static routing
			5.4.3	Dynamic routing
		5.5		Labs
			5.5.1	Lab- Examining a device's gateway
			5.5.2	Examining a route
		5.6	5.6.1	Summary
		5.7	5.7.1	Chapter Quiz
	6.0		6.0.1	Chapter Introduction: Addressing the
		6.1		IP v4 Addresses
			6.1.1	The anatomy of an IPv4 address
			6.1.2	Knowing the numbers- Binary to decimal conversion
			6.1.3	Practicing binary to decimal conversions
			6.1.4	Knowing the numbers- Decimal to binary conversion
			6.1.5	Practicing decimal to binary conversion

Course Outline				
Wk	**Ch**	**Sub Ch**	**Section**	**Topics**
		6.2		Addresses for different purposes
			6.2.1	Types of addresses in an IPv4 network
			6.2.2	Calculating network, hosts, and broadcast addresses
			6.2.3	Unicast, multicast, broadcast - types of communication
			6.2.4	Reserved IPv4 address ranges
			6.2.5	Public and private address
			6.2.6	Special IPv4 addresses
			6.2.7	Legacy IPv4 addressing
		6.3		Assigning addresses
			6.3.1	Planning to address the network
			6.3.2	Static or dynamic addressing for end user devices
			6.3.3	Assigning addresses to other devices
			6.3.4	Who assigns the different addresses
			6.3.5	ISP's
			6.3.6	Overview of IPv6
		6.4		Is it on my network?
			6.4.1	The subnet mask- defining the network and host portions
			6.4.2	ANDing- What is in our network?
			6.4.3	The ANDing process
		6.5		Calculating Addresses
			6.5.1	Basic Subnetting
			6.5.2	Subnetting- Dividing Networks into the Right
			6.5.3	Subnetting- Subnetting a Subnet
			6.5.4	Determining the Network Address
			6.5.5	Calculating the Number of Hosts
			6.5.6	Determining Valid Addresses for Hosts
			6.5.7	Assigning Addresses
			6.5.8	Addressing in a Tiered Internetwork
4		6.6		Testing the Network Layer
			6.6.1	ping 127.0.0.1 - Testing the local stack
			6.6.2	ping gateway - Testing connectivity to the local
			6.6.3	ping remote host - Testing connectivity to remote LAN
			6.6.4	traceroute (tracert) - Testing the path
			6.6.5	ICMPv4 - the protocol supporting testing and messaging
		6.7		Labs and Activities
			6.7.1	Lab- Ping and Traceroute
			6.7.2	Lab- Examining ICMP packet
			6.7.3	Activity- IPv4 address subnetting part 1
			6.7.4	Activity- IPv4 address subnetting part 2
			6.7.5	Subnet and Router Configuration
		6.8	6.8.1	Chapter summary and review

Course Outline				
Wk	**Ch**	**Sub Ch**	**Section**	**Topics**
		6.9	6.9.1	Chapter Quiz
	7.0		7.0.1	OSI Data Link Layer- Chapter Introduction
		7.1		Data Link layer – Accessing the media
			7.1.1	Data Link layer – Supporting and connecting to upper layer
			7.1.2	Data Link layer – Controlling transfer across local media
			7.1.3	Data Link layer – Creating a frame
			7.1.4	Data Link Layer – Connecting upper layer services to the media
			7.1.5	Data link layer standards
		7.2		Media Access control techniques
			7.2.1	Placing data on the media
			7.2.2	Media access control for shared media
			7.2.3	Media access control for non-shared media
			7.2.4	Logical topology vs. physical topology
			7.2.5	Point to point topology
			7.2.6	Multi-access topology
			7.2.7	Ring topology
		7.3		Media access control addressing and framing data
			7.3.1	Data link layer protocols- the frame
			7.3.2	Framing - the role of the header
			7.3.3	Addressing- Where the frame goes
			7.3.4	Framing - the role of the trailer
			7.3.5	Data Link layer protocols - the frame
		7.4		Putting it all together
			7.4.1	Follow data through an internetwork
		7.5		Labs and activitites
			7.5.1	Investigating layer 2 frame headers
			7.5.2	Lab- Frame examination
		7.6	7.6.1	Chapter Summary and Review
		7.7	7.7.1	Chapter quiz
5	8.0		8.0.1	OSI Physical Layer- Chapter Introduction
		8.1		The Physical layer –Communication Signals
			8.1.1	Physical Layer - Purpose
			8.1.2	Physical Layer – Operation
			8.1.3	Physical Layer - Standards
			8.1.4	Physical Layer Fundamental Principles
		8.2		Physical Signaling and Encoding – Representing
			8.2.1	Signaling Bits for the Media
			8.2.2	Encoding – Grouping Bits
			8.2.3	Data Carrying Capacity
		8.3		Physical media – Connecting Communication
			8.3.1	Types of Physical Media

Course Outline				
Wk	**Ch**	**Sub Ch**	**Section**	**Topics**
			8.3.2	Copper Media
			8.3.3	Unshielded Twisted Pair (UTP) Cable
			8.3.4	Other Copper Cable
			8.3.5	Copper Media Safety
			8.3.6	Fiber Media
			8.3.7	Wireless Media
			8.3.8	Media Connectors
			8.4.1	Media Connectors Lab Activity
			8.5.1	Summary and Review
			8.6.1	Chapter Quiz
	9.0		9.0.1	Ethernet- Chapter Introduction
		9.1		Overview of Ethernet
			9.1.1	Ethernet – Standards and Implementation
			9.1.2	Ethernet- Layer 1 and Layer 2
			9.1.3	Logic Link Control – Connecting to the Upper
			9.1.4	MAC – Getting Data to the Media
			9.1.5	Physical Implementations of Ethernet
		9.2		Ethernet- Communication through the LAN
			9.2.1	Historic Ethernet
			9.2.2	Ethernet Collision Management
			9.2.3	Moving to 1 Gbps and Beyond
		9.3		The Ethernet Frame
			9.3.1	The Frame – Encapsulating the Packet
			9.3.2	The Ethernet MAC Address
			9.3.3	Hexadecimal Numbering and Addressing
			9.3.4	Another Layer of Addressing
			9.3.5	Ethernet Unicast, Multicast and Broadcast
		9.4		Ethernet Media Access Control
			9.4.1	Media Access Control in Ethernet
			9.4.2	CSMA/CD – The Process
			9.4.3	Ethernet Timing
			9.4.4	Interframe Spacing and Backoff
		9.5		Ethernet Physical Layer
			9.5.1	Overview of Physical Layer
			9.5.2	10 and 100Mbps Ethernet
			9.5.3	1000Mbps Ethernet
			9.5.4	Ethernet – Future Options
6		9.6		Hubs and Switches
			9.6.1	Legacy Ethernet – Using Hubs
			9.6.2	Ethernet – Using Switches
			9.6.3	Switches – Selective Forwarding

Course Outline				
Wk	**Ch**	**Sub Ch**	**Section**	**Topics**
			9.6.4	Ethernet – Comparing Hubs and Switches
		9.7		Address Resolution Protocol (ARP)
			9.7.1	The ARP Process – Mapping IP to MAC Addresses
			9.7.2	The ARP Process – Destinations Outside the
			9.7.3	The ARP Process – Removing Address Mappings
			9.7.4	ARP Broadcasts - Issues
			9.7.5	ARP – Layer 2 to Layer 3 Mapping
		9.8		Chapter Labs
			9.8.1	Lab – Address Resolution Protocol (ARP)
			9.8.2	Lab Activities – Cisco Switch MAC Table
			9.8.3	Lab – Intermediary Device as an End Device
		9.9		Chapter Summary
			9.9.1	Summary and Review
		9.10		Chapter Quiz
			9.10.1	Chapter Quiz
	10.0			Planning and Cabling Your Networks
			10.0.1	Chapter Introduction
		10.1		LANS - Making the Physical Connection
			10.1.1	Choosing the Appropriate LAN Device
			10.1.2	Device Selection Factors
		10.2		Device Interconnections
			10.2.1	LAN and WAN- Getting Connected
			10.2.2	Making LAN Connections
			10.2.3	Making WAN Connections
		10.3		Developing an Addressing Scheme
			10.3.1	How Many Hosts in the Network
			10.3.2	How Many Networks
			10.3.3	Designing the Address Standard for our
7		10.4		Calculating the Subnets
			10.4.1	Calculating Addresses: Case 1
			10.4.2	Calculating Addresses: Case 2
		10.5		Device Interconnections
			10.5.1	Device Interfaces
			10.5.2	Making the Device Management Connection
		10.6		Chapter Labs
			10.6.1	Lab- Creating a Small Lab Topology
			10.6.2	Establishing a Console Session with hyperterminal
			10.6.3	Establishing a Console Session with Minicom
		10.7		Chapter Summary
			10.7.1	Summary and Review
		10.8		Chapter Quiz

Course Outline				
Wk	**Ch**	**Sub Ch**	**Section**	**Topics**
			10.8.1	Chapter Quiz
	11.0			Configuring and Testing Your Network
			11.0.1	Chapter Introduction
		11.1		Configuring Cisco devices – IOS basics
			11.1.1	Cisco IOS
			11.1.2	The Configuration files
			11.1.3	Cisco IOS modes
			11.1.4	Basic IOS command structure
			11.1.5	Using CLI help
			11.1.6	IOS "examination" commands
			11.1.7	IOS Configuration Modes
		11.2		Applying a basic configuration using Cisco IOS
			11.2.1	Devices need names
			11.2.2	Limiting device access - Configuring passwords and using banners
			11.2.3	Managing configuration files
			11.2.4	Configuring Interfaces
		11.3		Verifying Connectivity
			11.3.1	Test the Stack
			11.3.2	Testing the Interface Assignment
			11.3.3	Testing the Local Network
			11.3.4	Testing Gateway and Remote Connectivity
			11.3.5	Tracing and Interpreting Trace Results
		11.4		Monitoring and Documenting of Networks
			11.4.1	Basic Network Baselines
			11.4.2	Capturing and Interpreting Trace Information
			11.4.3	Learning About the Nodes on the Network
		11.5		Lab Activity
			11.5.1	Basic Cisco Device Configuration
			11.5.2	Managing Device Configuration
			11.5.3	Configure Host Computers For IP Networking
			11.5.4	Network Testing
			11.5.5	Network Documentation with Utility Commands
			11.5.6	Case Study
		11.6		Summary
			11.6.1	Summary and Review
		11.7	11.7.1	Chapter Quiz
				FINAL-TEST
8	**1.0**			**LAN Design**
		1.1		Switched LAN Architecture
			1.1.1	The Hierarchical Network Model
			1.1.2	Principles of Hierarchical Network Design

Course Outline				
Wk	**Ch**	**Sub Ch**	**Section**	**Topics**
			1.1.3	What is a Converged Network?
		1.2		Matching Switches to Specific LAN Functions
			1.2.1	Considerations for Hierarchical Network Switches
			1.2.2	Switch Features
			1.2.3	Switch Features in a Hierarchical Network
			1.2.4	Switches for Small and Medium Sized Business (SMB)
9	**2.0**			**Configure a Switch**
		2.1		Introduction to Ethernet/ 802.3 LANs
			2.1.1	Key Elements of Ethernet/802.3 Networks
			2.1.3	LAN Design Considerations
		2.2		Forwarding Ethernet Frames Using a Switch
			2.2.1	Switch Forwarding Methods
			2.2.2	Symmetric and Asymmetric Switching
			2.2.3	Memory Buffering
			2.2.4	Layer 2 and Layer 3 switching
		2.3		Switch Management Configuration
			2.3.1	Navigating Command-Line interface Modes
			2.3.2	Using the Help Facility
			2.3.3	Accessing the Command History
			2.3.4	The Switch Boot Sequence
			2.3.5	Prepare to Configure the Switch
			2.3.6	Basic Switch Configuration
			2.3.7	Verifying Switch Configuration
			2.3.8	Basic Switch Management
		2.4		Configuring Switch Security
			2.4.1	Configure Password Options
			2.4.2	Login Banners
			2.4.3	Configure Telnet and SSH
			2.4.4	Common Security Attacks
			2.4.5	Security Tools
			2.4.6	Configuring Port Security
			2.4.7	Securing Unused Ports
10	**3.0**			**VLANs**
		3.1		Introducing VLANs
			3.1.1	Introducing VLANS
			3.1.2	Types of VLANs
			3.1.3	Switch Port Membership Modes
			3.1.4	Controlling Broadcast Domains with VLANs
		3.2		VLAN Trunking
			3.2.1	What is a VLAN Trunk?

Course Outline				
Wk	**Ch**	**Sub Ch**	**Section**	**Topics**
			3.2.2	Trunking Operation
			3.2.3	Trunking Modes
		3.3		Configure VLANs and Trunks
			3.3.1	Configuring VLANs and Trunks Overview
			3.3.2	Configure a VLAN
			3.3.3	Managing VLANs
			3.3.4	Configure a Trunk
		3.4		Troubleshooting VLANs and Trunks
			3.4.1	Common Problems with Trunks
			3.4.2	A Common Problem with VLAN Configurations
11	**4.0**			**Implement VTP**
		4.1		VTP Concepts
			4.1.1	What is VTP?
		4.2		VTP Operation
			4.2.1	Default VTP Configuration
			4.2.2	VTP Domains
			4.2.3	VTP Advertising
			4.2.4	VTP Modes
			4.2.5	VTP Pruning
		4.3		Configure VTP
			4.3.1	Configuring VTP
			4.3.2	Troubleshooting VTP Configurations
			4.3.3	Managing VLANs on a VTP Server
12	**5.0**			**Implement Spanning Tree Protocols**
		5.1		Redundant Layer 2 Topologies
			5.1.1	Redundancy
			5.1.2	Issues with Redundancy
			5.1.3	Real-world redundancy issues
		5.2		Introduction to STP
			5.2.1	The Spanning Tree Algorithm
			5.2.2	STP BPDU
			5.2.3	Bridge ID
			5.2.4	Port Roles
			5.2.5	STP Port States and BPDU Timers
		5.3		STP Convergence
			5.3.1	STP Convergence
			5.3.2	Step 1. Electing A Root Bridge
			5.3.3	Step 2. Elect Root Ports
			5.3.4	Step 3. Electing Designated Ports and Non-Designated
		5.4		PVST+, RSTP and Rapid PVST+
			5.4.1	Cisco and STP Variants

Course Outline				
Wk	**Ch**	**Sub Ch**	**Section**	**Topics**
			5.4.2	PVST+
			5.4.3	RSTP
			5.4.4	Edge Ports
			5.4.5	Link Types
			5.4.6	RSTP Port States and Port Roles
			5.4.7	Configuring rapid PVST+
			5.4.8	Design STP for Trouble Avoidance
			5.4.9	Troubleshoot STP Operation
13	**6.0**			**Implement Inter-VLAN Routing**
		6.1		Inter-VLAN Routing
			6.1.1	Introducing Inter-VLAN Routing
			6.1.2	Interfaces and Subinterfaces
		6.2		Configuring Inter-VLAN Routing
			6.2.1	Configure Inter-VLAN Routing
			6.2.2	Configuring Router-on-a-Stick Inter-VLAN Routing
		6.3		Troubleshooting Inter-VLAN Routing
			6.3.1	Switch Configuration Issues
			6.3.2	Router Configuration Issues
			6.3.3	IP Addressing Issues
14	**7.0**			**Configure a Wireless Router**
		7.1		The Wireless LAN
			7.1.1	Why Use Wireless?
			7.1.2	Wireless LAN Standards
			7.1.3	Wireless Infrastructure Components
			7.1.4	Wireless Operation
			7.1.5	Planning the Wireless LAN
		7.2		Wireless LAN Security
			7.2.1	Threats to Wireless Security
			7.2.2	Wireless Security Protocols
			7.2.3	Securing a Wireless LAN
		7.3		Configure Wireless LAN Access
			7.3.1	Configuring the Wireless Access Point
			7.3.2	Configuring a Wireless NIC
		7.4		Troubleshooting Simple WLAN Problems
			7.4.1	Solve Access Point Radio and Firmware Issues
			7.4.2	Incorrect Channel Settings
			7.4.3	Solving RF Interference
			7.4.4	Correcting Access Point Misplacement
			7.4.5	Problems with Encryption Types
			7.4.6	Solving Authentication Problems

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) : Irwan Prasetya Gunawan
Jabatan (*Position*) : Dosen
Tanggal (*Date*) : 29/08/2012

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito
Jabatan (*Position*) : Ketua Program Studi
Tanggal (*Date*) :

SYLLABUS

Kode Mata Kuliah *(Course Code)*: **TIF 105**	**Nama Mata Kuliah** *(Course Name)* **:** **Pemrograman Berorientasi - Objek Object Oriented Programming**[1)]		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** **Programming algorithm**	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** 0	**Praktikum** *(Practicum)*: 0
Revisi *(Revision Status)*: [R-1/2/3/4/5/...]	**Semester ~~Ganjil~~/Genap*** *(~~Odd~~/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: • Yusuf Lestanto, S.T., M.Sc.			

COURSE DESCRIPTION

In this lecture will be discussed the basic concept of object-oriented progamming using Java language (control structure, IO stream, function, array, interface, string, class (inner class), operators overloading and file).

COURSE OBJECTIVES

By the end of this course, students should be able to:

- To learn what is Object Oriented Programming technology.
- Demonstrate understanding of Object Oriented Programming.
- Demonstrate understanding of class and object.
- Demonstrate understanding of Encapsulation.
- Demonstrate understanding of Inheritance
- Demonstrate understanding of Interface.
- Demonstrate understanding of Polymorphism.

METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and computer lab exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

*Students coming 15 minutes after the class begins are not allowed to signing the class' attendance list. Students coming 30 minutes after the class begins are not allowed to enter the class.

ASSESSMENT

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged. Lab exercises to be completed in the class or as homework.

Class Review Questions. These include short answers (S.A.) and algorithm workbenches (A.W.) to provide feedback of the students' understanding topic by topic.

Lab Exercises. These include the use of MySQL DBMS to provide feedback on the students' practical competency, and group consultancy on the assigned project.

