

FACULTY OF INFORMATION TECHNOLOGY

DEPARTMENT	INFORMATION SYSTEMS
EDUCATION LEVEL	MASTER DEGREE

Department Learning Outcomes		
Working Skills	1.1	Able to utilize technological innovations in implementing, developing, and creating innovative work in the field of information technology / information systems.
	1.2	Able to develop knowledge in information systems creatively and scientifically based on ethics in scientific writing using keen logic and analysis as well as a strong analysis.
Knowledge Skills	2.1	Able to make a link between business needs and the latest technology in order to enhance the competitiveness of business enterprises, to evaluate the performance of systems based on information technology by considering the elements of novelty and usefulness.
	2.2	Mastering a strong knowledge base in the field of information systems.
	2.3	Mastering the insight to see the problems in multidimensional of information systems and considering as a research topic with a multidisciplinary approach.
	2.4	Able to define the problem, define the research objectives, selecting methods to achieve goals, and produce a scientific contribution.
	2.5	Able to produce and develop the scientific work that is beneficial to the development of science as well as national or international recognition.
	2.6	Able to understand the overall condition of the existing implementation of information systems technology in Indonesia, and are looking for best practice implementation of IT-based systems in the world using a multidisciplinary approach.

Managerial Skills	3.1	Mastering the insight to see the problems on information systems in multidimensional perspective and consider as a research topic with a multidisciplinary approach.
	3.2	Able to collaborate in designing, planning, and developing research in accordance with the research roadmap
Attitudes and Values Skills	4.1	Devoted to God Almighty
	4.2	Has a moral, ethical and good personality in completing its tasks
	4.3	Become as citizens who are proud and love for the country and to support world peace.
	4.4	Being able to work together and have social sensitivity and concern towards society and the environment
	4.5	Appreciate cultural diversity, views, beliefs, and religions as well as opinions / original findings of others
	4.6	Upholding the rule of law and have the passion to put the interests of the nation and communities.

Details of department's learning outcomes		
Working Skills	1.1.1	Able to explain the real similarities and differences between IT projects and project types .
	1.1.2	Able to identify IT project risks and develop risk mitigation strategies .
	1.1.3	Able to understand the basic knowledge of information technology - based system integration .
	1.1.4	Able to develop implementation and integration strategies for utilizing the technical and organizational capabilities of an organization .
	1.2.1	Able to design and analyze network technology to meet the organization needs.
	1.2.2	Able to manage the database and can review the recent database technology.
	1.2.3	Able to use active object-oriented approach in addressing the software needs.
	1.2.4	Able to develop qualitative research and quantitative research creatively .
Knowledge Skills	2.1.1	Able to provide business advice to a set of business data
	2.1.2	Able to take advantage of the architectural firm 's role in achieving business agility .
	2.2.1	Able to understand the basic components of Information Systems .
	2.3.1	Able to provide feedback or suggestions on the business or organization in order to improve organizational performance
	2.4.1	Able to conduct research independently or work together in teams .
	2.5.1	Able to write in the style of the journal selingkung either national or

		international scale .
	2.6.1	Able to understand a wide variety of management decision support system .
	2.6.2	Able to take advantage of the architectural firm 's role in achieving business agility .
	2.6.3	Able to facilitate decision-making by using the techniques of expert systems .
	2.6.4	Able to explain the importance of demand and supply planning in the supply chain , identify the decisions that are part of the planning process and discuss the tools that supply chain managers can be used for planning .
Managerial Skills	3.1.1	Able to facilitate decision making by using modeling and simulation techniques.
	3.1.2	Able to develop business analytics solutions using software.
	3.1.3	Able to make decisions based on knowledge of sustainable development.
	3.2.1	Able to provide alternative solutions to problems related to the research topic.
	3.2.2	Have a leadership stance to lead and led in the research team.
	3.2.3	Have a creativity in providing the alternative solutions.
	3.2.4	Able to communicate both orally and in writing.
Attitudes and Values Skills	4.1.1	Uphold the religious norms, especially in terms of honesty and devotion to God.
	4.2.1	Know the professional ethics.
	4.2.2	Have moral and personality both in completing the tasks.
	4.3.1	Able to produce the research that must has contributed to the value of community, nation, and state.

	4.4.1	Mampu bekerjasama dalam lintas disiplin ilmu serta memiliki kepekaan sosial dan kepedulian yang tinggi terhadap masyarakat dan lingkungannya
	4.5.1	Mampu mengapresiasi pencapaian orang lain tanpa memandang latar belakang budaya, kepercayaan, dan agama
	4.6.1	Siap menerima sanksi sosial atau hukum terhadap setiap pelanggaran norma agama, hukum, dan adat
	4.6.2	Mampu memberikan rekomendasi perbaikan sistem yang dapat mencegah bentuk kecurangan (fraud) di dalam organisasi

DAFTAR COURSE

No.	Code	Course Name	Credits
SEMESTER I			
1	KS142301	Project and Change Management	3
2	KS142302	Software Requirement Management	3
3	KS142303	Network and Business Telecommunication	3
4	KS142304	Database Management Systems	3
Total of Credits			12
SEMESTER II			
1	KS142305	Causal Analysis Techniques and Structured Equation Modeling	3
2	KS142306	IT/IS Strategy and Policy	3
3	KS142307	Information Systems Research Methodology	3
4		<i>Electives</i>	3
5		<i>Electives</i>	3
Total of Credits			15
SEMESTER III			
1	KS142501	Thesis	6
2		<i>Electives</i>	3
3			
Total of Credits			9