Mid-Test, Final-test and Project-based Assessment. This course is a project-based which means students will be obliged to conduct a project. The project will provide most part of the students' grade. The mid-test will be used to evaluate student understanding of the materials given in the classes.

Summary of the grading :

Project-based Assessment	40%
Final-test	30%
Mid-test	20%
Lab Exercises	10%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Textbooks [T]:

[T1] Deitel, Paul and Deitel, Harvey (2012) Java How To Program (early object), 9th Ed., Prentice Hall.

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references
1.	**Object-Oriented Programming Concept** • Why OOP? • Basic Concept of Object Techmology • OOAD introduction • UML introduction		
2.	**Class and Object** • Constructing a class		

Session	Topic & Sub-topics	Methods of delivery	Material references
	• Instantiate an object • Project proposal is due.		
3.	**Encapsulation 1** • Encapsulation concept • Class member access control • Constructor and destructor • Data member		
4.	**Encapsulation 2** • Operator overloading • Static keyword • This keyword		
5.	**Interface** • Interface concept • Inner class		
6.	**Array and Array List** • Array concept • Array class • Multidimensional array		
7.	**Review of previous lectures and project milestone** • Memory over allocation technique. • Memory management in Embedded System		
	MID SEMESTER TEST		
8.	**Inheritance 1** • Inheritance concept • Class hierarchy and diagram • Inheritance type		
9.	**Inheritance 2** • Constructor and destructor inheritance • Superclass and Subclass		
10.	**Polymorphism 1** • Polymorphism concept • Abstract classes and methods • Final method and classes		
11.	**Polymorphism 2** • User Authentication. • Basic Resource Protection.		
12.	**Thread class**		

Session	Topic & Sub-topics	Methods of delivery	Material references
	• Thread concept • Java API and thread • Observable class and Observer Interface		
13.	**User Interface Design and Implementation** • User Interface design concept • Using Layout Manager		
14.	**Project Presentation** • Final project group presentation		
	FINAL SEMESTER TEST		

Dipersiapkan oleh *(Prepared by)*:

Nama (*Name*) :

Jabatan (*Position*) : [koordinator mata kuliah]

Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito., Ph.D

Jabatan (*Position*) : Ketua Program Studi TIF

Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code)*: **TIF 204**	**Nama Mata Kuliah** *(Course Name)* **:** **Sistem Basis Data Lanjut - Advanced Database Systems1)**		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** **Database Systems**	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** 0	**Praktikum** *(Practicum)*: 0
Revisi *(Revision Status)*: R-1	**Semester ~~Ganjil~~/Genap*** *(~~Odd~~/Even Semester*)* **Tahun Akademik 2011/2012***)*		
Lecturer's name: • Manik Hapsara, S.T., M.Sc., Ph.D.			

COURSE DESCRIPTION

This course is aimed to give students knowledge and skills on how to model database designs with relational algebra and how to optimize database systems.

COURSE OBJECTIVES

By the end of this course, students should be able to :

1. Understand how to use Relational Algebra and Calculus to verify relational-completeness of a database design;
2. Understand how to interpret Relational Algebra and Calculus into SQL statements;
3. Understand the concept of database security and administration;
4. Demonstrate ability to apply security and administration parameters onto a database system;
5. Understand the concept of data management;
6. Understand the concept of transaction management;
7. Understand the concept of query processing and the corresponding algebraic modeling;
8. Understand the concept of distributed database systems;
9. Understand the concept of object-oriented database;
10. Understand the concept of integrating database into web technology;
11. Understand the concept of data warehousing;
12. Understand the concept of data mining

METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and computer lab exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

*Students coming 15 minutes after the class begins are not allowed to signing the class' attendance list. Students coming 30 minutes after the class begins are not allowed to enter the class.

ASSESSMENT

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged. Lab exercises to be completed in the class or as homework.

Class Review Questions. These include short answers to provide feedback for the students understanding topic by topic.

Lab Exercises. These include the use of MySQL DBMS to provide feedback on the students' practical competency, and group consultancy on the assigned project.

Mid-Test and Final Test. The tests will be used to evaluate student understanding of the materials given during the term.

Summary of the grading :

Final Test	40%
Mid-test	30%
Class Review Questions	15%
Assignments	15%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Main book :
Thomas Connolly, Carolyn Begg; Database Systems: A Practical Approach to Design, Implementation, and Management; 5th eds; International Edition; Pearson USA (2010)

Complimentary books :
Ramez Elmasri, Shamkant B. Navathe; Database Systems: Models, Languages, Design, and Application Programming; 6th eds; Global Edition; Pearson USA (2011)

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references
1.	Recalling Database Systems		Chapter 5

Session	Topic & Sub-topics	Methods of delivery	Material references
	Relational Algebra and Relational Calculus		
2.	More on Relational Algebra and Relational Calculus		Chapter 5
3.	Query Processing : • Overview • Query Decomposition • Heuristical Approach to Query Optimization • Cost Estimation • Enumeration of Alternative Execution Strategies		Chapter 23
4.	Security and Administration : • Database security threats • Security countermeasures • Security in MySQL		Chapter 20
5.	Security and Administration : • DBMS and Web security • Data administration and database administration		Chapter20
6.	Data Management		Chapter 21
7.	Half-term review		Chapter 5, 20, 21, 23
	MID SEMESTER TEST		
8.	Transaction Management : • Transaction support • Concurrency control		Chapter 22
9.	Transaction Management : • Database recovery • Advanced transaction models • MySQL cases of transaction management		Chapter 22
10.	Introduction to Distributed Database : • Introduction • Overview of networking • Functions and architectures • Transparencies		Chapter 24

Session	Topic & Sub-topics	Methods of delivery	Material references
11.	Introduction to Object-Oriented Database : • Weakness of RDBMS • Introduction to OODBMS • Persistence in OODBMS • Issues in OODBMS • Advantages and disadvantages		Chapter 27
12.	Introduction to the Web and DBMSs : • Introduction to the internet and the web • Introduction to CGI • Introduction to cookies • Introduction to web Java • Introduction to Microsoft's webs		Chapter 30
13.	Introduction to Data Warehousing : • Introduction • Data Warehouse Architecture • Tools and technologies • Data mart		Chapter 32
14.	Introduction to Data Mining : • Introduction • Data mining techniques • Process and tools • Data mining and data warehousing Final review of the term		Chapter 35
	FINAL SEMESTER TEST		

Dipersiapkan oleh *(Prepared by)*:

Nama (*Name*) :
Jabatan (*Position*) : [koordinator mata kuliah]
Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito., Ph.D
Jabatan (*Position*) : Ketua Program Studi TIF
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* TIF208	**Nama Mata Kuliah** *(Course Name)* **:** Pengolahan Sinyal Digital / Digital Signal Processing		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Fakultas Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** Kalkulus 1-2, Aljabar Linear	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** --	**Praktikum** *(Practicum)***:** --
Revisi *(Revision Status)***: R-01**	**Semester Ganjil/Genap*** *(Odd/Even Semester*)* **Tahun Akademik 2012/2013** *(AY* 2012/2013*)*		
Lecturer's name: Irwan Prasetya Gunawan, Ph.D			

COURSE DESCRIPTION

This course provides an understanding of signal processing in a discrete-time system (digital) domain that can be done in the time (by performing various operations on the signal including convolution and correlation) or in the frequency domain, as well as providing knowledge of discrete-time systems analysis, synthesis and implementation including digital filter design through various methods.

COURSE OBJECTIVES

Upon completion of the course the student should be able to:

- Understand the concepts of discrete-time signals and systems
- Apply transform method and their inverse to signals
- Have knowledge on digital filters and their realisation
- Understand and recognize issues in sampling and reconstruction
- Know about DFT and its fast computation
- Apply frequency domain analysis using DFT
- Understand the fundamental algorithms and structures used in DSP computation
- Design and code DSP applications in a high-level language
- Review state-of-the-art DSP R&D

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

It is imperative that students take an active interest in the course. To succeed in this course, students must read, think, and write in an analytical manner and this takes time and practice. Such practice can only be achieved by working exercises. When troubles arise, and they will, the student must ask questions which may be directed to the instructor or other students in a variety of ways.

Students are also encouraged to work together on problem sets as part of their exercises. However, individual must ultimately demonstrate the understanding of the material by writing up his/her own solutions without the help of other students or their written work.

On average students need to spend, at least, 6 hours of study and preparation per week for this course.

ATTENDANCE REQUIREMENT

Comply with academic rules.
Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session.

Absence from lectures shall not exceed 22%. Students who exceed the 22% limit without a medical or emergency excuse acceptable to and approved by the Dean of the Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Main textbooks:

1. Jonathan Stein, "Digital Signal Processing: A Computer Science Perspective", John Wiley & Sons, 2000
2. Steven Smith, "The Scientist and Engineer's Guide to Digital Signal Processing", California Technical Publishing. Downloadable at http://www.dspguide.com/pdfbook.htm

Supporting reading materials:

- Emmanuel C. Ifeachor and Barrie W. Jervis, "Digital Signal Processing: A Practical Approach", Prentice-Hall, 2002
- Sanjit K. Mitra and James F. Kaiser, "Handbook for Digital Signal Processing", John Wiley & Sons, 1993
- PA Lynn and W Fuerst, "Introductory Digital Signal Processing with Computer Applications", Revised Edition, John Wiley & Sons, 1994
- MIT OpenCourseWare, http://ocw.mit.edu/OcwWeb/Electrical-Engineering-and-Computer-Science/6-341Fall-2005/, 2005

3.

COURSE OUTLINE

Note: all materials are delivered by means of in-class lectures and class room discussions. Chapters in the references refer to [1].

Session	Topics/Sub-Topics	Ref.
1	Introduction, SUI Basis	Ch. 2.1. 2.5
2	Harmonically related signals, sampling theorem	Ch. 3.3-3.4, 2.7-2.10
3	Fourier transform	Ch. 4.1-4.3, 3.6
4	DFT, FFT Algorithm, Hilbert Transform	Ch. 4.7, 4.17, 14.1-14.2
5	Systems: uncertainty principles, convolution	Ch. 4.4,6.1-6.4, 6.8

Session	Topics/Sub-Topics	Ref.
6	Systems: graph theory in DSP, introduction on filters	Ch. 6.6, 12.2-12.4
7	Introduction on filters	Ch. 6.5-6.9
MID-TEST EXAM		
8	Z Transform	Ch. 4.10-4.11
9	Transfer function, pole zero-plot	Ch. 6.14, 7.6
10	MA filters, ARMA filters, Filters specifications & design	Ch. 6.7, 6.9-6.10, 7.1
11	Systems Identification	Ch. 6.12, 6.13
12	DSP applications: DSP Processors, Modems	Ch. 17, 18
13	Speech applications: speech productions, LPC Speech synthesis, speech perception	Ch. 11.3, 19.1, 11.4
14	Speech compression, DPCM, DM, ADPCM	Ch. 19.6, 19.8
FINAL EXAMS		

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) : Irwan Prasetya Gunawan
Jabatan (*Position*) : Dosen
Tanggal (*Date*) : 29/08/2012

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito
Jabatan (*Position*) : Ketua Program Studi
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* TIF303	**Nama Mata Kuliah** *(Course Name)* **:** Arsitektur dan Organisasi Komputer/Computer Architecture and Organization		
Program Studi *(Study Program)* **:** Teknik Informatika	**Fakultas** *(Faculty)* **:** FTIK		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** Digital System	**Kredit** *(Credit)* **:** [3 SKS]		
	Kuliah *(Lecture)* **:** [3 SKS]	**Tutorial :** [0]	**Praktikum** *(Practicum)***:** [0]
Revisi *(Revision Status)***:** R-1	**Semester Ganjil/~~Genap~~*** *(Odd/~~Even~~ Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: Benfano Soewito, Ph.D.			

COURSE DESCRIPTION

This course provides a complete and straightforward coverage of the structure and function of computers. Its purpose is to present, as clearly and completely as possible, the nature and characteristics of modern-day computer systems. The basic knowledge to understand the hardware operation of digital computers will be introduced as follows: (a) introduction to various digital components used in the organization and design digital computers. (b) Show the detailed steps that a designer must go through in order to design an elementary basic computer. (c) Deal with the organization and architecture of central processing unit.

COURSE OBJECTIVES

Upon completion of the course the student should be able to:

- Understand the basic concepts of digital components used in the organization and design digital computers
- Understand the detailed steps that a designer must go through in order to design an elementary basic computer
- Understand the organization and architecture of central processing unit.
- Understand the organization and architecture of input-output memory.

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

ASSESSMENT

Mid test	30%
Final test	40%
Others	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

[1] *Computer Organization and Architecture*, Ninth Edition. William Stallings 2013. Pearson Education.

[2] *Computer System Architecture,* Third Edition. M. Morris Mano. Pearson Education.

COURSE OUTLINE

This section should show topics, sub-topics, specific method of instruction/ delivery and material references.

Session	Topic & Sub-topics	Methods of delivery	Material references
1	Introduction and Computer Evolution	See BIG	[1] Chap 1 [1] Chap 2
2	Digital Logic	See BIG	[1] Chap 11
3	A Top level view of computer	See BIG	[2] Chap 3
4	Cache Memory	See BIG	[1] Chap 9 [2] Chap 4
5	Internal Memory	See BIG	[1] Chap 5
6	External Memory	See BIG	[1] Chap 6
7	Input - output	See BIG	[1] Chap 5 [1] Chap 7
MIDDLE SEMESTER TEST			
8	Number System and ALU Computer Arithmetic	See BIG	[1] Chap 9 and 10
9	Multiplication and Division and Characteristic Instruction	See BIG	[1] Chap 10 and 12
10	Processor Structure and Function Part 1	See BIG	[1] Chap 14
11	Processor Structure and Function Part 2	See BIG	[1] Chap 14
12	Reduced Instruction Set Computers	See BIG	[2] Chap 15
13	Parallel Processing	See BIG	[1] Chap 17
14	Multicore Computers	See BIG	[1] Chap 18
FINAL SEMESTER TEST			

Dipersiapkan oleh (*Prepared by*) :

Nama (*Name*) : Benfano Soewito, Ph.D.
Jabatan (*Position*) : Kaprodi
Tanggal (*Date*) : 6 Agustus 2012

Disahkan oleh (*Certified by*) :

Nama (*Name*) : Benfano Soewito
Jabatan (*Position*) : Kaprodi
Tanggal (*Date*) : 6 Agustus 2012

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* [FTK301]	**Nama Mata Kuliah** *(Course Name)* **:** [E-Business dan Pemrograman Berbasis Web / E-Business and Web-based Programming]		
Program Studi *(Study Program)* **:** [Sistem Informasi]	**Fakultas** *(Faculty)* **:** [Fakultas Teknik dan Ilmu Komputer]		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** [FTK101- Algoritma dan Pemrograman / Algorithm and Programming]	**Kredit** *(Credit)* **:** [3]		
	Kuliah *(Lecture)* **:** [2]	**Tutorial :**	**Praktikum** *(Practicum)***:** [1]
Revisi *(Revision Status)***:** [R-0]	**Semester Ganjil/~~Genap~~*** *(Odd/~~Even Semester~~*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: [Guson Prasamuarso Kuntarto] [Yusuf Lestanto]			

COURSE DESCRIPTION

This course aims to equip the students with knowledge and skills on how to design and program design e-Business or e-Commerce and program web-based application and introducing their practical implementation onto web-based programming tools such as PHP, xHTML and XML.

COURSE OBJECTIVES

By the end of the course, the students should be able to: 1. Explain an understanding the driving forces behind E-commerce–technology change, business development, and social issues. 2. Apply: Demonstrate a competency of implementing the PHP, xHTML and XML to the students' web application projects. 3. Analyze: Demonstrate a competency to analyze and attribute the students' perspective of what suitable tools to use to their own projects. 4. Evaluate: Demonstrate a competency in evaluating the students' own e-business web-application project against particular criteria. 5. Create: Demonstrate a competency to create an application based on the students' competencies of understanding, applying, analyzing and evaluating e-business, PHP, xHTML and XML.

METHODS OF INSTRUCTIONS

The teaching method used is student centered learning. By implementing this method, the students are engaged to solve the given problems or questions in a small group discussion. Moreover, lab tasks must be performed by students individually to accomplish this course. The student can also retrieve the lecture notes through on-line course management system.

ATTENDANCE REQUIREMENT

In compliance with academic rules.

ASSESSMENT

Lab-Assignments: Quiz, questions or problems that are given in a small group discussion must be completed in the class. **Lab exercises must be completed in the class**.
Mid-Test is conducted in written tests to evaluate the students' level of knowledge and skills on this course.
Final-Test is conducted in written tests to evaluate the students' level of knowledge and skills on this course.
Project is conducted by students as a group project. Students must submit a web-based application, a paper and conduct a group presentation to explain the overall project.
Summary of the grading:

Lab Assignment	10%
Mid-test	20%
Final-test	30%
Project	40%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Main references:

[1] Peacock, M. (2010). *PHP 5 e-commerce Development.* Mumbai: Packt

Additional books:

[2] Castro, E., & Hyslop, B. (2012). *HTML5 and CSS3, Seventh Edition: Visual QuickStart Guide.* Berkeley: Peachpit Press.
[3] Cristian Darie, E. B. (2006). *Beginning PHP and PostgreSQL E-Commerce: From Novice to Professional.* New York: Apress.
[4] Gilmore, W. J. (2006). *Beginning PHP and MySQL 5 from Novice to Professional .* Apress.
[5] Harvey M. Deitel, P. J. (2001). *Internet & World Wide Web How to Program: Second Edition.* Deitel.
[6] Helic, D. (2012). *Server-side Technologies.* Quoted 07th 23, 2012, from Multimediale Informationssysteme: http://coronet.iicm.edu/lectures/mmis/
[7] Laudon, K., & Traver, C. G. (2011). *E-Commerce.* Prentice Hall.
[8] Tosa, F. C., Darie, C., Bucica, M., & Bogdan, B. (2006). *AJAX and PHP: Building Responsive Web Application.* Birmingham: Packt Publishing.
[9] Kuntarto, G.(2012).Practicum Module:E-Business & Web-Besed Programming

COURSE OUTLINE LECTURE

Session	Topic & Sub-topics	Methods of delivery	Material references
1	**Topic:** Internet Technology, e-Business and e-Commerce **Specific sub-topics:** 1. Internet Technology 2. e-Business VS e-Commerce 3. e-Business Model 4. Building e-Business 5. Overview of e-Commerce 6. Principles of e-Commerce 7. Type of Online Payments	Direct Instruction and Group Discussion	[3] Chapter 1, [1] Chapter 1, [5] Chapter 32, [7] Chapter 1 & 2
2	**Topic:** Comparing the web the Technology: Server-side VS client-side **Specific sub-topics:** 1. Client-side technology 2. Server-side Technology 3. Component of Server & Client side 4. Databases	Direct Instruction and Group Discussion	[5] Chapter 21 & 22 [6] Chapter 1
3	**Topic:** Web Client-side Programming languages Part 1 **Specific sub-topics:** 1. HTML, 2. xHTML, 3. HTML5	Direct Instruction and Group Discussion	[2] Chapter 1-6, 11, 16, 17, 20, and 21 [5] Chapter 4-5
4	**Topic:** Web Client-side Programming languages Part 2 **Specific sub-topics:** 1. CSS 2. CSS3	Direct Instruction and Group Discussion	[2] Chapter 7-10, 14, 20, and 21 [5] Chapter 6
5	**Topic:** Web Client-side Programming languages Part 3 **Specific sub-topics:** 1. JavaScript 2. AJAX 3. XML	Direct Instruction and Group Discussion	[5] Chapter 7-10, 20 [8] Chapter 2 & 3

Session	Topic & Sub-topics	Methods of delivery	Material references
6	**Topic:** Web Server-side Programming languages (PHP) Part 1 **Specific sub-topics:** 1. PHP basic syntax 2. Types 3. Variables 4. Constant 5. Expression 6. Operators 7. Conditional Structures 8. Global Function	Direct Instruction and Group Discussion	[4] Chapter 1 - 4
7	**Topic:** Web Server-side Programming languages (PHP) Part 2 **Specific sub-topics:** 1. Database Function 2. String Manipulation 3. Array 4. Session 5. File Handling 6. Authentication	Direct Instruction and Group Discussion	[4] Chapter 4-6, and Chapter 11-14
MIDDLE SEMESTER TEST			
8	**Topic:** Advanced Web Server-side Programming languages (Object Oriented Programming/ OOP on PHP) **Specific sub-topics:** 1. The Benefits and Keys of OOP 2. Constructors and Destructors 3. Static Class Members 4. Helper Functions 5. Autoloading Objects 6. Advanced OOP Features Not Supported by PHP 7. Object Cloning 8. Inheritance 9. Interfaces 10. Abstract Classes	Direct Instruction and Group Discussion	[4] Chapter 6-7

Session	Topic & Sub-topics	Methods of delivery	Material references
9	**Topic:** Planning Framework MVC **Specific sub-topics:** 1. Background in designing own Framework & examples 2. Designing Framework 3. Patterns Model-view-Controller (MVC)	Direct Instruction and Group Discussion	[1] Chapter 1-2
10	**Topic:** Putting a web-based application for e-commerce Part 1 **Specific sub-topics:** 1. Product and categories 2. Product variations and user uploads 3. Enhancing user experiences 4. The Shopping Basket	Direct Instruction and Group Discussion	[1] Chapter 3-6
11	**Topic:** Putting a web-based application for e-commerce Part 2 **Specific sub-topics:** 1. Checkout 2. Authentication 3. Confirmation 4. Taking payment for orders 5. User Account Features 6. Administration	Direct Instruction and Group Discussion	[1] Chapter 7-9
12	**Topic:** Putting a web-based application for e-commerce Part 3 **Specific sub-topics:** 1. Checkout 2. Authentication 3. Confirmation 4. Taking payment for orders 5. User Account Features 6. Administration	Direct Instruction and Group Discussion	[1] Chapter 10-13
13	**Topic:** Putting a web-based application for e-commerce Part 4 **Specific sub-topics:** 1. Deploying 2. Security & Maintenance 3. Marketing 4. Search Engine Optimization 5. Customer retention	Direct Instruction and Group Discussion	[1] Chapter 14-15

SYLLABUS

Session	Topic & Sub-topics	Methods of delivery	Material references
14	**Topic:** Project Presentation and submission **Specific sub-topics:** Group presentation	Group Presentation, Question and Answer	-
FINAL SEMESTER TEST			

Dipersiapkan oleh *(Prepared by* **)**:
Nama (*Name*) : Guson
Jabatan (*Position*) : Dosen Prodi SI
Tanggal (*Date*) : 01-08-2012

Disahkan oleh *(Certified by)* :
Nama (*Name*) :
Jabatan (*Position*) : [Ketua Program Studi]
Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :
Nama (*Name*) :
Jabatan (*Position*) : [Ketua Program Studi]
Tanggal (*Date*) :

COURSE OUTLINE PRACTICUM

Session	Topic & Sub-topics	Methods of delivery	Material references
1	NO LAB ACTIVITY		
2	NO LAB ACTIVITY		
3	**Topic:** Creating Web Client-side Programming languages Part 1 **Specific sub-topics:** 1. Setup XAMPP 2. HTML, xHTML, 3. HTML5	Individualized Instruction: Coding & Exercise	[2] Chapter 1-6, 11, 16, 17, 20, and 21 [5] Chapter 4-5 [9] Chapter 1
4	**Topic:** Creating Web Client-side Programming languages Part 2 **Specific sub-topics:** 1. CSS 2. CSS3	Individualized Instruction: Coding & Exercise	[2] Chapter 7-10, 14, 20, and 21 [5] Chapter 6 [9] Chapter 2
5	**Topic:** Creating Web Client-side Programming languages Part 3 **Specific sub-topics:** 1. JavaScript 2. AJAX 3. XML	Individualized Instruction: Coding & Exercise	[5] Chapter 7-10, 20 [8] Chapter 2 & 3 [9] Chapter 3
6	**Topic:** Creating Web Server-side Programming languages (PHP) Part 1 **Specific sub-topics:** 1. PHP basic syntax 2. Types and Variables 3. Operators and Constant 4. Expression 5. Conditional Structures 6. Global Function	Individualized Instruction: Coding & Exercise	[4] Chapter 1 – 4 [9] Chapter 4
7	**Topic:** Creating Web Server-side Programming languages (PHP) Part 2 **Specific sub-topics:** 1. Database Function and Array 2. String Manipulation 3. Session 4. File Handling 5. Authentication	Individualized Instruction: Coding & Exercise	[4] Chapter 4-6, and Chapter 11-14 [9] Chapter 5
MIDDLE SEMESTER TEST			

SYLLABUS

Session	Topic & Sub-topics	Methods of delivery	Material references
8	**Topic:** Creating an Advanced Web Server-side Programming languages (Object Oriented Programming/ OOP on PHP) **Specific sub-topics:** 1. The Benefits and Keys of OOP 2. Constructors and Destructors 3. Static Class Members 4. Helper Functions 5. Autoloading Objects 6. Advanced OOP Features Not Supported by PHP 7. Object Cloning 8. Inheritance 9. Interfaces 10. Abstract Classes	Individualized Instruction: Coding & Exercise	[4] Chapter 6-7 [9] Chapter 6
9	**Topic:** Creating web-based application using Framework MVC **Specific sub-topics:** 1. Background in designing own Framework & examples 2. Designing Framework 3. Patterns Model-view-Controller (MVC)	Individualized Instruction: Coding & Exercise	[1] Chapter 1-2 [9] Chapter 7
10	**Topic:** Creating a web-based application for e-commerce Part 1 **Specific sub-topics:** 1. Product and categories 2. Product variations and user uploads 3. Enhancing user experiences 4. The Shopping Basket	Individualized Instruction: Coding & Exercise	[1] Chapter 3-6 [9] Chapter 8

SYLLABUS

Session	Topic & Sub-topics	Methods of delivery	Material references
11	**Topic:** Creating a web-based application for e-commerce Part 2 **Specific sub-topics:** 1. Checkout 2. Authentication 3. Confirmation 4. Taking payment for orders 5. User Account Features 6. Administration	Individualized Instruction: Coding & Exercise	[1] Chapter 7-9 [9] Chapter 9
12	**Topic:** Creating a web-based application for e-commerce Part 3 **Specific sub-topics:** 1. Checkout 2. Authentication 3. Confirmation 4. Taking payment for orders 5. User Account Features 6. Administration	Individualized Instruction: Coding & Exercise	[1] Chapter 10-13 [9] Chapter 10
13	**Topic:** Creating a web-based application for e-commerce Part 4 **Specific sub-topics:** 1. Deploying 2. Security & Maintenance 3. Marketing 4. Search Engine Optimization 5. Customer retention	Individualized Instruction: Coding & Exercise	[1] Chapter 14-15 [9] Chapter 11
14	**Topic:** Project Presentation and submission **Specific sub-topics:** Group presentation	Group Presentation, Question and Answer	
FINAL SEMESTER TEST			

Dipersiapkan oleh *(Prepared by* **)**:
Nama (*Name*) : Guson
Jabatan (*Position*) : Dosen Prodi SI
Tanggal (*Date*) : 01-08-2012

Disahkan oleh *(Certified by)* :
Nama (*Name*) :
Jabatan (*Position*) : [Ketua Program Studi]
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* FTK302	**Nama Mata Kuliah** *(Course Name)* **:** Technopreneurship/ *Technopreneurship*		
Program Studi *(Study Program)* **:** Teknik Informatika/ *Information Engineering*	**Fakultas** *(Faculty)* **:** FTIK		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:**	**Kredit** *(Credit)* **:** 2		
	Kuliah *(Lecture)* **:** 2	**Tutorial** *(Tutorial)***:**	**Praktikum** *(Practicum)***:**
Revisi *(Revision Status)***:**	**Semester Genap** *Even Semester* **Tahun Akademik** *2012/2013*		
Lecturer's name: Boy Iskandar Pasaribu, S.Kom, G.D.B.S., M.I.S., M.I.T.			

COURSE DESCRIPTION

This course has an aim to equip students with the knowledge and skills on how to commercialize the information technology project into a business through the generation of business model and the development of business plan to attract potential investors.

COURSE OBJECTIVES

By the end of the course, the students should be able to:

1. **Remember & Understand:**
   a. Demonstrate an understanding of how to generate a business model.
   b. Demonstrate an understanding of how to make a business plan to attract potential investors.
2. **Apply:**
   Demonstrate a competency of implementing what the students know about business plan suitable to their own particular information technology project.
3. **Analyze:**
   Demonstrate a competency to analyze and attribute the students' perspective on to what to be put in the business plan and in what ways in an attractive but realistic business plan organization.
4. **Evaluate:**
   Demonstrate a competency to evaluate the students own information technology project against particular business model criteria.
5. **Create:**
   Demonstrate a competency to create a suitable and effective business plan to attract potential investors to invest on the students' information technology project.

METHODS OF INSTRUCTIONS

With the guidance through lecturing, facilitating and mentoring from the faculty, the students should go through the ***lecture-based*** and ***discussion-based*** learning in order to generate ***Business Model***, ***Business Plan*** and ***Group Presentation*** assignments.

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in class sessions is of prime importance for successful completion of this course. Students will be expected to attend for the class sessions on time and to remain in class until the end of the class sessions. Students should **attend at least 80%** of the scheduled classes in order to be able **to get a marking score on the Final Evaluation**.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Evaluation (Business Model Generation)	30%
Final Evaluation (Business Plan)	40%
Others (Group Discussions and Presentation)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

FTK302 (2012) *Technopreneurship Syllabus*, Universitas Bakrie, Jakarta.
[1] Osterwalder, A., Pigneur, Y (2010) *Business Model Generation*, Wiley, New Jersey.
[2] Abrams, R. (2010) *Successful Business Plan, Secrets & Strategies*, 5th Edition, The Planning Shop, Palo Alto-California.

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references
1	Topic: Introduction to Technopreneurship Course. Specific sub-topics: 1. Sylabus Introduction. 2. Business Model Generation Introduction. 3. 7 Faces of Business Model Innovation.	Lecture and Discussion	FTK302 (2012) [1] pp. 4-7
2	Topic: BMG Canvas. Specific sub-topics: 1. BMG Canvas Introduction. 2. Business Model Definition. 3. The 9 Building Blocks. 4. Business Model Canvas.	Lecture and Discussion	[1] pp. 14-45
3	Topic: BMG Patterns. Specific sub-topics:		

Session	Topic & Sub-topics	Methods of delivery	Material references
	1. Unbundling Business Models. 2. The Long Tail. 3. Multi-sided Platforms. 4. FREE as a Business Model. 5. Open Business Models.	Lecture and Discussion	[1] pp. 56-119
4	Topic: BMG Design. Specific sub-topics: 1. Customer Insights. 2. Ideation. 3. Visual Thinking. 4. Storytelling. 5. Scenarios.	Lecture and Discussion	[1] pp. 126-191
5	Topic: BMG Strategy. Specific sub-topics: 1. Business Model Environment. 2. Evaluating Business Models. 3. Business Model Perspective on Blue Ocean Strategy. 4. Managing Multiple Business Models.	Lecture and Discussion	[1] pp. 200-239
6	Topic: BMG Process. Specific sub-topics: 1. Business Model Design and Innovation. 2. Design Attitude. 3. 5 Phases of Design.	Lecture and Discussion	[1] pp. 245-261
7	Topic: BMG Outlook and Review. Specific sub-topics: 1. Third-party Funded Model. 2. Triple Bottom Line Business Models.	Lecture and Discussion	[1] pp. 264-281

Session	Topic & Sub-topics	Methods of delivery	Material references
	3. Aligning IT with Business. 4. BMG Review.		
MIDDLE EVALUATION			
8	Topic: Starting Business Plan Process. Specific sub-topics: 1. The Successful Business. 2. Getting the Plan Started. 3. Making the Plan Compelling.	Lecture and Discussion	[2] pp. 3-49
9	Topic: Business Plan Components 1. Specific sub-topics: 1. The Executive Summary. 2. Company Description. 3. Industry Analysis and Trends. 4. Target Market. 5. The Competition.	Lecture and Discussion	[2] pp. 53-132
10	Topic: Business Plan Components 2. Specific sub-topics: 1. Strategic Position & Risk Assessment. 2. Marketing Plan & Sales Strategy. 3. Operations. 4. Technology Plan.	Lecture and Discussion	[2] pp. 133-214
11	Topic: Business Plan Components 3. Specific sub-topics: 1. Management & Organization. 2. Social Responsibility & Sustainability. 3. Development, Milestones & Exit Plan. 4. The Financials. 5. The Plan Appendix.	Lecture and Discussion	[2] pp. 215-313
12	Topic: Putting the Plan to Work 1.		

Session	Topic & Sub-topics	Methods of delivery	Material references
	Specific sub-topics: 1. Preparing the Plan. 2. Presenting the Plan. 3. Looking for Investors.	Lecture and Discussion	[2] pp. 317-342
13	Topic: Putting the Plan to Work 2. Specific sub-topics: 1. Using the Plan for Competitions. 2. Internal Planning for Existing Businesses and Corporations. 3. Time Saving Tips.	Lecture and Discussion	[2] pp. 343-370
14	Topic: Students Business Plans. Specific sub-topics: 1. Presentations. 2. Interactions.	Group Presentations and Interactions	
FINAL EVALUATION			

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) :Boy Pasaribu

Jabatan (*Position*) :
Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) :

Jabatan (*Position*) : [Ketua Program Studi]
Tanggal (*Date*) :

SYLLABUS

<table>
<tr><td>Kode Mata Kuliah (Course Code):
TIF301</td><td colspan="3">Nama Mata Kuliah (Course Name) :
Konsep dan Protokol Routingl / Routing Protocols and Concepts</td></tr>
<tr><td>Program Studi (Study Program) :
Teknik Informatika</td><td colspan="3">Fakultas (Faculty) :
Fakultas Teknik dan Ilmu Komputer</td></tr>
<tr><td rowspan="2">Mata Kuliah Pra-syarat (Course Prerequisite) :
LAN and Wireless</td><td colspan="3">Kredit (Credit) :
3</td></tr>
<tr><td>Kuliah
(Lecture) :
3</td><td>Tutorial :
--</td><td>Praktikum
(Practicum):
--</td></tr>
<tr><td>Revisi (Revision Status): R-01</td><td colspan="3">Semester Ganjil/Genap*(Odd/Even Semester*)
Tahun Akademik 2012/2013 (AY 2012/2013)</td></tr>
<tr><td colspan="4">Lecturer's name:
Irwan Prasetya Gunawan, Ph.D</td></tr>
</table>

COURSE DESCRIPTION

This course describes the architecture, components, and operation of routers, and explains the principles of routing and routing protocols. Students analyze, configure, verify, and troubleshoot the primary routing protocols RIPv1, RIPv2, EIGRP, and OSPF. By the end of this course, students will be able to recognize and correct common routing issues and problems. Each chapter walks the student through basic configuration, implementation, and troubleshooting principles. Additionally, Packet Tracer (PT) activities reinforce new concepts, and allow students to model and analyze routing processes that may be difficult to visualize or understand.

COURSE OBJECTIVES

Upon completion of the course the student should be able to:

- Describe the purpose, nature, and operations of a router
- Explain the critical role routers play in enabling communications across multiple networks
- Describe the purpose and nature of routing tables
- Describe how a router determines a path and switches packets
- Explain the route lookup process and determine the path packets will take in the network.
- Configure and verify basic router operation for a newly installed router
- Describe the purpose and procedure for configuring static routes
- Configure and verify static and default routing.
- Describe the role of dynamic routing protocols and place these protocols in the context of modern network design
- Describe how metrics are used by routing protocols and identify the metric types used by dynamic routing protocols
- Identify the characteristics of distance vector routing protocols
- Describe the network discovery process of distance vector routing protocols using Routing Information Protocol (RIP)
- Describe the functions, characteristics, and operations of the RIPv1 protocol
- Compare and contrast classful and classless IP addressing
- Describe classful and classless routing behaviors in routed networks
- Design and implement a classless IP addressing scheme for a given network

- Describe the main features and operations of the Enhanced Interior Gateway Routing Protocol (EIGRP)
- Use advanced configuration commands with routers implementing EIGRP and OSPF
- Describe the basis features and concepts of link-state routing protocols
- Describe the purpose, nature, and operations of the Open Shortest Path First (OSPF) Protocol
- Configure and verify basic RIPv1, RIPv2, single area OSPF, and EIGRP operations in a small routed network.
- Use router show and debug commands to troubleshoot common errors that occur in small routed networks.