ELECTIVES

No.	CODE	COURSE NAME	CREDITS
1	KS142401	Topic in Data Mining	3
2	KS142402	Topic in System Modeling and Simulation	3
3	KS142403	Topic in Enterprise System	3
4	KS142404	Topic in Service Oriented Architecture	3
5	KS142405	Topic in Embadded System	3
6	KS142406	Topic in Systems and Network Security	3
7	KS142407	Topic in Information Technology Governance	3
8	KS142408	Topic in Performance Measurement for Information Technology	3
9	KS142409	Topic in Information Technology Adoption	3

CURRICULUM SYLLABUS

COURSE	KS142301 : Project and Change Management
	Credits : 3
	Semester : 1

COURSE DESCRIPTION

Project Management Software is subject contained a project planning and management of information technology by considering several factors such as: 1) The speed of change in information technology 2) innate nature of software that are difficult to observe by naked eye 3) The pressure to add features and business functions in the system 4) The difficulty of handling changes in the organization when implementing IT

DEPARTMENT LEARNING OUTCOMES

1.1.1	Able to explain the real similarities and differences between IT projects and project types
1.1.2	Able to identify IT project risks and develop risk mitigation strategies .
3.1.2	Able to develop business analytics solutions using software

COURSE LEARNING OUTCOMESS

Students are expected to have the following competencies:

- Able to explain the real similarities and differences between IT projects and project types.
- Develop the project charter
- Develop a work breakdown structure for IT projects
- Estimate the resources and assign task durations
- Establish task interdependence
- Creating a network diagram
- Identify IT project risks and develop risk mitigation strategies
- Conduct post-project audit
- Identify and avoid escalation of IT project
- Overcoming a troubled IT project escalation

SUBJECT OF DISCUSSIONS

- Similarities and Differences Between IT and Other Project Types
- Project Integration Management
- Making the Business Case for IT Projects
- Project Initiation Process
- Scope of Project Management
- Evaluate Alternatives and Choosing Action Steps
- Project Time Management
- Determine Project Goals are Realistic

- Managing Project Cost and Quality
- Managing human resources
- Manage communication
- Managing IT projects in-house
- Project risk management
- The process of project planning
- Managing projects involving software options
- Project Implementation Process
- Managing projects involving the application of ERP software
- Process Control Project
- Managing Outsourced IS Projects
- Project Closure Process
- Post-Project Audit
- Avoiding IT project escalation
- De-escalation Troubled IT projects. Manage the "mum effect" or reluctance to transmit bad news in the project

PREREQUISITES

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REFERENCES

- Schwalbe.,Kathy, "Information Technology Project Management Sixth Edition", Course Technology Cengage Learning, USA 2011
- Jones, M.M., and McLean, E.R. "Management Problems in Large-Scale Software Development Projects," *Industrial Management Review*, Vol. 11, No. 3, Spring 1970, pp. 1-15.
- Gibbs, W.W. "Software's Chronic Crisis," *Scientific American*, Vol. 273, No. 3, September 1994, pp. 86-95.
- Kull, D. "Anatomy of a 4GL Disaster," *Computer Decisions*, February 11, 1986, pp. 58-65.
- Capers, R.S., and Lipton, E. "Hubble Error: Time, Money and Millionths of an Inch," *Academy of Management Executive*, Vol. 7, No. 4, 1993, pp. 41-57.
- Sauer, C., Liu, L., and Johnston, K. "Where Project Managers are Kings," *Oxford University Working Paper*, RDP 99/3, 1999.
- Drummond, H., "The Politics of Risk: Trials and Tribulations of the Taurus Project," *Journal of Information Technology*, Vol. 11, 1996, pp. 347-357.
- Keil, M. and Montealegre, R. "Cutting Your Losses: Extricating Your Organization When a Big Project Goes Awry," *Sloan Management Review*, Vol. 21, No. 3, Spring 2000, pp. 55-68.
- Oz, E. "When Professional Standards are Lax: The CONFIRM Failure and Its Lessons," *Communications of the ACM*, 37, 10, October 1994, pp. 29-36.
- Smith, H.J., and Keil, M., "Mum's the Word," *Beyond Computing*, Vol. 4, No. 4, June 1995, pp. 16-17.
- Keil, M., and Robey, D. "Blowing the Whistle on Troubled Software Projects," *Communications of the ACM* (forthcoming).

ADDITIONAL REFERENCES
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COURSE	KS142302 : Software Requirement Management
	Credits : 3 Creditss
	Semester : 1

COURSE DESCRIPTION

This course is a course that can provide an overview and guidance in conducting needs analysis as input in developing an object-based model to utilize certain software.

DEPARTMENT'S LEARNING OUTCOMES

1.2.3	Able to use active object-oriented approach in addressing the needs of software
2.3.1	Ability to provide feedback or suggestions on the business or organization in order to improve organizational performance
3.2.3	Have a creativity in providing the alternative solutions

COURSE LEARNING OUTCOMESS

- Students can understand the role and importance of requirements analysis and specification
- Students can gain knowledge of system modeling techniques
- Students can understand the basic principles of object-based approach
- Students can learn to use Computer Aided Software Engineering
- Students can learn to recognize and overcome the obstacles in the analysis requirements
- Students can understand the role of requirements management in agile software development
- Students may be aware of the ideas that appear relevant to the management requirements

SUBJECT OF DISCUSSION

- Introduction to Software Requirement Specification
- Rational Unified Process and sewing process
- Basic Object Oriented
- Object Modeling
- Object-Oriented Methodology
- Analysis of Patterns
- Agile Software Development
- eXtreme Programming
- Modeling Dynamics: State diagram, sequence / collaboration diagram

PREREQUISITES

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REFERENCES
<ul style="list-style-type: none">• Craig Larman, Applying UML and patterns, Prentice-Hall, Englewood Cliffs, NJ, 1998• Rambaugh, J., M. Blaha, W,. et al, Object Oriented Modeling and Design, Prentice-Hall, 1991. (chapters 3 & 4)
ADDITIONAL REFERENCES
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COURSE	KS142303 : Network and Business Telecommunication
	Credits : 3 sks
	Semester : 1

COURSE DESCRIPTION

This course contains knowledge and smart study case about the use of information technology with the emphasis of the integration flexibility understanding and managed policies to achive organizational goals.