METHODS OF INSTRUCTIONS

The course is delivered in a combination of class-based and practical-based. Practical would be done in several different modes including packet tracer network simulator, wireshark, and direct practice using routers and switches on laboratory environment.

Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

It is imperative that students take an active interest in the course. To succeed in this course, students must read, think, and write in an analytical manner and this takes time and practice. Such practice can only be achieved by working exercises. When troubles arise, and they will, the student must ask questions which may be directed to the instructor or other students in a variety of ways.

Students are also encouraged to work together on problem sets as part of their exercises. However, individual must ultimately demonstrate the understanding of the material by writing up his/her own solutions without the help of other students or their written work.

On average students need to spend, at least, 6 hours of study and preparation per week for this course.

ATTENDANCE REQUIREMENT

Comply with academic rules. Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session.

Absence from lectures shall not exceed 22%. Students who exceed the 22% limit without a medical or emergency excuse acceptable to and approved by the Dean of the Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Required materials:

1. CCNA Exploration Module 2, "Routing Protocols and Concepts", http://tif.bakrie.ac.id/?content=cnap

COURSE OUTLINE

Note: all materials are delivered by means of in-class lectures and class room discussions

Course Outline				
Sessio	**Ch.**	**Sub-Ch**	**Section**	**Topics**
1	**1.0**			**Introduction to Routing and Packet Forwarding**
		1.1		**Inside the Router**
			1.1.1	Routers are Computers
			1.1.2	Router CPU and Memory
			1.1.3	Internetwork Operating System
			1.1.4	Router Boot-Up Process
			1.1.4	Verifying Router Boot-up Process
			1.1.5	Router Interfaces
			1.1.6	Routers and the Network Layer
		1.2		**CLI Configuration and Addressing**
			1.2.1	Implementing Basic Addressing Schemes
			1.2.2	Basic Router Configuration
		1.3		**Building the Routing Table**
			1.3.1	Introducing the Routing Table
			1.3.2	Directly Connected Routes
			1.3.3	Static Routing
			1.3.4	Dynamic Routing
			1.3.5	Routing Table Principles
		1.4		**Path determination and Switching Functions**
			1.4.1	Packet Fields and Frame Fields
			1.4.2	Best Path and Metric
			1.4.3	Equal Cost Load Balancing
			1.4.4	Path Determination
			1.4.5	Switching Functions
		1.5		**Router Configuration Labs**

Course Outline				
			1.5.1	Cabling a Network and Basic Router Configuration
			1.5.2	Basic Router Configuration
			1.5.3	Challenge Router Configuration
		1.6	1.6.1	Summary and Review
		1.7	1.7.1	Chapter Quiz
	2.0		2.0.1	Chapter Introduction
2		2.1		Routers and Network
			2.1.1	Role of the Router
			2.1.2	Introducing the Topology
			2.1.3	Examining the Connections of the Router
		2.2		**Router Configuration Review**
			2.2.1	Examining Router Interfaces
			2.2.2	Configuring an Ethernet interface
			2.2.3	Verifying Ethernet interface
			2.2.4	Configuring a Serial interface
			2.2.5	Examining Router interfaces
		2.3		**Exploring Directly Connected Networks**
			2.3.1	Verifying Changes to the Routing Table
			2.3.2	Devices on Directly Connected Networks
			2.3.3	Cisco Discovery Protocol (CDP)
			2.3.4	Using CDP for Network Discovery
		2.4		**Static Routes with "Next Hop" Addresses**
			2.4.1	Purpose and Command Syntax of ip route
			2.4.2	Configuring Static Routes
			2.4.3	Routing Table Principles to Static Routes
			2.4.4	Resolving to an Exit Interface
		2.5		**Static Routes with Exit Interfaces**
			2.5.1	Configuring a Static Route with an Exit interface
			2.5.2	Modifying Static Routes
			2.5.3	Verifying the Static Route Configuration
			2.5.4	Static Routes with Ethernet Interfaces
		2.6		**Summary and Default Static Routes**
			2.6.1	Summary Static Routes

Course Outline				
			2.6.2	Default Static Route
		2.7		**Managing and Troubleshooting Static Routes**
			2.7.1	Static Routes and Packet Forwarding
			2.7.2	Troubleshooting a Missing Route
			2.7.3	Solving the Missing Route
		2.8		**Static Route Configuration Labs**
			2.8.1	Basic Static Route Configuration Lab
			2.8.2	Challenge Static Route Configuration
			2.8.3	Troubleshooting Static Routes
		2.9	2.9.1	Summary and Review
		2.10	2.10.1	Chapter Quiz
	3.0		**3.0.1**	**Chapter Introduction**
		3.1		**Introduction and Advantages**
			3.1.1	Perspective and background
			3.1.2	Network discovery and routing table maintenance
			3.1.3	Advantages
		3.2		**Classifying Dynamic Routing Protocols**
			3.2.1	Overview
			3.2.2	IGP and EGP
			3.2.3	Distance Vector and Link State
			3.2.4	Classful and Classless
			3.2.5	Convergence
		3.3		**Metrics**
			3.3.1	Purpose of a metric
			3.3.2	Metrics and Routing Protocols
			3.3.3	Load Balancing
		3.4		**Administrative Distances**
			3.4.1	Purpose of Administrative Distance
			3.4.2	Dynamic Routing Protocols
			3.4.3	Static Routes
			3.4.4	Directly connected networks
		3.5		**Routing Protocols and Subnetting Activities**
			3.5.1	Identifying Elements of the Routing Table
			3.5.2	Subnetting Scenario 1

Course Outline				
			3.5.3	Subnetting Scenario 2 (
			3.5.4	Subnetting Scenario 3
		3.6	3.6.1	Summary and Review
		3.7	3.7.1	Chapter Quiz
	4.0		**4.0.1**	**Chapter Introduction**
		4.1		**Introduction to Distance Vector Routing Protocols**
			4.1.1	Distance Vector Routing Protocols
			4.1.2	Distance Vector Technology
			4.1.3	Routing Protocol Algorithms
			4.1.4	Routing Protocol Characteristics
		4.2		**Network Discovery**
			4.2.1	Cold Start
			4.2.2	Initial Exchange of Routing Information
			4.2.3	Exchange of Routing Information
			4.2.4	Convergence
		4.3		**Routing Table Maintenance**
			4.3.1	Periodic Updates: RIPv1 and IGRP
			4.3.2	Bounded Updates: EIGRP
			4.3.3	Triggered Updates
			4.3.4	Random Jitter
		4.4		**Routing Loops**
			4.4.1	Definition and Implications
			4.4.2	Problem: Count to Infinity
			4.4.3	Setting a maximum
			4.4.4	Preventing Routing Loops with Holddown timers
			4.4.5	Split Horizon Rule
			4.4.6	Split Horizon with Poison Reverse or Route Poisoning
			4.4.7	IP and TTL
		4.5		**Distance Vector Routing Protocols today**
			4.5.1	RIP and EIGRP
		4.6	4.6.1	Lab Activities
		4.7	4.7.1	Summary and Review
		4.8	4.8.1	Chapter Quiz

Course Outline				
	5.0			**Routing Information Protocol**
			5.0.1	Chapter Introduction
		5.1		**RIPv1: Distance Vector, Classful Routing Protocol**
			5.1.1	Background and Perspective
			5.1.2	RIP Characteristics and Message Format
			5.1.3	RIP Operation
			5.1.4	Administrative Distance
		5.2		**Basic RIPv1 Configuration**
			5.2.1	Basic RIPv1 Configuration
			5.2.2	Enabling RIP: router rip command
			5.2.3	Specifying Networks
		5.3		**Verification and Troubleshooting**
			5.3.1	Verifying RIP: show ip route
			5.3.2	Verifying RIP: show ip protocols
			5.3.3	Verifying RIP: debug ip rip
			5.3.4	Passive Interfaces
		5.4		**Automatic Summarization**
			5.4.1	Modified Topology: Scenario B
			5.4.2	Boundary Routers and Automatic Summarization
			5.4.3	Processing RIP Updates
			5.4.4	Sending RIP Updates
			5.4.5	Advantages and Disadvantages of Automatic Summarization
		5.5		**Default Route and RIPv1**
			5.5.1	Modified Topology: Scenario C
			5.5.2	Propagating the Default Route in RIPv1
		5.6		**RIPv1 Configuration Labs**
			5.6.1	Basic RIP Configuration
			5.6.2	Challenge RIP Configuration
			5.6.3	RIP Troubleshooting
		5.7	5.7.1	Summary and Review
		5.8	5.8.1	Chapter Quiz
	6.0		6.0.1	**Chapter Introduction**

Course Outline				
		6.1		**Classful and Classless Addressing**
			6.1.1	Classful IP Addressing
			6.1.2	Classful Routing Protocol
			6.1.3	Classless IP Addressing
			6.1.4	Classless Routing Protocols
		6.2		**VLSM**
			6.2.1	VLSM in action
			6.2.2	VLSM and IP Addresses
		6.3		**CIDR**
			6.3.1	Route Summarization
			6.3.2	Calculating Route Summarization
		6.4		**VLSM and Route Summarization Activity**
			6.4.1	Basic VLSM Calculation and Addressing Design Activity
			6.4.2	Challenge VLSM Calculation and Addressing Design Activity
			6.4.3	Troubleshooting a VLSM Addressing Design Activity
			6.4.4	Basic Route Summarization Activity
			6.4.5	Challenge Route Summarization Activity
			6.4.6	Troubleshooting Route Summarization Activity
		6.5	6.5.1	Summary and Review
		6.6	6.6.1	Chapter Quiz
	7.0		7.0.1	**Chapter Introduction**
		7.1		**RIPv1 Limitations**
			7.1.1	Lab Topology
			7.1.2	RIPv1 Topology Limitations
			7.1.3	RIPv1: Discontiguous Networks
			7.1.4	RIPv1: No VLSM Support
			7.1.5	RIPv1: No CIDR Support
		7.2		**Configuring RIPv2**
			7.2.1	Enabling and Verifying RIPv2
			7.2.2	Auto-summary and RIPv2
			7.2.3	Disabling Auto-Summary in RIPv2
			7.2.4	Verifying RIPv2 Updates
		7.3		**VLSM and CIDR**
			7.3.1	RIPv2 and VLSM
			7.3.2	RIPv2 and CIDR

Course Outline				
		7.4		**Verifying and Troubleshooting RIPv2**
			7.4.1	Verification and Troubleshooting commands
			7.4.2	Common RIPv2 issues
			7.4.3	Authentication
		7.5		**RIPv2 Configuration Labs**
			7.5.1	Basic RIPv2 Configuration
			7.5.2	Challenge RIPv2 Configuration
			7.5.3	RIPv2 Troubleshooting
		7.6	7.6.1	Summary and Review
		7.7	7.7.1	Chapter Quiz
	8.0		**8.0.1**	**Chapter Introduction**
		8.1		**The Routing Table Structure**
			8.1.1	Lab Topology
			8.1.2	Routing Table Entries
			8.1.3	Level 1 Routes
			8.1.4	Parent and Child Routes: Classful Networks
			8.1.5	Parent and Child Routes: Classless Networks
		8.2		**Routing Table Lookup Process**
			8.2.1	Steps in the Route Lookup Process
			8.2.2	Longest Match: Level 1 Network Routes
			8.2.3	Longest Match: Level 1 Parent and Level 2 Child Routes
		8.3		**Routing Behavior**
			8.3.1	Classful and Classless Routing Behavior
			8.3.2	Classful Routing Behavior: no ip classless
			8.3.3	Classful Routing Behavior – Search Process
			8.3.4	Classless Routing Behavior: ip classless
			8.3.5	Classless Routing Behavior – Search Process
		8.4		**Routing Table Labs**
			8.4.1	Investigating the Routing Table Lookup Process
			8.4.2	The show ip route Challenge Lab
		8.5	8.5.1	Summary and Review
		8.6	8.6.1	Chapter Quiz
	9.0		9.0.1	**Chapter Introduction**
		9.1		**Introduction to EIGRP**

Course Outline				
			9.1.1	EIGRP: An Enhanced Distance Vector Routing Protocol
			9.1.2	EIGRP Message Format
			9.1.3	Protocol Dependent Modules (PDM)
			9.1.4	RTP (Reliable Transport Protocol) and EIGRP Packet Types
			9.1.5	Hello Protocol
			9.1.6	EIGRP Bounded Updates
			9.1.7	DUAL: An Introduction
			9.1.8	Administrative Distance
			9.1.9	Authentication
		9.2		**Basic EIGRP configuration**
			9.2.1	EIGRP Network Topology
			9.2.2	Autonomous System and Process IDs
			9.2.3	The router eigrp command
			9.2.4	The network Command
			9.2.5	Verifying EIGRP
			9.2.6	Examining the Routing Table
		9.3		**EIGRP Metric Calculation**
			9.3.1	EIGRP Composite Metric and the K Values
			9.3.2	EIGRP Metrics
			9.3.3	Using the Bandwidth Command
			9.3.4	Calculating the EIGRP Metric
		9.4		**DUAL**
			9.4.1	DUAL concepts
			9.4.2	Successor and Feasibile Distance
			9.4.3	Feasible Successor, Feasible Condition and Reported Distance
			9.4.4	Topology Table: Successor and Feasible Successor
			9.4.5	Topology Table: No Feasible Successor
			9.4.6	Finite State Machine
		9.5		**More EIGRP Configuration**
			9.5.1	The Null0 Summary Route
			9.5.2	Disabling Automatic Summarization
			9.5.3	Manual Summarization
			9.5.4	EIGRP Default Route
			9.5.5	Fine Tuning EIGRP
		9.6		**EIGRP Configuration Labs**
			9.6.1	Basic EIGRP Configuration Lab
			9.6.2	Challenge EIGRP Configuration Lab

Course Outline				
			9.6.3	Troubleshooting EIGRP Configuration Lab
		9.7	9.7.1	Summary and Review
		9.8	9.8.1	Chapter Quiz
	10.0		10.0.1	**Chapter Introduction**
		10.1		**Link-State Routing**
			10.1.1	Link State Routing Protocols
			10.1.2	Introduction to the SPF Algorithm
			10.1.3	Link State Routing Process
			10.1.4	Learning about Directly Connected Routes
			10.1.5	Sending Hello Packets to Neighbors
			10.1.6	Building the Link-State Packet
			10.1.7	Flooding Link-State Packets to Neighbors
			10.1.8	Constructing a Link-State Database
			10.1.9	Shortest Path First (SPF) Tree
		10.2		**Implementing Link-State Routing Protocols**
			10.2.1	Advantages of a Link-State Routing Protocol
			10.2.2	Requirements of a Link-State Routing Protocol
		10.3	10.3.1	**Summary and Review**
		10.4	10.4.1	Chapter Quiz
	11.0		11.0.1	**Chapter Introduction**
		11.1		**Introduction to OSPF**
			11.1.1	Background of OSPF
			11.1.2	OSPF Message Encapsulation
			11.1.3	OSPF Packet Types
			11.1.4	Hello Protocol
			11.1.5	OSPF Link-State Updates
			11.1.6	OSPF Algorithm
			11.1.7	Administrative Distance
			11.1.8	Authentication
		11.2		**Basic OSPF Configuration**
			11.2.1	Lab Topology
			11.2.2	router ospf process-id command
			11.2.3	The network command
			11.2.4	OSPF Router ID

Course Outline				
			11.2.5	Verifying OSPF
			11.2.6	Examining the Routing Table
		11.3		**The OSPF Metric**
			11.3.1	OSPF Metric
			11.3.2	Modifying the Cost of the Link
		11.4		**OSPF and Multi-access Networks**
			11.4.1	Challenges in Multiaccess Networks
			11.4.2	DR/BDR Election Process
			11.4.3	OSPF Interface Priority
		11.5		**More OSPF Configuration**
			11.5.1	Redistributing an OSPF Default Route
			11.5.2	Fine-Tuning OSPF
		11.6		**OSPF Configuration Labs**
			11.6.1	Basic OSPF Configuration Lab
			11.6.2	Challenge OSPF Configuration Lab
			11.6.3	Troubleshooting OSPF Configuration Lab
		11.7	11.7.1	**Chapter Summary**
		11.8	11.8.1	Chapter Quiz

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) : Irwan Prasetya Gunawan
Jabatan (*Position*) : Dosen
Tanggal (*Date*) : 29/08/2012

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito
Jabatan (*Position*) : Ketua Program Studi
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* TIF302	**Nama Mata Kuliah** *(Course Name)* **:** Pengantar Intelejensi Artifisial/Introducing to Artificial Inteligence		
Program Studi *(Study Program)* **:** Teknik Informasi	**Fakultas** *(Faculty)* **:** FTIK		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** Algoritma dan Pemograman	**Kredit** *(Credit)* **:** [3 SKS]		
	Kuliah *(Lecture)* **:** [3 SKS]	**Tutorial :** [0]	**Praktikum** *(Practicum)***:** [0]
Revisi *(Revision Status)***:** [R-1~~/2/3/4/5/...~~]	**Semester Ganjil/~~Genap~~*** *(Odd/~~Even~~ Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: [Manik Hapsara, Ph.D.]			

COURSE DESCRIPTION

This course is aimed at giving students knowledge and sound understanding of Artificial Intelligence. This course covers theories of intelligent agents, problem solving by searching, reasoning and planning, learning, natural language, and robotics. It also gives students a hands-on experience of working with robots to implement simple intelligent algorithms.