DEPARTMENT LEARNING OUTCOME

1.1.3	Able to understand the basic knowledge of information technology -based system integration .
1.2.1	Able to design and analyze network technology to meet the needs of the company .
2.1.2	Able to take advantage of the architectural firm 's role in achieving business agility
2.3.1	Ability to provide feedback or suggestions on the business or organization in order to improve organizational performance .
2.6.2	Able to take advantage of the architectural firm 's role in achieving business agility
3.2.3	Have a creativity in providing the alternative solutions

COURSE LEARNING OUTCOMES

- Mahasiswa mampu berperan sebagai pemimpin dalam membantu perusahaan memanfaatkan teknologi jaringan dan telekomunikasi untuk mencapai tujuannya.
- Mahasiswa memiliki pandangan yang luas tentang teknologi jaringan, arsitektur, dan manajemen yang dibutuhkan untuk memenuhi kebutuhan bisnis.
- Mahasiswa mampu memahami kelemahan dan kekuatan berbagai macam arsitektur jaringan dan telekomunikasi, data, dan perangkat lunaknya.
- Mahasiswa mampu memahami teknologi dan isu managerial yang berhubungan dengan interoperability.
- Mahasiswa mampu memahami strategi produk dari vendor Hardware dan Software Jaringan serta Telekomunikasi.
 - Students are able to act as a leader in helping companies take advantage of computers and information technology to achieve its objectives.
 - Students have a wide view of network technology, architecture, and management needed to meet business needs
 - Students can explain the pros and cons of various network architecture, data and the software within

<ul style="list-style-type: none"> • Student are able to understand the interoperability issues imposed by the technologies
SUBJECT OF DISCUSSION
<ul style="list-style-type: none"> • Introduction to Networking (Data Communication Terminology, Model TCP / IP) • High Speed Access • Local Area Networks I (Ethernet and its variations) • Local Area Network 2 (Token Ring, FDDI, ATM, LAN) • Wireless and Wireless moves. • Wide Area Networks: Part 1 (Circuit Switching) • Wide Area Networks: Part 2 (Packet Switching) • Modeling Network • Design of network traffic • Inter-networking • Protocols TCP / IP • IP Version 6, VoIP • Network Management, Network Security and the future of the network
PREREQUISITES
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REFERENCES
<ul style="list-style-type: none"> • Data Communications, Stallings, Prentice Hall (Latest edition) • Business Data Communications, Stallings, Prentice Hall (Latest Editions) • Business Data Communications and Networking, Panko, 2002, Prentice Hall. • James D. McCabe, "Network Analysis, Architecture, and Design", Morgan Kaufmann Publishers, USA, 2007.
ADDITIONAL REFERENCES

COURSE	KS142304 : Database Management Systems
	Credits : 3 sks
	Semester : 2

COURSE DESCRIPTION

This course provides the basics of relational, object-oriented database systems, and techniques in developing database applications using DBMS (Access, MySQL, etc)

DEPARTMENT LEARNING OUTCOMES

1.2.2	Ability to manage databases and database technology can review the latest technology
2.1.1	Ability to provide business recommendations to a set of business data
3.1.2	Able to develop business analytics solutions using software

COURSE LEARNING OUTCOMES

- Students can understand the basics of relational, object-oriented database systems, and distributed including: data model, database architecture, and database manipulation
- Students can understand the theory and techniques in developing database applications and is able to demonstrate the ability to build a database using a DBMS (Access, MySQL, etc)
- Students can manage a database system
- Students can understand the new developments and trends in the database.

SUBJECT OF DISCUSSIONS

- Introduction to basis data relational
- XML data
- Relational Algebra
- SQL Operation (Select, Update, Delete, Where, AND, OR)
- Normalization, Boycodd
- Querying XML
- Unified Modeling Language (UML)
- Indexes
- Constraints and Trigger
- Transactions
- Views
- Authorization
- Recursion in SQL
- Online Analytical Processing (OLAP)
- NOSQL Systems

PREREQUISITES

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REFERENCES

- Elmasri, R. and S. B. Navathe: Fundamentals of Database Systems (4th Ed.), Addison Wesley, 2004.
- Connolly, Thomas and Carolyn Begg: Database Systems (4th Ed.). Addison-Wesley, 2005.

ADDITIONAL REFERENCES

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COURSE	KS142305 : Causal Analysis Techniques and Structured Equation Modeling
	Credits : 3
	Semester : 2

COURSE DESCRIPTION

This course describes a set of statistical techniques to develop models and test the relationships between variables are complex relationships both recursive and non-recursive to obtain an overall picture of the overall model. These relationships can be established between one or more dependent variables with one or more independent variables.

DEPARTMENT LEARNING OUTCOMES

1.2.4	Ability to develop qualitative research and quantitative research creatively
2.3.1	Ability to provide feedback or suggestions on the business or organization in order to improve organizational performance
3.2.1	Ability to provide alternative solutions to problems related to the research topic

COURSE LEARNING OUTCOMES

- Students are able to understand the concept of terstruktur equation modeling and regression as well as the applications required to conduct research and explain the causal relationship (cause and effect)
- Students are able to test the validity and reliability of the instrument (confirmatori factor analysis)
- Students are able to test the model of the relationship between variables (path analysis)
- Students are able to develop a structural model

SUBJECT OF DISCUSSIONS

- Endogeneity and Causality
- The topics in further regression, such as interpreting and testing the interaction models, errors-in-variables models, instrumental variable estimator, deterministic and random models, polynomial regression and simultaneous equation models.
- Confirmatory factor analysis, latent variable models, models of high order, multisample models, growth curve models.

PREREQUISITES

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REFERENCES

- Becker, T. E. (2005). Potential Problems in the Statistical Control of Variables in Organizational Research: A Qualitative Analysis With Recommendations. *Organizational Research Methods*, 8(3), 274-289.
- Byrne, B. M. (2012). *Structural equation modelling with Mplus*. New York: Routledge
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1-55.
- Kline, R. B. (2010). *Principles and practice of structural equation modeling* (4th ed.). New York: Guilford Press.
- Loehlin, J. C. (1992). *Latent variable models: An introduction to factor, path, and structural analysis* (2nd ed.). Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Olatunji, B. O., Williams, N. L., Tolin, D. F., Abramowitz, J. S., Sawchuk, C. N., Lohr, J. M., et al. (2007). The disgust scale: Item analysis, factor structure, and suggestions for refinement. *Psychological Assessment*, 19(3), 281-297.

ADDITIONAL REFERENCES

- Antonakis, J., Bendahan, S., Jacquart, P., & Lalive, R. (2010). On making causal claims: A review and recommendations. *The Leadership Quarterly*, 21(6). 1086-1120.
- Jurnal Internasional dan artikel terkait dengan Teknik Analisis Sebab Akibat dan Pemodelan Persamaan Terstruktur

COURSE	KS142306 : IT/IS Strategy ad Policy
	Credits : 3
	Semester : 2

COURSE DESCRIPTION

This course gives an overview of the process of developing a strategic plan for IS / IT effectively by using the tools and techniques to formulate policies that supports the organization's business strategy

DEPARTMENT LEARNING OUTCOMES

1.1.4	Able to develop implementation and integration strategies that exploit the ability to process and technical organization of an organization
2.2.1	Able to understand the basic components of Information Systems
2.3.1	Ability to provide feedback or suggestions on the business or organization in order to improve organizational performance
3.2.3	Having creativity in providing alternative solutions

COURSE LEARNING OUTCOMES

- Students are able to explain the importance of IS / IT in a strategic perspective
- Students are able to determine the process of developing a strategic plan / IT effective
- Students are able to formulate a strategy SI through the use of tools and techniques for the analysis of the development of the strategic plan of the IS / IT
- Students are able to organize the formulation of strategies SI
- Students are able to organize the availability of IT resources
- Students are able to prepare a policy setting IT infrastructure and services needed to move to strategic IS / IT new
- Students are able to work together, think creatively and analytically in order to win the business competition organization

SUBJECT OF DISCUSSIONS

- The role of IS / IT from a strategic point
- The concept of business strategy and its implications for IT strategy
- Development of IT strategies effective
- Analysis of strategic for IS / IT
- Determination of the Information system strategy for company
- Management of a portfolio of applications
- Organizing and availability of IT resources
- Investment management for IT
- Strategies for the management of information and knowledge
- Management of infrastructure for IT

PREREQUISITES
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REFERENCES
<ul style="list-style-type: none">• Ward, John. Strategic Planning for Information System, John-Wiley 2002• Tozer, Edwin. Strategic IS/IT Planning, Butterworth-heinemann 1996
ADDITIONAL REFERENCES
<ul style="list-style-type: none">• International Journals and articles related to "IS/IT Strategy and Policies"

COURSE	KS142307 : Information Systems Research Methodology
	Credits : 3
	Semester : 2

COURSE DESCRIPTION

This course provides guidance for students in conducting quantitative and qualitative research to help students develop an understanding of how the data relates to the knowledge and respect the ethical issues inherent in research practice.

DEPARTMENT LEARNING OUTCOMES

1.2.4	Able to develop qualitative research and quantitative research creatively
2.4.1	Able to conduct research independently or work in teams
3.2.1	Being able to provide alternative solutions to problems related to the research topic
3.2.2	Having a leadership stance in the lead and led the research team

COURSE LEARNING OUTCOMES

Provide students with an introduction to the various types of quantitative research methods, qualitative research and statistical techniques consist of two main parts: 1) a method for quantitative research and, 2) quantitative statistical techniques to analyze the data.

Provide an overview of the use of qualitative methods in the study of diffusion, development, and use of information as well as the application of information technology and management.

SUBJECT OF DISCUSSIONS

- Introduction: Social Research Methods
- Basic Research, Theory and Measurement
- Defining the Research Problem
- Preparing Research
- Experiments and Design of Experiments
- Questionnaire Survey and Data Collection
- Probability and Sampling
- Introduction to STATA and Working with Structured Data
- Recoding Data for Analysis
- Univariate Analysis
- Univariate Statistics and Central Tendency
- Working with Numeric Data
- Bivariate Statistics: Correlation and t-test standards
- Chi-Square: Analyzing Data Nominal
- Analysis of Variance (two or more means)

- Linear Regression
- Multivariate Linear Regression
- Advanced Regression Topics
- Regression Diagnostics
- Logistic Regression
- Understanding Qualitative Research
- Components of the Research Process
- Sampling and "Corpus Construction"
- Observation, Participation and ethnography
- Analysis of Qualitative Research
- Writing Qualitative Research
- Interview Techniques
- The importance of the document analysis research "Field-based"
- Role of Image Analysis in Field-based research
- Ethics of writing
- Evaluating Qualitative Research
- Ethnographic Research to design technology
- The role of technology in the recording of the data collection phase

PREREQUISITES

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REFERENCES

- Bernard, Russell H. Social Research Methods: Qualitative and Quantitative Approaches.
- Hamilton, Lawrence. Statistics with STATA 9.
- John Lofland and Lyn Lofland, Analyzing Social Settings: A Guide to Qualitative Observation and Analysis, 4th edition

ADDITIONAL REFERENCES

COURSE	KS142401 : Topic in Data Mining
	Credits : 3 sks
	Semester : Odd/Even

COURSE DESCRIPTION

This course gives an overview of the techniques in data mining to discover patterns and make predictions on data that is structured or semi-structured.