COURSE OBJECTIVES

By the end of this course, students should be able to:

1. Understand the concept of Artificial Intelligence;
2. Understand the concept of Intelligent Agents and Agent-based Systems;
3. Understand the concept of Searching;
4. Understand the concept of Knowledge, Reasoning, and Planning;
5. Understand the concept of Learning;
6. Learn the theory of Natural Language;
7. Understand the concept of Robotics;
8. Understand the architecture of simple robots;
9. Understand how simple robots work;
10. Understand how to embed intelligence onto a simple robot;
11. Apply software engineering approach in robot-programming;
12. Apply Artificial Intelligence onto a simple robot;
13. Implement an artificially intelligent Robot;
14. Organize activities necessary to develop an artificially intelligent Robot based on a proper methodology.

METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and computer lab exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

***Students coming 15 minutes after the class begins are not allowed to signing the class' attendance list. Students coming 30 minutes after the class begins are not allowed to enter the class.**

ASSESSMENT

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged. Lab exercises to be completed in the class or as homework.

Class Review Questions. These include short answers to provide feedback for the students understanding topic by topic.

Lab Exercises. These include the use of Robot Modules to provide feedback on the students' practical competency, and group consultancy on the assigned project.

Mid-Test and Project-based Assessment. This course is a project-based which means students will be obliged to conduct a project. The project will provide most part of the students' grade. The mid-test will be used to evaluate student understanding of the materials given in the classes.

Summary of the grading :

Final test	30%
Mid-test	25%
Class assignments and Quizzes	10%
Project Assignment	25%
Forum Activity	10%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Main book:

Stuart Russell, Peter Norvig; *Artificial Intelligence, A modern approach*; 3rd eds; International Edition; Pearson USA (2010)

Complimentary books:

Michael J. Wooldridge; *An Introduction to Multi-Agent Systems*; 2nd eds; John Wiley & Sons; U.K. (2009)

COURSE OUTLINE

This section should show topics, sub-topics, specific method of instruction/ delivery and material references.

Session	Topic & Sub-topics	Methods of delivery	Material references
1	Introduction to Artificial Intelligence	• Concept of AI • The foundation • The history	Chapter 1
2	Intelligent Agents	• Concept of agents • Concept of environments • Concept of agents' behavior • The nature of environments • The structure of an agent	Chapter 2
3	Robotics	• Introduction to robotics • Robot architecture • Hardware • Perception • Robotic project: Disassembling module Understanding module and components	Chapter 25
4	Robotics ctd.	• Movement planning • Software • Application • Robotic project: Understanding module and components	Chapter 25
5	Problem Solving	• Problem-solving agents • Searching for solutions • Uninformed search • Informed search • Heuristics	Chapter 3

Session	Topic & Sub-topics	Methods of delivery	Material references
		• Robotic project: Planning own robot	
6	Problem Solving ctd.	• Local search • Searching with non-deterministic actions • Searching with partial observations • Robotic project: Planning own robot	Chapter 4
7	Quiz Mid-Exam Preparation	N/A	Chapters 1, 2, 25, 3, 4
MIDDLE SEMESTER TEST			
8	Knowledge, Reasoning and Planning	• Knowledge-based agents • Logic and proportional logic • Proportional theorem proving • Robotic project: Reassembling own robot	Chapter 7
9	Knowledge, Reasoning and Planning ctd.	• Definition of classical planning • Planning graphs • Planning and acting • Robotic project: Assembly testing	Chapter 10
10	Learning	• Definition of learning • Learning methods • Learning tools and models • Robotic project: Embedding intelligence	Chapter 18

Session	Topic & Sub-topics	Methods of delivery	Material references
11	Learning ctd.	• Knowledge in learning • Explanation-based learning • Inductive logic programming • Statistical learning • Robotic project: Embedding intelligence	Chapter 19/20
12	Communicating, Perceiving and Acting	• Natural language • Text classification • Information retrieval and extraction • Concept of semantics • Speech recognition • Robotic project: Testing the robot	Chapter 22/23
13	Communicating, Perceiving and Acting ctd.	• Concept of perception • Object recognition • Vision • Robotic project: Testing the robot Assessment preparation	Chapter 24
14	Final-Exam Preparation Project Final Preparation	N/A	Chapters 7, 10, 18, 19/20, 22/23, 24
FINAL SEMESTER TEST			

Dipersiapkan oleh (*Prepared by*) :

Nama (*Name*) : Manik Hapsara, Ph.D.
Jabatan (*Position*) :

Tanggal (*Date*) :

Disahkan oleh (*Certified by*) :

Nama (*Name*) :
Jabatan (*Position*) : Benfano Soewito, M.Sc., Ph.D.

Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* TIF305	**Nama Mata Kuliah** *(Course Name)* **:** Pemodelan dan Simulasi Jaringan/Network Modelling and Simulation		
Program Studi *(Study Program)* **:** Teknik Informatika	**Fakultas** *(Faculty)* **:** FTIK		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** LAN and Wireless	**Kredit** *(Credit)* **:** [3 SKS]		
	Kuliah *(Lecture)* **:** [3 SKS]	**Tutorial :** [0]	**Praktikum** *(Practicum)***:** [0]
Revisi *(Revision Status)***:** [R-1~~/2/3/4/5/...~~]	**Semester Ganjil/~~Genap~~*** *(Odd/~~Even~~ Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: [Iwan Adhicandra.]			

COURSE DESCRIPTION

This special topics course is an introduction to discrete-event simulation for performance modeling of communication and computer systems. At the completion of this course, a student will be able to model a system and predict its performance.

COURSE OBJECTIVES

By the end of this course, students should be able to:

- Understand the basic principles of performance modeling.
- Be able to select and use appropriate performance metrics when modeling a system.
- Understand the basics of queuing theory including Little's Law and the M/M/1 queue.
- Know how to collect and characterize performance measurement data.
- Know how to generate workload using probability distributions and using a trace.
- Understand the basic concepts of a discrete event simulation model including model components, flowchart, and event list.
- Learn how to design and implement process-oriented simulation models. Know how to determine when a simulation program can be terminated using confidence intervals
- Know how to compare two designs using statistical hypothesis testing.
- Understand the modeling and analysis process from a project perspective and how to define experiments and present results.

METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and computer lab exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

ASSESSMENT

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged. Lab exercises to be completed in the class or as homework.

Class Review Questions. These include short answers (**S.A.**) and algorithm workbenches (**A.W.**) to provide feedback of the students' understanding topic by topic.

Mid-Test and Final-Test. These written tests will evaluate the students' level of knowledge and skills on this course.

Summary of the grading :

Final test	40%
Mid-test	30%
Lab Report / Assignment	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

[T1] Guizani, Mohsen, Ammar Rayes, Bilal Khan, and Ala Al-Fugaha (2010), *Network Modeling and Simulation: A Practical Perspective*, Wiley

COURSE OUTLINE

This section should show topics, sub-topics, specific method of instruction/ delivery and material references.

Session	Topic & Sub-topics	Methods of delivery	Material references
1	Basic Concepts and Techniques	Lab Session	**[T1],** Ch.1, p1-p24
2	Designing and Implementing a Discrete-Event Simulation Framework	Lab Session	**[T1],** Ch.2, p25-p44
3	A Case Study with the Discrete-Event Simulation Framework	Lab Session	**[T1],** Ch.3, p45-p68
4	Monte Carlo Simulation	Lab Session	**[T1],** Ch.4, p69-p96
5	Network Modeling	Lab Session	**[T1],** Ch.5, p97-p110

SYLLABUS

Session	Topic & Sub-topics	Methods of delivery	Material references
6	Designing and Implementing A Network Simulation Framework	Lab Session	**[T1],** Ch.6, p111-p155
7	Designing and Implementing A Network Simulation Framework	Review	**[T1],** Ch.6, p111-p115
MIDDLE SEMESTER TEST			
8	Statistical Distribution and Random Number Generation	Lab Session	**[T1],** Ch.7, p157-p180
9	Network Simulation Elements	Lab Session	**[T1],** Ch.8, p181-p195
10	Queuing Theory	Lab Session	**[T1],** Ch.9, p197-p233
11	Queuing Theory		**[T1],** Ch.9, p197-p233
12	Input Modeling and Output Analysis	Lab Session	**[T1],** Ch.10, p235-p256
13	Modeling Network Traffic	Review	**[T1],** Ch.11, p259-p270
14	Review	Review	Review
FINAL SEMESTER TEST			

Dipersiapkan oleh (*Prepared by*) :

Nama (*Name*) : Iwan Adhicandra
Jabatan (*Position*) :

Tanggal (*Date*) :

Disahkan oleh (*Certified by*) :

Nama (*Name*) :
Jabatan (*Position*) : Benfano Soewito, M.Sc., Ph.D.

Tanggal (*Date*) :

SYLLABUS

Kode Mata Kuliah *(Course Code)*: **TIF307**	**Nama Mata Kuliah** *(Course Name)* **:** **Komunikasi Nirkabel / Wireless Communication**		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** **TIF207**	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** 0	**Praktikum** *(Practicum)*: 0
Revisi *(Revision Status)*: R-1	**Semester ~~Ganjil~~/Genap*** *(~~Odd~~/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: • Iwan Adhicandra			

COURSE DESCRIPTION

This course guides the student to study wireless and mobile communications ranging from the introduction, challenges or problems encountered and the methods used to overcome interference. Topics covered include Path loss and multipath, channel capacity, digital modulation and detection review, Fading, Diversity, Coding, equalization, multicarrier, multi user, Spread Spectrum, and cellular systems.

COURSE OBJECTIVES

By the end of this course, students should be able to:

- Understand the topic of wireless communications and mobile communications, ranging from basic principles, methods to cope with communication disorders and development of wireless technology.

METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and computer lab exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

ASSESSMENT

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged. Lab exercises to be completed in the class or as homework.

Class Review Questions. These include short answers (S.A.) and algorithm workbenches (A.W.) to provide feedback of the students' understanding topic by topic.

Mid-Test and Final-Test. These written tests will evaluate the students' level of knowledge and skills on this course.

Summary of the grading :

Final test	40%
Mid-test	30%
Lab Report / Assignment	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Textbooks [T]:

[T1] Goldsmith, Andrea, Wireless Communication, Cambridge University Press, 2005
[T2] Proakis, John G., and Masoud Salehi, Fundamentals of Communication Systems, Prentice Hall, 2004
[T3] Rappaport, T., Wireless Communications: Principles and Practice, Prentice Hall, 2001
[T4] Stuber, G. L., Principles of Mobile Communication (2nd Edition), Springer, 2000

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
L-1	Overview of Wireless Communications		**[T1],** Ch.1	Lab Session
L-2	Path Loss and Shadowing:		**[T1],** Ch.2	Lab Session
L-3	Statistical Multipath Channel Models		**[T1],** Ch.3	Lab Session
L-4	Capacity of Wireless Channels		**[T1],** Ch.4	Lab Session
L-5	Digital Modulation and Detection		**[T1],** Ch.5	Lab Session
L-6	Performance of Digital Modulation over Wireless Channels		**[T1],** Ch.6	Lab Session
L-7	Diversity:		**[T1],** Ch.7	
	MID SEMESTER TEST			
L-8	Coding for Wireless Channels:		**[T1],** Ch.8	Lab Session
L-9	Adaptive Modulation and Coding:		**[T1],** Ch.9	Lab Session
L-10	Multiple Antennas and Space-		**[T1],** Ch.10	Lab Session

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	Time Communications:			
L-11	Equalization:		**[T1],** Ch.11	Lab Session
L-12	Multicarrier Modulation:		**[T1],** Ch.12	Lab Session
L-13	Spread Spectrum		**[T1],** Ch.13	
L-14	Multiuser Systems		**[T1],** Ch.14	
	FINAL SEMESTER TEST			

COMPUTER LAB (CL) SESSIONS

SESSION	TOPIC	Lab Assignment
CL-1	Introduction to Matlab	
CL-2	Fourier Analysis using Matlab	
CL-3	Functions in MATLAB	
CL-4	Analogue & Digital Modulation Techniques	
CL-5	Building a Simple Model	
CL-6	Building a Simple Model	
CL-7	Review	
MID SEMESTER TEST		
CL-8	Building a Channel Noise Model	
CL-9	Building the Hamming Code Model	
CL-10	Building the BPSK Model	
CL-11	Building the Cyclic Code Model	
CL-12	Building a Frequency-Shift Keying Model	
CL-13	Review	
CL-14	Review	
FINAL SEMESTER TEST		

Dipersiapkan oleh *(Prepared by* **)**:			**Disahkan oleh** *(Certified by)* :		
Nama (*Name*)	:	Iwan Adhicandra.	Nama (*Name*)	:	Benfano Soewito., Ph.D
Jabatan (*Position*)	:		Jabatan (*Position*)	:	Ketua Program Studi TIF
Tanggal (*Date*)	:		Tanggal (*Date*)	:	

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* TIF306	**Nama Mata Kuliah** *(Course Name)* **:** Jaringan Area Luas / Wide Area Network (WAN)		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Fakultas Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** TIF301 (Konsep dan Protokol Routing / *Routing Protocol & Concept*)	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** --	**Praktikum** *(Practicum)***:** --
Revisi *(Revision Status)***: R-01**	**Semester Ganjil/Genap*** *(Odd/Even Semester*)* **Tahun Akademik 2013/2014** *(AY* 2013/2014*)*		
Lecturer's name: Berkah I. Santoso, ST, MTI			

COURSE DESCRIPTION

This course explains the principles of traffic control and access control lists (ACLs) and provides an overview of the services and protocols at the data link layer for wide-area access. Describes user access technologies and devices and discovers how to implement and configure Point-to-Point Protocol (PPP), Point-to-Point Protocol over Ethernet (PPPoE), DSL and Frame Relay. WAN security concepts, tunneling and VPN basics are introduced. Discuss the special network services required by converged applications and an introduction to quality of service (QoS).Finally, the students learn how to detect, troubleshoot and correct common enterprise network implementation issues.

COURSE OBJECTIVES

The objectives of this course are as follows:

- Learn the fundamentals enterprise WANs, the technologies available to implement them and the technical terminology.
- Describe the impact of applications (Voice Over IP and Video Over IP) on a network.
- Implement basic switch security (port security, trunk access, management VLAN other than VLAN1, etc).
- Describe today's increasing network security threats and explain the need to implement a comprehensive security policy to mitigate the threats.
- Learn the serial point-to-point communications and the Point-to-Point Protocol (PPP).
- Learn the high-performance Frame Relay WAN protocol.
- Learn the importance of security to find a balance between the need to open networks and the need to protect business information, and learn the security threats and mitigation techniques.
- Learn how to create firewalls using standard and extended ACLs.
- Learn the broadband technologies from telecommuter's perspective, such as cable, DSL, wireless broadband and VPNs.
- Learn to identify teleworker requirements and IT architectures, and introduction to IPv6.
- Learn how to establish a network baseline and learn to develop network documentation to help in network troubleshooting.

Upon completion of the course the student should be able to:

1. Configure, verify, and troubleshoot DHCP and DNS operation on a router (CLI/SDM).
2. Configure and apply ACLs based on network filtering requirements (CLI/SDM).
3. Configure and apply an ACLs to limit telnet and SSH access to the router using (SDM/CLI).

4. Configure NAT for given network requirements using (CLI/SDM).
5. Configure and verify a basic WAN serial connection.
6. Configure and verify Frame Relay on Cisco routers.
7. Configure standard ACLs in a medium-size enterprise branch office network, including defining filtering criteria, configuring standard ACLs to filter traffic, and applying standard ACLs to router interfaces.
8. Configure extended ACLs in a medium-size enterprise branch office network, including configuring extended ACLs and named ACLs, configuring filters, verifying and monitoring ACLs, and troubleshooting extended ACL issues.
9. Configure an advanced Frame Relay PVC, including solving reachability issues, configuring sub-interfaces, and verifying and troubleshooting a Frame Relay configuration.
10. Identify security threats to enterprise networks Describe methods to mitigate security threats to enterprise networks Configure basic router security.
11. Configure a basic Frame Relay permanent virtual circuit (PVC), including configuring and troubleshooting Frame Relay on a router serial interface and configuring a static Frame Relay map.

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

It is imperative that students take an active interest in the course. To succeed in this course, students must read, think, and write in an analytical manner and this takes time and practice. Such practice can only be achieved by working exercises. When troubles arise, and they will, the student must ask questions which may be directed to the instructor or other students in a variety of ways.

Students are also encouraged to work together on problem sets as part of their exercises. However, individual must ultimately demonstrate the understanding of the material by writing up his/her own solutions without the help of other students or their written work.

On average students need to spend, at least, 9 hours of study and preparation per week for this course.

ATTENDANCE REQUIREMENT

Comply with academic rules. Absence from lectures shall not exceed 22%. Students who exceed the 22% limit without a medical or emergency excuse acceptable to and approved by the Dean of the Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

A. CCNA Exploration Module 4, "Accessing the WAN", http://tif.bakrie.ac.id/?content=cnap

COURSE OUTLINE

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
1	Introduction to WANs	1. Chapter Introduction	Lecture, Class room discussion	A.Ch.1
		2. Providing Integrated Services to the Enterprise		
		2.1. Introducing WAN		
		2.2. The Evolving Enterprise		
		2.3. The Evolving Network Model		
		3. WAN Technology Concepts		
		3.1. WAN Technology Overview		
		3.2. WAN Physical Layer Concepts		
		3.3. WAN Data Link Layer Concepts		
		3.4. WAN Switching Concepts		
		4. WAN Connection Options		
		4.1. WAN Link Connection Options		
		4.2. Dedicated Connection Link Options		
		4.3. Circuit Switched Connnection Options		
		4.4. Packet Switched Connection Options		
		4.5. Internet Connection Options		
		5. Chapter Labs		
		6. Chapter Summary		
		7. Chapter Quiz		
2	PPP	1. Chapter Introduction	Lecture, Class room discussion	A. Ch.2
		2. Serial Point-to-Point Links		
		2.1. Introducing Serial Communications		
		2.2. TDM		
		2.3. Demarcation Point		
		2.4. DTE and DCE		
		2.5. HDLC Encapsulation		
		2.6. Configuring HDLC Encapsulation		
		2.7. Troubleshooting a Serial Interface		
		3. PPP Concepts		
		3.1. Introducing PPP		
		3.2. PPP Layered Architecture		
		3.3. PPP Frame Structure		
		3.4. Establishing a PPP Session		
		3.5. Establishing a Link with LCP		
		3.6. NCP Explained		
		4. Configuring PPP		

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
		4.1. PPP Configuration Options		
		4.2. PPP Configuration Commands		
		4.3. Verifying a Serial PPP Encapsulation Configuration		
		4.4. Troubleshooting PPP Encapsulation		
3	PPP	1. Configuring PPP with Authentication		A. Ch.2
		1.1. PPP Authentication Protocols		
		1.2. Password Authentication Protocol (PAP)		
		1.3. Challenge Handshake Authentication Protocol (CHAP)		
		1.4. PPP Encapsulation and Authentication Process		
		1.5. Configuring PPP with Authentication		
		1.6. Troubleshooting a PPP Configuration with Authentication		
		2. Chapter Summary		
		3. Chapter Quiz		
4	Frame Relay	1. Introduction to Frame Relay	Lecture, Class room discussion	A. Ch.3
		2. Basic Frame Relay Concepts		
		2.1. Introducing Frame Relay		
		2.2. Virtual Circuits		
		2.3. Frame Relay Encapsulation		
		2.4. Frame Relay Topologies		
		2.5. Frame Relay Address Mapping		
		3. Configuring Frame Relay		
		3.1. Configuring Basic Frame Relay		
		3.2. Configuring Static Frame Relay Maps		
		4. Advanced Frame Relay Concepts		
		4.1. Solving Reachability Issues		
		4.2. Paying for Frame Relay		
		4.3. Frame Relay Flow Control		
		5. Configuring Advanced Frame Relay		
		5.1. Configuring Frame Relay Sub Interfaces		
		5.2. Verifying Frame Relay Operation		
		5.3. Troubleshooting Frame Relay Configuration		
		6. Chapter Summary		

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
		7. Chapter Quiz		
5	Network Security	1. Chapter Introduction	Lecture, Class room discussion	A. Ch.4
		2. Introduction to Network Security		
		2.1. Why is Network Security Important ?		
		2.2. Common Security Threats		
		2.3. Types of Network Attacks		
		2.4. General Mitigation Techniques		
		2.5. The Network Security Wheel		
		2.6. Enterprise Security Policy		
		3. Securing Cisco Routers		
		3.1. Router Security Issues		
		3.2 Applying Cisco IOS Security Features to Routers		
		3.3. Manage Router Security		
		3.4. Securing Remote Administrative Access to Routers		
		3.5. Logging Router Activity		
6	Network Security	1. Secure Router Network Services	Lecture, Class room discussion	A. Ch.4
		1.1. Vulnerable Router Services and Interfaces		
		1.2. Securing Routing Protocols		
		1.3. Locking Down the Router with Cisco Auto Secure		
		2. Using Cisco SDM		
		2.1. Cisco SDM Overview		
		2.2. Configuring the Router to Support Cisco SDM		
		2.3. Starting Cisco SDM		
		2.4. The Cisco SDM Interface		
		2.5. Cisco SDM Wizards		
		2.6. Locking Down a Router with Cisco SDM		
7	Network Security	1. Secure Router Management	Lecture, Class room discussion	A. Ch.4
		1.1. Maintaining Cisco IOS Software Images		
		1.2. Managing Cisco IOS Images		
		1.3. Backing Up and Upgrading Software Image		
		1.4. Recovering Software Images		
		1.5. Troubleshooting Cisco IOS Configurations		
		1.6. Recovering a Lost Router Password		
		2. Chapter Summary		

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
		3. Chapter Quiz		
MID-EXAM				
8	ACLs	1. Introduction to ACLs		A. Ch.5
		2. Using ACLs to Secure Networks		
		2.1. A TCP Conversation		
		2.2. Packet Filtering		
		2.3. What is an ACL ?		
		2.4. ACL Operation		
		2.5. Types of Cisco ACLs		
		2.6. How a Standard ACL Works		
		2.7. Numbering and Naming ACLs		
		2.8. Where to Place ACLs		
		2.9. General Guidelines for Creating ACLs		
		3. Configuring Standard ACLs		
		3.1. Entering Criteria Statements		
		3.2. Configuring a Standard ACL		
		3.3. ACL Wildcard Masking		
		3.4. Applying Standard ACLs to Interfaces		
		3.5. Editing Numbered ACLs		
		3.6. Creating Standard Named ACLs		
		3.7. Monitoring and Verifying ACLs		
		3.8. Editing Named ACLs		
9	ACLs	1. Configuring Extended ACLs	Lecture, Class room discussion	A. Ch.5
		1.1. Extended ACLs		
		1.2. Configuring Extended ACLs		
		1.3. Applying Extended ACLs to Interfaces		
		1.4. Creating Named Extended ACLs		
		2. Configuring Complex ACLs		
		2.1. What are Complex ACLs ?		
		2.2. Dynamic ACLs		
		2.3. Reflexive ACLs		
		2.4. Time-based ACLs		
		2.5. Troubleshooting Common ACL Errors		
		3. Chapter Summary		
		4. Chapter Quiz		
10	Teleworker Services	1. Chapter Introduction	Lecture, Class room discussion	A. Ch.6
		2. Business Requirements for Teleworker Services		

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
		2.1. The Teleworker Solution		
		3. Broadband Services		
		3.1. Connecting Teleworkers to WAN		
		3.2. Cable		
		3.3. DSL		
		3.4. Broadband Wireless		
		4. VPN Technology		
		4.1. VPNs and Their Benefits		
		4.2. Types of VPN		
		4.3. VPN Components		
		4.4. Characteristics of Secure VPN		
		4.5. VPN Tunneling		
		4.6. VPN Data Integrity		
		4.7. IPSec Security Protocols		
		5. Chapter Summary		
		6. Chapter Quiz		
11	IP Addressing Services	1. Chapter Introduction	Lecture, Class room discussion	A. Ch.7
		2. DHCP		
		2.1. Introducing DHCP		
		2.2. DHCP Operation		
		2.3. BOOTP and DHCP		
		2.4. Configuring a DHCP Server		
		2.5. Configuring a DHCP Client		
		2.6. DHCP Relay		
		2.7. Configuring a DHCP Server using SDM		
		2.8. Troubleshooting DHCP		
		3. Scaling Networks with NAT		
		3.1. Private and Public IP Addressing		
		3.2. What is NAT ?		
		3.3. Benefits and Drawbacks of Using NAT		
		3.4. Configuring Static NAT		
		3.5. Configuring Dynamic NAT		
		3.6. Configuring NAT Overload		
		3.7. Configuring Port Forwarding		
		3.8. Verifying and Troubleshooting NAT Configurations		
12	IP Addressing Services	1. IPv6	Lecture, Class room discussion	A.Ch.7
		1.1. Reasons for Using IPv6		
		1.2. IPv6 Addressing		
		1.3. IPv6 Transition Strategies		
		1.4. Cisco IOS Dual Stack		
		1.5. IPv6 Tunneling		
		1.6. Routing Considerations		

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
		with IPv6		
		1.7. Configuring IPv6 Addresses		
		1.8. Configuring RIPng with IPv6		
		2. Chapter Summary		
		3. Chapter Quiz		
13	Network Troubleshooting	1. Chapter Introduction	Lecture, Class room discussion	A. Ch.8
		2. Establishing the Network Performance Baseline		
		2.1. Documenting the Network		
		2.2. Why is Establishing a Network Baseline Important ?		
		2.3. Steps for Establishing a Network Baseline		
		3. Troubleshooting Methodologies and Tools		
		3.1. General Approach to Troubleshooting		
		3.2. Using Layered Models for Troubleshooting		
		3.3. General Troubleshooting Procedures		
		3.4. Troubleshooting Methods		
		3.5. Gathering Symptoms		
		3.6. Troubleshooting Tools		
14	Network Troubleshooting	1. Common WAN Implementation Issues	Lecture, Class room discussion	A. Ch.8
		1.1. WAN Communications		
		1.2. Steps in WAN Design		
		1.3. WAN Traffic Considerations		
		1.4. WAN Topology Considerations		
		1.5. WAN Bandwidth Considerations		
		1.6. Common WAN Implementation Issues		
		1.7. Case Study: WAN Troubleshooting from an ISP's Perspective		
		2. Network Troubleshooting		
		2.1. Interpreting Network Diagrams to Identify Problems		
		2.2. Physical Layer Troubleshooting		
		2.3. Data Link Layer Troubleshooting		
		2.4. Network Layer Troubleshooting		
		2.5. Transport Layer Troubleshooting		
		2.6. Application Layer Troubleshooting		

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
		3. Chapter Summary 4. Chapter Quiz		
FINAL-EXAM				

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) : Berkah I. Santoso, ST, MTI
Jabatan (*Position*) : Dosen
Tanggal (*Date*) : 12/07/2012

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito
Jabatan (*Position*) : Ketua Program Studi
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* TIF309	**Nama Mata Kuliah** *(Course Name)* **:** Sistem Terdistribusi / Distributed System		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Fakultas Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** FTK203 (Sistem Basis Data / Data Base System)	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** --	**Praktikum** *(Practicum)***:** --
Revisi *(Revision Status)***: R-01**	**Semester Ganjil/Genap*** *(Odd/Even Semester*)* **Tahun Akademik 2013/2014** *(AY* 2013/2014*)*		
Lecturer's name: Berkah I. Santoso, ST, MTI			

COURSE DESCRIPTION

This course will cover the topic of distributed systems materials: an introduction to distributed systems, architectures of distributed systems, processes, communications, naming, synchronization, consistency and replication, fault tolerance, security related to distributed systems, distributed object-based, web-based, coordination-based systems, and distributed file systems.

COURSE OBJECTIVES

The objectives of this course are as follows:

- Present the principles underlying the function of distributed systems and their extension to grid computing, cloud computing and virtualization techniques.
- Create an awareness of the fundamental technical challenges in distributed systems design and implementation.
- Expose students to current technology used to build architecture to enhance distributed computing infrastructures with various computing principles and paradigms, including grid and cloud computing.
- Enhance students' understanding of key issues related to multi-level interoperability across a distributed infrastructure and across multiple heterogeneous and distributed resources in a dynamically changing computing environment.
- Expose students to past and current research issues in the field of distributed systems and new challenges in cloud computing.
- Provide experience in analyzing a distributed computing model and implementing typical algorithms used in distributed systems and distributed applications in cloud infrastructure.

Upon completion of the course the student should be able to:

1. Explain what a distributed system is, why the student would design a system as a distributed system, and what the desired properties of such systems are.
2. List the principles underlying the functioning of distributed systems, describe the problems and challenges associated with these principles and evaluate the effectiveness and shortcomings of their solutions.
3. Recognize how the principles are applied in contemporary distributed systems, explain how they affect the software design, and be able to identify features and design decisions that may cause problems.
4. Design a distributed system that fulfills requirements with regards to key distributed system properties (such as scalability, transparency, etc), be able to recognize when this is not possible and explain why.
5. Build distributed system software using both basic OS mechanisms as well as higher-level middleware and languages.

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

It is imperative that students take an active interest in the course. To succeed in this course, students must read, think, and write in an analytical manner and this takes time and practice. Such practice can only be achieved by working exercises. When troubles arise, and they will, the student must ask questions which may be directed to the instructor or other students in a variety of ways.

Students are also encouraged to work together on problem sets as part of their exercises. However, individual must ultimately demonstrate the understanding of the material by writing up his/her own solutions without the help of other students or their written work.

On average students need to spend, at least, 9 hours of study and preparation per week for this course.

ATTENDANCE REQUIREMENT

Comply with academic rules. Absence from lectures shall not exceed 22%. Students who exceed the 22% limit without a medical or emergency excuse acceptable to and approved by the Dean of the Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

A. Tanenbaum. Andrew S, Maarten Van Steen; Distributed Systems: Principles and Paradigms 2nd Ed.; Pearson Education, Inc., 2012.
B. Velte. Toby, Anthony Velte, Robert Elsenpeter, Cloud Computing, A Practical Approach; McGraw Hill Osborne Media., 2012

COURSE OUTLINE

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
1	Introduction	1. Definition of a Distributed System	Lecture, Class room discussion	A.Ch.1
		2. Goals of Distributed Systems		
		3. Types of Distributed Systems		
		4. Chapter Summary		
2	Architectures	1. Architectural styles	Lecture, Class room discussion	A. Ch.2
		2. System architectures		
		3. Architectures versus middleware		
		4. Self-management in distributed systems		
		5. Chapter Summary		

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
3	Processes	1. Threads 2. Virtualization 3. Clients 4. Servers 5.Code Migration 6.Chapter Summary		A. Ch.3, B. Ch.1, 8, 12.
4	Communications	1. Communication fundamentals 2. Remote Procedure Call 3. Message-oriented Communication 4. Stream-oriented Communication 5. Multicast Communication 6. Chapter Summary	Lecture, Class room discussion	A. Ch.4, B. Ch.8
5	Naming	1. Names, identifiers and addresses 2. Flat naming 3. Structured naming 4. Attribute-based naming 5. Chapter Summary 6. Cloud computing services	Lecture, Class room discussion	A. Ch.5 B. Ch.4
6	Synchronization	1. Clock synchronization 2. Logical clocks 3. Mutual Exclusion 4. Global Positioning of Nodes 5. Election Algorithms 6. Chapter Summary 7. Network Cloud Infrastructure 8. Service Cloud Infrastructure	Lecture, Class room discussion	A. Ch.6 B. Ch.5
7	Consistency and replication	1. Introduction of consistency and replication. 2. Data-centric consistency models. 3. Client-centric consistency models. 4. Replica management 5. Consistency protocols. 6. Chapter Summary 7. Cloud Storage	Lecture, Class room discussion	A. Ch.7 B. Ch.7
MID-EXAM				
8	Fault tolerance	1. Introduction to fault tolerance. 2. Process resilience. 3. Reliable client-server communication. 4. Reliable group communication. 5. Distributed commit. 6. Recovery. 7. Chapter Summary.	Lecture, Class room discussion	A. Ch.8 B. Ch.8

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
		8. Cloud computing standards		
9	Security	1. Introduction to security. 2. Secure channels. 3. Access control. 4. Security management 5. Chapter Summary	Lecture, Class room discussion	A. Ch.9 B. Ch.2, 5, 7, 8, 12
10	Distributed object-based systems	1. Architecture. 2. Processes. 3. Communication. 4. Naming. 5. Synchronization. 6. Software as a Service	Lecture, Class room discussion	A. Ch.10 B. Ch.9
11	Distributed object-based systems	1. Consistency and replication. 2. Fault tolerance. 3. Security 4. Chapter Summary 5. Software plus Services 6. Local Clouds and Thin Clients	Lecture, Class room discussion	A. Ch.10 B. Ch.10, 12
12	Distributed file systems	1. Architecture 2. Processes 3. Communication 4. Naming 5. Synchronization 6. Consistency and replication 7. Fault tolerance 8. Security 9. Chapter Summary .	Lecture, Class room discussion	A.Ch.11
13	Distributed web-based systems	1. Architecture 2. Processes 3. Communication 4. Naming 5. Synchronization 6. Consistency and replication 7. Fault tolerance 8. Chapter Summary	Lecture, Class room discussion	A.Ch.12 B. Ch.6, 8
14	Distributed coordination-based systems	1. Introduction to coordination models 2. Architecture 3. Processes 4. Communication 5. Naming 6. Consistency and replication 7. Fault tolerance 8. Security 9. Chapter Summary	Lecture, Class room discussion	A. Ch.13

SYLLABUS

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
FINAL-EXAM				

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) : Berkah I. Santoso, ST, MTI
Jabatan (*Position*) : Dosen
Tanggal (*Date*) : 27/11/2012

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito
Jabatan (*Position*) : Ketua Program Studi
Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code)*: **TIF312**	**Nama Mata Kuliah** *(Course Name)* **:** **IT Project Management**		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** **-**	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** 0	**Praktikum** *(Practicum)*: 0
Revisi *(Revision Status)*: R-1	**Semester ~~Ganjil~~/Genap*** *(~~Odd~~/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: • Dr. Hoga Saragih, ST, MT			

COURSE DESCRIPTION

This course focuses on information technology project management. It introduces fundamentals of IT project management using both concept and application. A generic Information Technology Project Methodology (ITPM) is used. The nine areas of the Project Management Institute's Project Management Body of Knowledge (PMBOK) are incorporated. This course aims on introducing the theory and practice of project management through an integrated view of the concepts, skills, tools, and techniques involved in the management of projects that emphasis on information technology.

COURSE OBJECTIVES

Goals of the course are divided into employability and entrepreneurial skills about IT Project Management and study program specific outcomes about IT Project Management, in which students need to have demonstrated by the time they complete their course. Employability and entrepreneurial skills consist of planning and organizing, problem solving and decision-making, self-management, team work, communication, and initiative and enterprise in IT Project Management. However, this Course specifically focuses on the achievement of the following employability and entrepreneurial skills and study program specific outcomes in IT Project Management.

The specific course outcomes supporting the program outcomes are:

1. Students should be able to apply knowledge of IT Project Integration Management.
2. Students should be able to demonstrate IT Project Management.
3. Students should be able to apply Conceptualising & Initialising the IT Project.
4. Students should be able to Defining and Managing IT Project Scope.
5. Students should be able to apply knowledge of IT Project Time management, IT Project Cost Management, IT Project Quality Management, IT Project Team and Resource Management, IT Project Communications Management and IT Project Risk Management.
6. Students should be able to apply knowledge of IT Project Procurement Management and Outsourcing.

7. Students should be able to apply knowledge of IT Project Implementation, Closure and Evaluation.

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and practical problem solving, discussion, and field visit to assist the student to successfully meet the course's learning objectives.

ATTENDANCE REQUIREMENT

Comply with academic rules.

ASSESSMENT

Assignments	30%
Midterm Exam	30%
Final Exam	40%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

The following are suitable texts and/or references for this course:

1. Schwalbe, Kathy. (2009). Information Technology Project Management. Sixth edition. Course Technology. Augsburg. ISBN: 978-0324786927.
2. Marchewka, Jack T. (2006). Information Technology Project Management: Providing Measurable Organizational Value. Second edition. Wiley. Illinois. ISBN: 978-0471715399.
3. Philips, Joseph. (2010). IT Project Management: On Track from Start to Finish. Third Edition. McGraw-Hill Osborne Media. ISBN: 0071700439.