DEPARTMENT LEARNING OUTCOMES

1.2.3	Able to use active approach in addressing the needs of object-oriented software
2.6.3	Able to facilitate decision-making by using the techniques of expert systems
3.1.2	Able to develop business analytics solutions using software

COURSE LEARNING OUTCOMES

Students can use the techniques in data mining to discover patterns and make predictions on data that is structured or semi-structured

SUBJECT OF DISCUSSIONS

- Introduction to data mining and related technologies
- Data warehouse and OLAP
- Data preprocessing (data cleaning, the data transformation, data reduction, dicreteization)
- Data Mining knowledge representation
- Attribute-oriented analysis
- Association rules
- Classification
- Prediction
- Clustering
- Evaluating data mining algorithms have learned

PREREQUISITES

REFERENCES

Ian H. Witten and Eibe Frank, Data Mining: Practical Machine Learning Tools and Techniques (Second Edition), Morgan Kaufmann, 2005, ISBN: 0-12-088407-0.

ADDITIONAL REFERENCES

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COURSE	KS142402 : Topic in System Modeling and Simulation
	Credits : 3
	Semester : Odd/Even

COURSE DESCRIPTION

This course contains concepts, overview and direction in formulating, modeling, and simulating the discrete system and continuous system to analyze policies and strategies, to manage and improve organizational performance.

DEPARTMENT LEARNING OUTCOMES

1.1.4	Capable of developing and implementing strategies for the integration of processes which utilize organizational and technical capabilities of an organization
1.2.4	Able to develop qualitative research and quantitative research creatively
2.1.1	Being able to provide recommendations on a set of business data
2.3.1	Being able to give feedback or suggestions on the business or organization in order to improve organizational performance
3.1.1	Able to facilitate decision-making by using modeling and simulation techniques

COURSE LEARNING OUTCOMES

- Students are able to formulate, model and simulate the system which includes the discrete system and continuous system to provide inputs in formulating policies that can enhance organizational performance
- Students are able to understand and analyze the performance of organizations concerned with the internal structure and operational policies, customers, competitors, and suppliers.
- Students are able to explore strategic issues such as sales fluctuate; production and income; market growth and stagnation; diffusion of new technologies; the use and reliability of forecasts; and rationality of business decision making.
- Students are able to identify and handle situations where policy intervention is needed to accommodate unexpected reactions and see their impact on the organization's systems.
- Students have experience in developing and testing a computer simulation model with input settings and diverse processes through specific software.

SUBJECT OF DISCUSSIONS

- Introduction to simulation
- Purpose Simulation
- Advantages and Disadvantages of simulation models
- Problem Formulation
- Definition and Classification System

- Verification and Validation Model
- Introduction to Discrete System Simulation
- Example Applications Discrete System Simulation
- Introduction to Continuous System Simulation (Dynamic)
- Build Theory with Causal Loop Diagram (CLD)
- Mapping CLD becomes Structure Flowchart (Stock and Flow)
- Examples of Continuous Application Model System (Dynamic)

PREREQUISITES

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REFERENCES

- Chung, Christopher (ed.) Simulation modeling - handbook a practical approach, CRC Press, 2004
- Altiok, Tayfur and Benjamin Melamed. Simulation Modeling and Analysis with ARENA. Elsevier, Inc., 2007. ISBN 978-0-12-370523-5
- John Sterman. Business Dynamics: Systems thinking and modeling for a complex world. McGraw Hill. ISBN 0-07-231135-5.
- **Suryani, E.**, Pemodelan dan Simulasi, **Graha Ilmu**, 2005.

ADDITIONAL REFERENCES

1. **Suryani, E.**, System Dynamics Framework, **ITS-Press**, 2012.
2. **Barlas, Y.**, Multiple tests for validation of system dynamics type of simulation models, European Journal of Operational Research 42 (1989) pp. 59-87

COURSE	KS142403 : Topic in Enterprise System
	Credits : 3
	Semester : Odd/Even

COURSE DESCRIPTION

Students are able to understand the role and be able to manage the utilization Systems Corporation in improving organizational performance.

DEPARTMENT LEARNING OUTCOMES

1.1.3	Able to understand the basic knowledge of information technology-based systems integration
2.3.1	Ability to provide feedback or suggestions on the business or organization in order to improve organizational performance
2.6.1	Able to understand various management decision support system
2.6.4	Able to explain the importance of demand and supply planning in the supply chain, identify decisions that are part of the planning process and discuss the tools that supply chain managers can be used for planning
3.2.1	Ability to provide alternative solutions to the problems related to the research topic.