PREREQUISITES BY TOPIC :

Students are expected to have the following topical knowledge upon entering this course:
1. Satisfactory completion of understanding of basics of Information Technology
2. Ability to describe the simple theory management.
3. Ability to use a computer to prepare written reports and to perform basic data reduction, graphing, and engineering data presentation.

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
1.	**Introduction to IT Project Management** - Information technology projects definition - Key elements of the project		[1] Ch. 1-3	- Introduction to IT Project Management - Introduction to Project

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	management framework - The role of the project manager Project life cycle			Management principles IT project management, http://www.mindtools.com/pages/article/newPPM_00.htm
2.	**Conceptualising & Initialising the IT Project** - IT project methodology - IT project's measurable organizational value (MOV) - IT project business case Project selection process		[2] Ch. 2	- Initialising the IT Project - Initialising the IT Project Project planning guide, http://www.projectsmart.co.uk/project-planning-step-by-step.html
3.	**IT project integration management** - Framework for project integration management - Creating a project charter - Project management plan Project integration management tools		[1] Ch. 4.	- IT project integration management - Project integration management - Project integration management, http://www.project-management.mobi/Project-Integration-Management-Tutorial-or-project-management.html
4.	**Defining and Managing IT Project Scope** - Scope definition process - Process for creating a work breakdown structure - Verifying & controlling scope Project scope management tools		[1] Ch. 5.	- IT Project Scope management - Project Scope management IT project scope, http://www.ittoolkit.com/articles/projects/qt_scope.htm
5.	**IT Project time management** - Developing project schedules - Network diagrams - Planning and tracking schedule information Project time management tools		[1] Ch. 6	- IT Project time management - Project scheduling Project time management, http://www.noop.nl/2008/06/10-principles-of-agile-project-time-management.html

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
6.	**IT Project cost management** - Project cost management principles - Cost budgeting and cost estimate process for IT project - Cost control management Project cost management tools		[1] Ch. 7	- IT Project cost management - Project cost management Project cost estimation, http://pmbook.ce.cmu.edu/05_Cost_Estimation.html
7.	**IT Project Quality Management** - The importance of IT project quality management - Quality planning on IT project - Quality assurance & quality control process tools and techniques in project quality management		[1] Ch. 8	- IT Project Quality Management - Project Quality Management Project quality management, http://www.tutorialspoint.com/pmp-exams/project_quality_management.htm
	MID SEMESTER TEST			
8.	**IT Project Team and resource management** - IT project human resource management - Key concepts for managing people - Techniques in team development Tools and techniques to help manage a project team		[1] Ch. 9	- IT Project Team and resource management - project human resource management Team building, http://www.visitask.com/team-building.asp
9.	**IT Project Communications Management** - The importance of good communications in IT projects - IT project communications planning - Methods for distributing project information Methods for improving project communications		[1] Ch. 10	- IT Project Communications Management - Project Communications Management Project communication management, http://www.preparepm.com/notes/communication.html
10.	**IT Project Risks Management** - The importance of good project risk management - Risk management planning - Process of identifying risks & risk analysis IT project risk management tools		[1] Ch. 11	- IT Project Risk management - Project risk management Risk management, http://en.wikipedia.org/wiki/Risk_management
11.	**IT Project procurement management**		[1] Ch. 12.	- IT Project procurement

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	- The importance of project procurement management - Procurements planning for IT projects - The process of administering project procurements Project procurement management to			- Project Procurement Management Procurement management, http://www.hyperthot.com/pm_meth9.htm
12.	**IT Project Implementation, Closure, & Evaluation** - The tactical approaches to IT project implementation - The processes associated with project closure - Project evaluations or reviews Final project presentation		[2] Ch. 14	- IT Project Implementation, Closure, & Evaluation - A Post-Mortem Evaluation of an IT project Closing a Project, http://content.undp.org/go/userguide/results/project/closing/
13.	Project Presentation			
14.	Project Presentation			
	FINAL SEMESTER TEST			

Dipersiapkan oleh *(Prepared by)*:

Nama (*Name*) : Dr. Hoga Saragih, ST, MT

Jabatan (*Position*) :

Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito., Ph.D

Jabatan (*Position*) : Ketua Program Studi TIF

Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code)*: **TIF353**	**Nama Mata Kuliah** *(Course Name)* **:** **Pemrograman Sistem Mobile**[1)]		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** **Algorithm and programming**	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** 0	**Praktikum** *(Practicum)*: 0
Revisi *(Revision Status)*: R-1	**Semester ~~Ganjil~~/Genap*** *(~~Odd~~/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: • Yusuf Lestanto, S.T., M.Sc.			

COURSE DESCRIPTION

This course is aimed that the students are able to explain the concept of mobile programming and to allow the student have the ability of design and develop applications on mobile devices.

COURSE OBJECTIVES

By the end of this course, students should be able to:
1. Understand the concept of Mobile Programming and JavaME
2. Understand hot to create a MIDlet
3. Understand the Java Wireless Toolkits (JWT)
4. Understand how to use Netbeans in creating a MIDlet;
5. Understand how to create database and networking on a mobile device,
6. Understand how to create user interface on a mobile device,
7. Understand how to create forms and items,
8. Understand how to create and display menus and graphics
9. Understand how to use API for creating mobile games
10. Able to create game applications

METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and computer lab exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

*Students coming 15 minutes after the class begins are not allowed to signing the class' attendance list. Students coming 30 minutes after the class begins are not allowed to enter the class.

ASSESSMENT

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged. Lab exercises to be completed in the class or as homework.

Class Review Questions. These include short answers to provide feedback for the students understanding topic by topic.

Lab Exercises. These include the use of MySQL DBMS to provide feedback on the students' practical competency, and group consultancy on the assigned project.

Mid-Test, Final test and Project-based Assessment. This course is a project-based which means students will be obliged to conduct a project. The project will provide most part of the students' grade. The mid-test and final-test will be used to evaluate student understanding of the materials given in the classes.

Summary of the grading :

Project-based Assessment	40%
Final-test	30%
Mid-test	20%
Lab Exercises	10%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Main book:
Flynt, John P., and Martin J. Wells. Java ME Game Pogramming. 2nd. Boston: Thomson Course Technology PTR, 2008

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references
L-1	Introduction to JavaME		Chapter 1, 2
L-2	JavaME and devices		Chapter 3
L-3	MIDP and MIDlet		Chapter 4
L-4	Java Wireless Toolkits		Chapter 5

Session	Topic & Sub-topics	Methods of delivery	Material references
L-5	Netbeans		Chapter 6
L-6	JavaME Basics		Chapter 7
L-7	Record Management System (RMS)		Chapter 8
	MID SEMESTER TEST		
L-8	User Interface		Chapter 9
L-9	Forms and Items		Chapter 10
L-10	Images and choices		Chapter 11
L-11	Date and calender		Chapter 12
L-12	API for games		Chapter 13
L-13	Game Implementation		Chapter 14
L-14	Project-based assessment		Chapter 9
	FINAL SEMESTER TEST		

Dipersiapkan oleh *(Prepared by)*:

Nama (*Name*) : Yusuf Lestanto, S.T., M.Sc.

Jabatan (*Position*) :

Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito., Ph.D

Jabatan (*Position*) : Ketua Program Studi TIF

Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* TIF354	**Nama Mata Kuliah** *(Course Name)* **:** Data Warehouse dan Mining/ Data Warehouse and Mining		
Program Studi *(Study Program)* **:** **Teknologi Informasi**	**Fakultas** *(Faculty)* **:** Fakultas Teknik Komputer		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** Database systems Advanced Database Systems	**Kredit** *(Credit)* **:** 3 SKS		
	Kuliah *(Lecture)* **:** 2 SKS	**Tutorial :** -	**Praktikum** *(Practicum)***:** 1 SKS
Revisi *(Revision Status)***:** R-1	**Semester Ganjil/Genap*** *(~~Odd~~/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: Yusuf Lestanto, S.T., M.Sc.			

COURSE DESCRIPTION

Data warehouse is a collection of data that have a nature-oriented subjects, integrated, time-variant, and is fixed from the collection of data to support management decision-making process.

COURSE OBJECTIVES

By the end of this course, students should be able to:

- Understand to create a reconciled database to boost data mart architecture
- Understand to capture and expressively represent end-user requirements
- Able to build a conceptual data mart schema using the Dimensional Fact Model
- Able to estimate data mart volume and workload
- Understand to improve performance using advanced logical modeling techniques Understand to use sophisticated indexing techniques to optimize query execution plans
- Able to extract, transform, cleanse, and load data from operational sources
- Able to discover innovative business intelligence techniques

METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and computer lab exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

*Students coming 15 minutes after the class begins are not allowed to signing the class' attendance list. Students coming 30 minutes after the class begins are not allowed to enter the class.

ASSESSMENT

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged. Lab exercises to be completed in the class or as homework.

Class Review Questions. These include short answers to provide feedback for the students understanding topic by topic.

Mid-Test and Final-test. These closed book written tests will evaluate the students' knowledge, understanding and skill of the materials given in the classes.

Summary of the grading :

Middle Semester Test **(closed book)**	30%	
Final Semester Test **(closed book)**	40%	
Others (class participation, Assignments/quiz/pretest)		30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Main book:

[T1] Matteo Golfarelli, Stefano Rizzi; *Data Warehouse Design: Modern Principles and Methodologies;* 1st eds., McGraw-Hill Osborne Media (2009)

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references
1	Introduction to Data Warehousing		Chapter 1
2	Data warehouse System life cycle		Chapter 2
3	Analysis and reconciliation of Data sources		Chapter 3
4	User requirement analysis		Chapter 4
5	Conceptual modeling I		Chapter 5
6	Conceptual modeling II		Chapter 5
7	Conceptual design + review session 1-6		Chapter 6
MIDDLE SEMESTER TEST			
8	Logical Modeling		Chapter 8
9	Logical design		Chapter 9
10	Data-staging design		Chapter 10

SYLLABUS

Session	Topic & Sub-topics	Methods of delivery	Material references
11	Indexes for the data warehouse		Chapter 11
12	Physical design		Chapter 12
13	Business Intelligence: beyond the data warehouse I		Chapter 15
14	Business Intelligence: beyond the data warehouse II and review session 8-13		Chapter 15
FINAL SEMESTER TEST			

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) : Yusuf Lestanto
Jabatan (*Position*) : --
Tanggal (*Date*) : 3 Agustus 2012

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito
Jabatan (*Position*) : Kaprodi TI
Tanggal (*Date*) : Agustus 2012

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* **TIF358**	**Nama Mata Kuliah** *(Course Name)* **:** **Manajemen Jaringan/ Network Management**		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** -	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** 0	**Praktikum** *(Practicum)***:** 0
Revisi *(Revision Status)***:** R-1	**Semester ~~Ganjil~~/Genap*** *(~~Odd~~/Even Semester*)* **Tahun Akademik 2012/2013** *(AY 2012/2013)*		
Lecturer's name: • Iwan Adhicandra			

COURSE DESCRIPTION

This module provides an exploration of the tools, techniques, issues and problems arising from the development of computer networks, and the requirement to manage them. The module considers the range of network management tasks from initial planning through to the security and operational aspects of network usage. Throughout, the emphasis is on the use of the methods considered, with each aspect of the system being placed in a realistic context. The module content is presented as detailed below, with lectures being used as a way of further exploring topics covered by reading and laboratory work.

COURSE OBJECTIVES

By the end of this course, students should be able to:

- describe the concept of behavior of a network system from the viewpoint of a user
- discuss the operational requirements arising from the demands of users
- evaluate the impact of a range of application types on a communications system
- determine the effectiveness of various communications mechanisms and protocols in handling that impact
- recognise the need for management in a networking environment, and understand how that need may be met
- select suitable information collection methodologies to allow the behaviour of a network to be controlled
- apply simulation techniques to the prediction of the behavior of a network

METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and computer lab exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

ATTENDANCE REQUIREMENT

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

ASSESSMENT

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged. Lab exercises to be completed in the class or as homework.

Class Review Questions. These include short answers (S.A.) and algorithm workbenches (A.W.) to provide feedback of the students' understanding topic by topic.

Mid-Test and Final-Test. These written tests will evaluate the students' level of knowledge and skills on this course.

Summary of the grading :

Final test	40%
Mid-test	30%
Lab Report / Assignment	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

Textbooks [T]:

[T1] Subramanian, Mani (2000), Network Management Principles and Practice, Addison Wesley.

COURSE OUTLINE

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
L-1	Data Communications and Network Management Overview		**[T1],** Chap1	Lab Session
L-2	Review of Computer Network Technology		**[T1],** Chap 2	Lab Session
L-3	Basic Foundations: Standards, Models, and Language		**[T1],** Chap 3	Lab Session
L-4	SNMPv1 Network Management: Organization and Information Models		**[T1],** Chap 4	Lab Session
L-5	SNMPv1 Network Management:		**[T1],** Chap 5	Lab Session

Session	Topic & Sub-topics	Methods of delivery	Material references	Assignment
	Communication and Functional Models			
L-6	SNMP Management: SNMPv2		**[T1],** Chap 6	Lab Session
L-7	SNMP Management: SNMPv3		**[T1],** Chap 7	Lab Session
	MID SEMESTER TEST			
L-8	SNMP Management: RMON		**[T1],** Chap 8	Lab Session
L-9	Broadband Network Management		**[T1],** Chap 10	Lab Session
L-10	Telecommunications Management Network		**[T1],** Chap 11	Lab Session
L-11	Network Management Tools and Systems		**[T1],** Chap 12	Lab Session
L-12	Network Management Applications		**[T1],** Chap 13	Lab Session
L-13	Web-Based Management		**[T1],** Chap 14	Lab Session
L-14	Review			
	FINAL SEMESTER TEST			

COMPUTER LAB (CL) SESSIONS

SESSION	TOPIC	Lab Assignment
CL-1	Network monitoring	
CL-2	Network monitoring	
CL-3	ASN.1 practice	
CL-4	ASN.1 practice	
CL-5	ASN.1 compiler	
CL-6	ASN.1 compiler	
CL-7	SNMP	
MID SEMESTER TEST		
CL-8	SNMP	
CL-9	OPNET models	
CL-10	OPNET models	

CL-11	tkined	
CL-12	tkined	
CL-13	The CMU agent code	
CL-14	The CMU agent code	
FINAL SEMESTER TEST		

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) : Iwan Adhicandra.

Jabatan (*Position*) :

Tanggal (*Date*) :

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito., Ph.D

Jabatan (*Position*) : Ketua Program Studi TIF

Tanggal (*Date*) :

UNIVERSITAS BAKRIE

SYLLABUS

TIF 714
Mobile Computing

(2 SKS)

Student

GF 22 GMSB Academic Affairs,
Jl. HR. Rasuna Said Kav. C 22, **Kuningan, Jakarta Selatan 12920**
Phone: 021 – 526 1448

SYLLABUS
TIF 714
Mobile Computing

I. NAME OF FACULTY

Iwan Adhicandra

II. COURSE DESCRIPTION

This course will introduce students to mobile computing and mobile application development. Mobile computing will be discussed from three perspectives: mobile technology, application development, and user interaction. It will first overview various mobile computing applications, technologies and wireless communication. Next, students will learn about common paradigms in mobile computing such as low power computing, computing in an environment with limited resources, fault tolerance, and persistence. Students will be introduced to and use mobile application frameworks and development environments to reinforce concepts covered in lectures. User interface and user experience will be discussed and application development guidelines from various vendors will be discussed and analyzed. Lastly, the the course will look at some current research in mobile computing. Students will be expected to learn at least one mobile application development framework and use it to implement their assignments and course project.

III. COURSE PREREQUISITE:

None

IV. LANGUAGE:

English.

V. TEXTBOOK & STATIONARY

Textbooks [T]:

[T1] Talukder, Asoke K, and Roopa Yavagal (2006), *Mobile Computing Technology, Applications, and Service Creation*, McGraw-Hill

VI. COURSE OBJECTIVES

By the end of this course, students should be able to:

- understand various mobile computing applications, technologies and wireless communication
- learn about common paradigms in mobile computing
- learn mobile application development framework

VII. METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

VIII. ATTENDANCE PROCEDURE

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

IX. METHODS OF EVALUATION

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged.

Class Review Questions. These include short answers (**S.A.**) and algorithm workbenches (**A.W.**) to provide feedback of the students' understanding topic by topic.

Mid-Test and Final-Test. These written tests will evaluate the students' level of knowledge and skills on this course.