COURSE LEARNING OUTCOMES

- Students can understand the evolution of the system of corporate
- Students understand the corporate systems architecture
- Students can explain the corporate system development life cycle
- Students are able to explain the strategy of implementation of corporate systems
- Students are able to describe the operation and post-implementation of corporate systems
- Students can explain the phases of program and project management systems implementation of corporate
- Students understand global issues, ethical funds in the security management system of corporate
- Students can understand the role of corporate systems such as ERP, SCM and CRM in automating business processes (business electronically)
- Students are able to process transactional data from corporate systems into analytical information, tactical and strategic to improve organizational performance

SUBJECT OF DISCUSSIONS

- Introduction to Corporate Systems
- Evolution of Corporate Systems
- Integration System
- Corporate System Architecture

<ul style="list-style-type: none"> • The life cycle development • Implementation Strategy • Operation and post-implementation • Program and Project Management • Global, Ethics and Security Management • Types of Corporate Systems: ERP, SCM and CRM • Processing of transactional data into information Systems Corporation analytical, tactical and strategic
PREREQUISITES
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REFERENCES
<ul style="list-style-type: none"> • Motiwalla, Luvai dan Thompson, Jeffrey, <u>Enterprise Systems for Management (2nd Edition)</u>, Pearson Education Limited, Essex, 2014. • Giachetti, Ronald. E., <u>Design of Enterprise Systems: Theory, Architecture, and Methods</u>, CRC Press, Taylor and Francis Group, Boca Raton, 2010. • Kumar, S., Esteves, J. and Bendoly, E., <u>Handbook of Research in Enterprise Systems</u>, SAGE Publications India Pvt Ltd., New Delhi, 2011. • Weske, Mathias, <u>Business Process Management: Concepts, Languages, Architectures</u>, Springer-Verlag, Berlin, 2007.
ADDITIONAL REFERENCES
<ul style="list-style-type: none"> • Monk, E., and Wagner, B., <u>Concepts in Enterprise Resource Planning 4th Ed.</u>, Course Technology, Cengage Learning, 2013. • Andersen, Bjorn, <u>Business Process Improvement Toolbox</u>, Milwaukee, ASQ Quality Press, Wisconsin, 1999 • Anupindi dkk, <u>Managing Business Process Flows</u>, Prentice Hall, 1999 • Laudon, Kenneth C. & C. G. Traver, <u>e-Commerce; Business, Technology, Society</u>, 3th ed., Pearson, Prentice Hall, 2007. • Chorafas, Dimitris N, <u>Integrating ERP, CRM, Supply Chain Management, and Smart Materials</u>, CRC Press, 2001.

COURSE	KS142404 : Topic in Service Oriented Architecture
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	Credits : 3 sks
	Semester : Odd / Even

COURSE DESCRIPTION

This course will explore the concepts, principles, and state-of-the-art methods in enterprise architecture, including architectural styles, architecture description language (ADL), the connector software, dynamism in architecture, and architecture-based testing and analysis.

DEPARTMENT LEARNING OUTCOMES

1.1.3	Able to understand the basic knowledge of information technology-based systems integration
1.2.3	Able to use active approach in addressing the needs of object-oriented software
2.3.1	Ability to provide feedback or suggestions on the business or organization in order to improve organizational performance
2.1.2	Able to take advantage of enterprise architecture role in achieving business agility

COURSE LEARNING OUTCOMES

Students are able to understand and develop a service-oriented architecture.

SUBJECT OF DISCUSSIONS

- Origin enterprise architecture
- Introduction to Enterprise Architecture
- The scope of enterprise architecture: a case study Canonical
- The scope of enterprise architecture: a case study analysis of C4
- The scope of enterprise architecture: Distributed flight simulation analysis of case studies
- Software Architecture: People and teams
- Architecture Description Language (ADL)
- Architecture Domain-specific software (DSSA)
- Service Oriented Architecture (SOA)
- Software connectors
- Dynamism in enterprise architecture
- Architecture-based testing and analysis
- Development of the agile
- From architecture to design: Overview of UML's role in the enterprise architecture
- Software for interconnection
- Middleware - JavaBeans and Enterprise JavaBeans

PREREQUISITES

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REFERENCES

Jeanne W. Ross , Peter Weill , David Robertson , “Enterprise Architecture As Strategy: Creating a Foundation for Business Execution “ , 2006

ADDITIONAL REFERENCES

COURSE	KS142405 : Topic in Embadded System
	Credits : 3
	Semester : Odd/Even

COURSE DESCRIPTION

This course provides knowledge on embedded systems (embedded systems), include how the constraints (constraint) and limitations (Limitation) in the embedded system, how to design an embedded system, and how to realize an embedded system of design have made. This course also provides basic topics in embedded systems that can be developed further.

DEPARTMENT LEARNING OUTCOMES

1.1	Able to utilize technological innovations to implement, develop, and produce innovative work in the field of information technology / information system.
2.1	Ability to bridge the gap between business needs and the latest technology so as to enhance the competitiveness of business enterprises, evaluate the performance of systems based on information technology by considering elements of novelty and usefulness.
2.3	Mastering the insight to see the problems in the system and make multidimensional information as a research topic with a multidisciplinary approach.
2.6	Able to understand the overall condition of the existing implementation of information technology systems in Indonesia, and search for best practice implementation of IT-based systems in the world by using a multidisciplinary approach.

COURSE LEARNING OUTCOMES

- Students are expected to develop knowledge related to one / more topics in embedded systems through research and development to produce a theory, a model, or a proven platform.
- Students are expected to solve the problems of business / organization use information technology to implement the embedded system

SUBJECT OF DISCUSSIONS

- Understanding, restrictions, limitations, and advantages of Embedded Systems.
- The basic concept design of Embedded Systems.