Summary of the grading :

Final test	40%
Mid-test	30%
Assignment	30%

X. COURSE OUTLINE

LECTURE (L) SESSIONS

SESSION	TOPIC	Textbook	Course Assignment
L-1	Introduction	**[T1],** Ch.1, p1-p32	
L-2	Mobile Computing Architecture	**[T1],** Ch.2, p33-p71	
L-3	Mobile Computing Through Telephony	**[T1],** Ch.3, p73-p98	
L-4	Emerging Technologies	**[T1],** Ch.4, p99-p138	
L-5	Global System for Mobile Communications (GSM)	**[T1],** Ch.5, p137-p166	
L-6	Short Message Service (SMS)	**[T1],** Ch.6, p167-p202	

L-7	General Packet Radio Service (GPRS)	**[T1],** Ch.7, p203-p224	
L-8	Wireless Application Protocol (WAP)	**[T1],** Ch.8, p225-p253	
L-9	CDMA and 3G	**[T1],** Ch.9, p255-p295	
L-10	Wireless LAN	**[T1],** Ch.10, p297-p335	
L-11	Intelligent Networks and Interworking	**[T1],** Ch.11, p337-p364	
L-12	Voice over Internet Protocol and Convergence	**[T1],** Ch.17, p563-p590	
L-13	Security Issues in Mobile Computing	**[T1],** Ch.18, p591-p634	
L-14	Review		
FINAL SEMESTER TEST			

UNIVERSITAS BAKRIE

SYLLABUS

TIF 715
Advanced Broadband Networking

(2 SKS)

Student

GF 22 GMSB Academic Affairs,
Jl. HR. Rasuna Said Kav. C 22, **Kuningan, Jakarta Selatan 12920**
Phone: 021 – 526 1448

SYLLABUS
TIF 715
Advanced Broadband Networking

I. NAME OF FACULTY

Iwan Adhicandra

II. COURSE DESCRIPTION

This lecture will discuss Packet Delay Modeling, Network of Queues, Quality of Service in Broadband Networks and Bandwidth Allocations, Architecture of High-Speed Switches and Routers, Multicast Protocols, VPNs, Overlay Networks, Multi-Protocol Label Switching (MPLS), and Broadband Network Architectures

III. COURSE PREREQUISITE:

None

IV. LANGUAGE:

English

V. TEXTBOOK & STATIONARY

Textbooks [T]:

[T1] Mir, Nader F. (2010), *Computer and Communication Networks*, Prentice-Hall, 2nd Edition

VI. COURSE OBJECTIVES

By the end of this course, students should be able to:

- Understand the Fundamentals of Broadband Networks
- Analyze MPLS Networks for Broadband Communications
- Analyze VPNs, Tunneling, and Overlay Networks
- Design High Speed Switches and Routers
- Analyze Packet Queues and Delay Analysis
- Identify, formulate and solve Multicasting Techniques and Protocols.
- Analyze Theoretical Foundations in Constructing a Network Simulation Tools
- Describe Quality of Service in Advanced Networking

VII. METHODS OF INSTRUCTIONS

The lecturer may use lectures, questions and exercises from the textbook in the Power Point presentations and the interactive discussions whether through face-to-face conventional way or through on-line course management system.

VIII. ATTENDANCE PROCEDURE

Punctuality and regular attendance in classes is of prime importance for successful completion of this course. Students will be expected to arrive for class on time and to remain in class until the end of the class session. Students should attend at least 80% of the scheduled lectures and labs to be able to take the Final test.

IX. METHODS OF EVALUATION

Class review questions to be completed in the class or as homework. Dictionaries, spellcheckers, and other methods of checking are encouraged.

Class Review Questions. These include short answers (**S.A.**) and algorithm workbenches (**A.W.**) to provide feedback of the students' understanding topic by topic.

Mid-Test and Final-Test. These written tests will evaluate the students' level of knowledge and skills on this course.

Summary of the grading :

Final test	40%
Mid-test	30%
Assignment	30%

X. COURSE OUTLINE

LECTURE (L) SESSIONS

SESSION	TOPIC	Textbook	Course Assignment
L-1	Overview of Broadband Networks		
L-2	VPNs, Tunneling, Overlay Networks	Ch.16	
L-3	Multi-Protocol Label Switching and	Ch.16	
L-4	MPLS Networks	Ch.16	
L-5	Optical Networks	Ch.14	
L-6	Architecture of High Speed Switches and Routers	Ch.13	
L-7	Architecture of High Speed Switches and Routers	Ch.13	
MID SEMESTER TEST			

L-8	Multicasting Techniques and Protocols	Ch.15	
L-9	Multicasting Techniques and Protocols	Ch.15	
L-10	Packet Delay Models	Ch.11	
L-11	Network of Queues	Ch.11	
L-12	Foundation of Simulation Tools	Ch.11	
L-13	Quality of Service in Broadband Networks	Ch.12	
L-14	Review	Review	
FINAL SEMESTER TEST			

UNIVERSITAS BAKRIE

SYLLABUS

Kode Mata Kuliah *(Course Code):* TIF401	**Nama Mata Kuliah** *(Course Name)* **:** Keamanan Teknologi Informasi / *IT Security*		
Program Studi *(Study Program)* **:** **Teknik Informatika**	**Fakultas** *(Faculty)* **:** **Fakultas Teknik dan Ilmu Komputer**		
Mata Kuliah Pra-syarat *(Course Prerequisite)* **:** FTK204 (Jaringan Komputer /*Computer Network*)	**Kredit** *(Credit)* **:** 3		
	Kuliah *(Lecture)* **:** 3	**Tutorial :** --	**Praktikum** *(Practicum)***:** --
Revisi *(Revision Status)***: R-01**	**Semester Ganjil/Genap*** *(Odd/Even Semester*)* **Tahun Akademik 2013/2014** *(AY* 2013/2014*)*		
Lecturer's name: Benfano Soewito, Ph.D			

COURSE DESCRIPTION

This course will cover the topic of fundamentals of computer security. Topics in this class can be divided into five main parts: computer security technology and principles(with a focus on user authentication, access control, database, Denial of Service attack, Intrusion Detection, Intrusion Prevention and firewall), software security and trusted systems(with a focus on buffer overflow, operating system, trusted computing and multilevel security) , management issues related to computer security(with a focus on security management, controls, infrastructure, human resource, auditing and legal aspects), cryptographic algorithms(with a focus on symmetric encryption, public-key, authentication and message confidentiality), network security (with a focus on internet security protocol, standards, authentication application and wireless security).

COURSE OBJECTIVES

The objectives of this course are as follows:

- Present the principles underlying the computer and network security along with some relevant background in basic cryptography.
- Apply methods for authentication, access control, intrusion detection and prevention.
- Identify and mitigate software security vulnerabilities in existing systems.
- Expose students to learn coding styles that reduce the chance introducing vulnerabilities.
- Enhance students' understanding of evaluation the security risks of systems and perform security audits related to security management issues.
- Enhance students' understanding of ethical and legal issues in system security.
- Expose students to use basic cryptographic techniques in software and system design.
- Provide experience in analyzing IT infrastructure related to network security.

Upon completion of the course the student should be able to:

1. Explain what computer and network security are, why the student would design a secure system as an aspect of IT infrastructure, and what the desired properties of such systems are.
2. List the basics of and security threats to computer systems, network and their solution methods.
3. Analyze, amend and design the basic security, authentication and key distribution protocols and systems.
4. Show understanding of network-level attack prevention and detection systems.
5. Develop an understanding of security policies (such as authentication, integrity and confidentiality) as well as protocols to implement such policies in the form of message exchanges.
6. Develop a basic understanding of cryptography, how it was evolved, and some key encryption techniques used today.

METHODS OF INSTRUCTIONS

Classroom instruction consists of lectures and practical problem solving, supplemented by visual aids designed to assist the student to successfully meet the course's learning objectives.

It is imperative that students take an active interest in the course. To succeed in this course, students must read, think, and write in an analytical manner and this takes time and practice. Such practice can only be achieved by working exercises. When troubles arise, and they will, the student must ask questions which may be directed to the instructor or other students in a variety of ways.

Students are also encouraged to work together on problem sets as part of their exercises. However, individual must ultimately demonstrate the understanding of the material by writing up his/her own solutions without the help of other students or their written work.

On average students need to spend, at least, 9 hours of study and preparation per week for this course.

ATTENDANCE REQUIREMENT

Comply with academic rules. Absence from lectures shall not exceed 22%. Students who exceed the 22% limit without a medical or emergency excuse acceptable to and approved by the Dean of the Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course.

ASSESSMENT

Coursework evaluation will be weighted as follows:

Middle Semester Test	30%
Final Semester Test	40%
Others (class participation, Assignments/quiz/pretest)	30%

MATERIAL REFERENCES AND REQUIRED SUPPLIES

A. William Stallings, Lawrie Brown; Computer Security : Principles and Practice 2nd Ed.; Pearson Education, Limited., 2012.
B. William Stallings, Cryptography and Network Security, Principles and Practice 5th Edition ; Pearson Education Inc., 2011.

COURSE OUTLINE

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
1	(a). Overview of Computer Security Technology and Principles (b). Cryptographic Tools	1. Overview of Computer Security Concepts	Lecture, Class room discussion	A. Ch.1, A. Ch.2, B. Ch.1
		2. Threats, Attacks and Assets		
		3. Security Functional Requirements		
		4. A Security Architecture for Open Systems		
		5. Computer Security Trends		
		6. Computer Security Strategy		
		7. Confidentiality with Symmetric Encryption		
		8. Message Authentication and		

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
		Hash Functions		
		9. Public-Key Encryption		
		10. Digital Signatures and Key Management		
		11. Random and Pseudorandom Numbers		
		12. Practical Application : Encryption of Stored Data		
2	(a). User Authentication, (b). Access Control and (c). Database Security	1. Means of Authentication	Lecture, Class room discussion	A. Ch.3, A. Ch 4, A. Ch.5, B. Ch.15
		2. Password-Based Authentication		
		3. Token-Based Authentication		
		4. Biometric Authentication		
		5. Remote User Authentication		
		6. Security Issues for User Authentication		
		7. Practical Application : An Iris Biometric System		
		8. Case Study : Security Problems for ATM Systems		
		9. Access Control Principles		
		10. Subjects, Objects and Access Rights		
		11. Discretionary Access Control		
		12. Example : UNIX File Access Control		
		13. Role-Based Access Control (RBAC)		
		14. Case Study : RBAC System for a Bank		
		15. The need for database security		
		16. Database Management Systems		
		17. Relational Databases		
		18. Database Access Control		
		19. Inference		
		20. Statistical Database		
		21. Database Encryption		
		22. Cloud Security		
3	(a). Malicious Software (b). Denial-of-Service Attacks	1. Types of Malicious Software		A. Ch.6, A. Ch.7
		2. Propagation-Infected Content-Viruses		
		3. Propagation-Vulnerability Exploit-Worms		
		4. Propagation-Social Engineering-SPAM E-mail-Trojans		
		5. Payload-System Corruption		
		6. Payload-Attack Agent-Zombie, Bots		
		7. Payload-Information Theft-Keyloggers, Phishing, Spyware		
		8. Payload-Stealthing-Backdoors, Rootkits		

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
		9. Countermeasures		
		10. Denial-of-Service Attacks		
		11. Flooding Attacks		
		12. Distributed Denial-of-Service Attacks		
		13. Application-Based Bandwidth Attacks		
		14. Reflector and Amplifier Attacks		
		15. Defenses against Denial-of-Service Attack		
		16. Responding to a Denial-of-Service Attack		
4	(a). Intrusion Detection, (b). Firewalls and Intrusion Prevention Systems	1. Intruders	Lecture, Class room discussion	A. Ch.8, A. Ch.9.
		2. Intrusion Detection		
		3. Host-Based Intrusion Detection		
		4. Distribution Host-Based Intrusion Detection		
		5. Network-Based Intrusion Detection		
		6. Distributed Adaptive Intrusion Detection		
		7. Intrusion Detection Exchange Format		
		8. Honeypots		
		9. Example System : Snort		
		10. The Need for Firewalls		
		11. Firewall Characteristics		
		12. Types of Firewalls		
		13. Firewall Basing		
		14. Firewall Location and Configuration		
		15. Intrusion Prevention Systems		
		16. Example : Unified Threat Management Products		
5	(a). Buffer Overflow, (b). Software Security and (c). Operating System Security	1. Stack Overflow	Lecture, Class room discussion	A. Ch.10, A. Ch.11, A. Ch.12, A. Ch.13.
		2. Defending Against Buffer Overflow		
		3. Other Forms of Overflow Attacks		
		4. Software Security Issues		
		5. Handling Program Input		
		6. Writing Safe Program Code		
		7. Interacting with the Operating System and Other Program		
		8. Handling Program Output		
		9. Introduction to Operating System Security		
		10. System Security Planning		
		11. Operating System Hardening		
		12. Application Security		

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
		13. Security Maintenance		
		14. Linux/Unix Security		
		15. Windows Security		
		16. Virtualization Security		
		17. The Bell-LaPadula Model for Computer Security		
		18. Other Formal Models for Computer Security		
		19. The Concept of Trusted Systems		
		20. Application of Multilevel Security		
		21. Trusted Computing and The Trusted Platform Module		
		22. Common Criteria for Information Technology Security Evaluation		
		23. Assurance and Evaluation		
6	(a). IT Security Management & Risk Assessment, (b). IT Security Controls, Plans & Procedures, (c). Physical & Infrastructure Security	1. IT Security Management	Lecture, Class room discussion	A. Ch.14, A. Ch.15, A. Ch.16.
		2. Organizational Context and Security Policy		
		3. Security Risk Assessment		
		4. Detailed Security Risk Analysis		
		5. Case Study : Silver Star Mines		
		6. IT Security Management Implementation		
		7. Security Controls or Safeguard		
		8. IT Security Plan		
		9. Implementation of Controls		
		10. Implementation Follow-Up		
		11. Overview of Infrastructure Security		
		12. Physical Security Threats		
		13. Physical Security Prevention and Mitigation Measures		
		14. Recovery from Physical Security Breaches		
		15. Example : A Corporate Physical Security Policy		
		16. Integration of Physical and Logical Security		
7	(a). Human Resources Security, (b). Security Auditing, (c). Legal & Ethical Aspects	1. Security Awareness, Training and Education	Lecture, Class room discussion	A. Ch.17 A. Ch.18, A. Ch.19.
		2. Employment Practices and Policies		
		3. E-Mail and Internet Use Policies		
		4. Computer Security Incident Response Teams		
		5. Security Auditing Architecture		
		6. The Security Audit Trail		
		7. Implementing the Logging Function		

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
		8. Audit Trail Analysis		
		9. Example : An Integrated Approach		
		10. Cybercrime and Computer Crime		
		11. Intellectual Property		
		12. Privacy		
		13. Ethical Issues		
MID-EXAM				
8	(a). Symmetric Encryption and Message Confidentiality, (b). Classical Encryption Techniques,	1. Symmetric Encryption and Principles.	Lecture, Class room discussion	A. Ch.20, B. Ch.2,
		2. Data Encryption Standard (DES) , Examples & its Strength.		
		3. Advanced Encryption Standard.		
		4. Stream Ciphers and RC4.		
		5. Cipher Block Modes of Operation.		
		6. Location of Symmetric Encryption Devices.		
		7. Key Distribution.		
		8. Symmetric Cipher Model.		
		9. Substitution Techniques.		
		10. Transposition Techniques		
		11. Rotor Machines		
		12. Steganography.		
9	(a). Block Ciphers and the Data Encryption Standard, (b). Basic Concepts in Number Theory and Finite Fields (c). Advanced Encryption Standard	1. Block Cipher Principles	Lecture, Class room discussion	B. Ch.3, B. Ch.4.
		2. Differential and Linear Cryptanalysis.		
		3. Block Cipher Design Principles.		
		4. Divisibility and the Division Algorithm.		
		5. The Euclidean Algorithm.		
		6. Modular Arithmetic.		
		7. Groups, Rings and Fields.		
		8. Finite Fields of the Form GF(p)		
		9. Polynomial Arithmetic.		
		10. Finite Fields of the Form GF(2”)		
		11. AES Structure		
		12. AES Transformation Functions.		
		13. AES Key Expansion, Example and Implementation.		
10	(a). Public Key Cryptography and Message Authentication. (b). Public Key Cryptography and RSA	1. Secure Hash Functions	Lecture, Class room discussion	A. Ch.21 B. Ch.9, B. Ch.10.
		2. HMAC		
		3. The RSA Public-Key Encryption Algorithm		
		4. Diffie-Hellman and Other Asymmetric Algorithms		
		5. Principles of Public-Key		

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
	(c). Other Public-Key Cryptosystems.	Cryptosystems. 6. The RSA Algorithm. 7. Diffie-Hellman Key Exchange. 8. ElGamal Cryptographic Systems. 9. Elliptic Curve Arithmetic. 10. Elliptic Curve Cryptography. 11. Pseudorandom Number Generation Based on an Asymmetric Cipher.		
11	(a).Cryptographic Hash Functions. (b).Message Authentication Codes	1. Application of Cryptographic Hash Functions. 2. Two Simple Hash Functions. 3. Requirements and Security. 4. Hash Functions Based on Cipher Block Chaining. 5. Secure Hash Algorithm (SHA). 6. SHA-3 7. Message Authentication Requirements. 8. Message Authentication Functions. 9. Requirements for Message Authentication Codes. 10. Security of MACs. 11. MACs Based on Hash Functions: HMAC. 12. MACs Based on Block Ciphers: DAA and CMAC. 13. Authenticated Encryption: CCM and GCM. 14. Pseudorandom Number Generation using Hash Functions and MACs.	Lecture, Class room discussion	B. Ch.11, B. Ch.12.
12	(a). Internet Security Protocols and Standards (b). Transport-Level Security (c). Electronic Mail Security	1. Secure E-mail and S/MIME. 2. DomainKeys Identified Mail 3. Secure Sockets Layer (SSL) and Transport Layer Security (TLS). 4. HTTPS. 5. IPv4 and IPv6 Security 6. Web Security Cosiderations. 7. Secure Shell (SSH). 8. Pretty Good Privacy	Lecture, Class room discussion	A. Ch.22, B. Ch.16, B. Ch.18
13	(a). Internet Authentication Applications (b). IP Security	1. Kerberos. 2. X.509. 3. Public-Key Infrastructure. 4. Federated Identity Management. 5. IP Security Overview. 6. IP Security Policy 7. Encapsulating Security Payload. 8. Combining Security	Lecture, Class room discussion	A.Ch.23, B.Ch.19

SESSION	TOPIC	SUB-TOPIC	Methods of Delivery	References
		Association.		
		9. Internet Key Exchange.		
		10. Cryptographic Suites.		
14	Wireless Network Security	1. Wireless Security Overview	Lecture, Class room discussion	A.Ch.24, B.Ch.17
		2. IEEE 802.11 Wireless LAN Overview.		
		3. IEEE 802.11i Wireless LAN Security.		
		4. Wireless Application Protocol Overview.		
		5. Wireless Transport Layer Security.		
		6. WAP End-to-End Security.		
FINAL-EXAM				

Dipersiapkan oleh *(Prepared by* **)**:

Nama (*Name*) : Benfano Soewito,
Jabatan (*Position*) : Dosen
Tanggal (*Date*) : 11/02/2013

Disahkan oleh *(Certified by)* :

Nama (*Name*) : Benfano Soewito, M.Sc, Ph.D
Jabatan (*Position*) : Ketua Program Studi
Tanggal (*Date*) :