<ul style="list-style-type: none"> • Low Performance Computing Embedded Systems: concepts, tools, and case studies • High Performance Computing Embedded Systems: concepts, tools, and case studies • Recent studies topics Embedded Systems
PREREQUISITES
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REFERENCES
<ul style="list-style-type: none"> • Tammy Noergaard (2012), <i>Embedded Systems Architecture, Second Edition: A Comprehensive Guide for Engineers and Programmers</i>, Newnes. • David E. Simon (1999), <i>An Embedded Software Primer</i>, Addison-Wesley Professional. • Frank Vahid (2001), <i>Embedded System Design: A Unified Hardware/Software Introduction</i>, Wiley. • Elecia White (2011), <i>Making Embedded Systems: Design Patterns for Great Software</i>, O'Reilly Media. • Jeremy Blum (2013), <i>Exploring Arduino: Tools and Techniques for Engineering Wizardry</i>, Wiley. • Simon Monk (2011), <i>Programming Arduino Getting Started with Sketches</i>, McGraw-Hill. • Simon Monk (2013), <i>Raspberry Pi Cookbook</i>, O'Reilly Media. • Matt Richardson (2013), <i>Getting Started with Raspberry Pi</i>, Maker Media Inc.
ADDITIONAL REFERENCES
<ul style="list-style-type: none"> • Donald Norris (2013), <i>Raspberry Pi Projects for the Evil Genius</i>, McGraw-Hill. • Andrew Robinson (2013), <i>Raspberry Pi Projects</i>, Wiley. • Tero Karvinen (2014), <i>Make: Sensors: A Hands-On Primer for Monitoring the Real World with Arduino and Raspberry Pi</i>, Maker Media Inc.

COURSE	KS142406 : Topic in Systems and Network Security
	Credits : 3
	Semester : Odd/Even

COURSE DESCRIPTION

Students gain a thorough understanding of the things that threaten the security system company / organization and can take action to prevent it with the purpose of maintaining business continuity, minimize business risk, and maximize return on investments and business opportunities.

DEPARTMENT LEARNING OUTCOMES

1.1.3	Able to understand the basic knowledge of information technology-based system integration.
1.2.1	Able to design and analyze network technology to meet the needs of the company.
2.1.2	Able to take advantage of enterprise architecture role in achieving business agility.
2.3.1	Ability to provide feedback or suggestions on the business or organization in order to improve organizational performance.
2.6.2	Able to take advantage of enterprise architecture role in improving organizational performance.
3.2.3	Having creativity in providing alternative solutions.
4.6.2	Ability to provide recommendations for improvement that the system can prevent a form of cheating (fraud) in the organization.

COURSE LEARNING OUTCOMES

- Able to understand the importance of securing systems and networks owned by the company / organization.
- Ability to implement a set of rules, which includes policies, standards, procedures, organizational structures and software and hardware functions.
- Ability to analyze the characteristics of information security standards and guidelines such as ISO 17799 and ISO 27000 series that can be used for security systems company / organization.
- Ability to synthesize and evaluate how to create an environment that supports enterprise systems and network security.
- Ability to develop relevant knowledge and Network Security system through research

to generate new theories or models.

SUBJECT OF DISCUSSIONS

- Cryptography
- Security Architecture dan Design
- Physical (Environmental) Security
- Security Management Planning
- ISO/IEC 17799 & ISO/IEC 27000 Series
- Business Continuity Planning dan Disaster Recovery Planning
- Telecommunications dan Network Security
- Application Security
- Security of Wireless Networks and Mobile Devices
- Cyber Crime & Cyber Security
- Digital Forensics
- Cyber Law - Compliance dan Investigation
- Ethics
- Recent studies topics System and Network Security

PREREQUISITES

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REFERENCES

- Whitman, ME and Mattord, HJ. Principles of Information Security, 3th edition. Thomson Courses Technology. 2007.
- Harold F. Tipton, Mick Krause, Information Security Management Handbook, Auerbach Publication, 2007.
- Merrill Warkentin, Rayford B. Vaughn, Enterprise Information Systems Assurance and System Security: Managerial and Technical Issues, Idea Group Inc., 2006.
- Britz, M., Computer Forensics and Cyber Crime, 3e. NJ: Prentice Hall, 2013.
- ISO/IEC 27001:2005, Information Technology - Security Techniques - Information Security Management Systems – Requirements.
- ISO/IEC 17799 dan ISO/IEC 27002:2007, Information Technology - Security Techniques - Code of Practice for Information Security Management.

ADDITIONAL REFERENCES

- Ronald L. Krutz dan Russell D. Vines, The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, John Wiley&Sons, 2001.
- Ronald L. Krutz and Russell Dean Vines, The CISM Prep Guide: Mastering the Five Domains of Information Security Management, John Wiley & Sons, Canada, 2003.

COURSE	KS142407 : Topic in Information Technology Governance
	Credits : 3
	Semester : Odd/Even

COURSE DESCRIPTION

This course provides knowledge of information technology governance, including how to align business and information technology (IT-Business Strategic Alignment), how to ensure the benefits of information technology can actually be realized and enjoyed (IT Value Delivery), how to manage information technology risks (Risk Management), how to manage the resources of information technology (IT resource Management) and how to measure the performance of information technology (IT performance Measurement).

DEPARTMENT LEARNING OUTCOMES

2.1	Ability to bridge the gap between business needs and the latest technology so as to enhance the competitiveness of business enterprises, evaluate the performance of systems based on information technology by considering elements of novelty and usefulness.
2.3	Mastering the insight to see the problems in the system and make multidimensional information as a research topic with a multidisciplinary approach.
2.6	Able to understand the overall condition of the existing implementation of information technology systems in Indonesia, and search for best practice implementation of IT-based systems in the world by using a multidisciplinary approach.

COURSE LEARNING OUTCOMES

- Students are expected to be able to develop knowledge related to one / more domains of information technology governance (IT-Business Strategic Alignment, IT Value Delivery, Risk Management, IT Resource Management, and IT Performance Measurement) through research to result in the development of theories, models, or frameworks tested working.
- Students are expected to solve problems by applying information technology management frameworks and best practices of information technology governance.
- Students are expected to analyze gaps in knowledge of governance studies information technology / information systems that already exist and formulating potential research topics governance of information technology / information systems.

SUBJECT OF DISCUSSIONS
<ul style="list-style-type: none"> • Understanding of IT governance, IT management, and IT governance domain. • IT-Business Strategic Alignment: concepts, frameworks / tools, and case studies • IT Value Delivery: concepts, frameworks / tools, and case studies • Risk Management: concepts, frameworks / tools, and case studies • IT Resource Management: concepts, frameworks / tools, and case studies • IT Performance Measurement: concepts, frameworks / tools, and case studies • Recent studies governance topics
PREREQUISITES
REFERENCES
<ul style="list-style-type: none"> • Rianarto Sarno (2009), <i>Strategi Sukses Bisnis dengan TI Berbasis Balanced Scorecard dan COBIT</i>, ITS Press. • Nan Si Shi & Gilbert Silvius (2010), <i>Enterprise IT Governance, Business Value and Performance Measurement</i>, IGI Global.
ADDITIONAL REFERENCES
<ul style="list-style-type: none"> • Geoff Harmer (2014), <i>Governance of Enterprise IT based on COBIT 5: A management guide</i>, itgp.

COURSE	KS142408 : Topic in Performance Measurement for Information Technology
	Credits : 3
	Semester : Odd/Even

COURSE DESCRIPTION	
This course makes the study of the business value of the use and integration of information technology so as to determine the value of the real contribution of information technology in achieving the organization's objectives or performance.	
DEPARTMENT LEARNING OUTCOMES	
1.1.4	Able to develop implementation and integration strategies that exploit the ability to process and technical organization of an organization.
1.2.4	Ability to develop qualitative research and quantitative research creatively.
2.1.1	Ability to provide business recommendations to the set of business data.
2.3.1	Ability to provide feedback or suggestions on the business or organization in order to improve organizational performance
COURSE LEARNING OUTCOMES	
<ul style="list-style-type: none"> • Students can understand the role and value of information technology in a competitive business environment. • Students can analyze the processes of information technology and business alignment • Students are able to identify potential failure of information technology to achieve business objectives and provide solutions. • Students can analyze the contribution of the business value of IT usage 	
SUBJECT OF DISCUSSIONS	
<ul style="list-style-type: none"> • Business Driven Information Technology / Systems. • Information Management for Business Initiatives • Creation of collaborative-partnership in Business • Transformation of IT Organisation • Factors that affect the core of the success of the role or the integration of IT in the Organization / Business • Human, Cultural and Organizational Behavior as a basis for the integration of IT and business • Key Business Process alignment of IT to Business Objectives Purpose • Resources IT, managing IT procurement, IT compatibility, IT Architecture • Resource-Based View of information technology • Ability Based IT and IT Capability to Organizational Core Competencies • Contribution of IT in the Business or Organization • Methods of measurement, the value appointment of IT, the successful integration of IT and Business Value of IT • Contradiction IT productivity, measurement and solutions. 	

REFERENCES
<ul style="list-style-type: none"> • Stephen Haag, Paige Baltzan, Amy Philips, Business Driven Technology, McGraw Hill Irwin, 2008 • Steve Benson and Craig Standing, Information System, A Business Approach, 2nd Edition, John Wiley and Sons, 2005 • Paige Baltzan and Amy Phillips, Business Driven Information System, 2nd Edition, McGraw Hill Irwin, 2009 • McKeen, J. D. and Smith, H.A., Making IT Happen: Critical Issues in IT Management, John Wiley Series in Information Systems, 2003 • Weill, P., and M. Broadbent. Leveraging the New Infrastructure: How Market Leaders Capitalize on Information Technology. Harvard Business School Press, 1998
ADDITIONAL REFERENCES
<ul style="list-style-type: none"> • Journals related IT-Business integration (IT Strategic Alignment) and the Business Value of IT (IT Business Value)

COURSE	KS142409 : Topic in Information Technology Adoption
	Credits : 3
	Semester : Odd/Even

COURSE DESCRIPTION

This course provides knowledge of how the process of a technology (especially information technology) can be accepted by the target users, both as individuals and communities; attributes of the technology that determines the speed of the adoption process; human character technology users; factors of cognitive, affective, physical, social and physical environment that influence technology adoption; individual motivations in using a technology; and strategies affecting the acceptance of a technological process.

DEPARTMENT LEARNING OUTCOMES

1.1	Able to utilize technological innovations to implement, develop, and produce innovative work in the field of information technology / information system.
2.3	Mastering the insight to see the problems in the system and make multidimensional information as a research topic with a multidisciplinary approach.

COURSE LEARNING OUTCOMES

- Students are expected to be able to develop knowledge related to the adoption of a technology through research and development to generate new theories or models are tested in accordance with the object and context of the research.
- Students are expected to solve the problem of acceptance of a technology through inter or multidisciplinary approach.
- Students are expected to analyze the knowledge gap studies adoption of existing technologies and formulating potential research topics of technology adoption, particularly the latest information technology innovations.

SUBJECT OF DISCUSSIONS

- Understand what it is technological innovation, how the characteristics of the technology that is received, and how the characteristics of individuals who received a technological innovation.
- The process of acceptance of a technological innovation for an individual, a social community, and an organization / company.
- Factors cognitive, affective, physical, social and physical environment that influence

the adoption of a technology.

- The models of diffusion and adoption of technology
- Individual motivations in using a technology
- Practical implementation affect the acceptance of a technological process (design technology, strategy and technology management services).
- Methods of technology adoption research

PREREQUISITES

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REFERENCES

- Everett M. Rogers (2003), *Diffusion of Innovations*, Free Press.
- Dov Te'eni, Jane M. Carey, & Ping Zhang (2006), *Human Computer Interaction: Developing Effective Organizational Information Systems*, Wiley.
- Harry Bouwman, Bart van den Hooff, Lidwien van de Wijngaert and Jan A G M van Dijk (2005), *Information and Communication Technology in Organizations: Adoption, Implementation, Use and Effects*, SAGE.

ADDITIONAL REFERENCES

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