

SATUAN ACARA PERKULIAHAN
ANALISA SISTEM DAN PENGAMBILAN KEPUTUSAN

Oleh :

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DEPARTEMEN TEKNOLOGI INDUSTRI PERTANIAN

FAKULTAS TEKNOLOGI PERTANIAN

INSTITUT PERTANIAN BOGOR

2016

Course Syllabus

System Analysis and Decision Making

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|---|--|-------------------|--|
| Course title | System Analysis and Decision Making | | |
| Course code: TIN316 | Credits: 3(2-3) | Semester: 6 | Compulsory/optional: Compulsory |
| Coordinator's name | Prof. Dr. Ir. Marimin, MSc | Instructor's name | Prof. Dr.Ir.Eriyatno, MSAE Dr. Ir. Hartrisari, DEA Dr. Eng. Ir. Taufik Djatna, MS M. Arif Darmawan, STP, MS |
| Main reference (Title, author, year) (maximum 3 references) | <ol style="list-style-type: none"> 1. Marimin dan N. Maghfiroh. 2010. Aplikasi Teknik Pengambilan Keputusan dalam Manajemen Rantai Pasok. IPB Press. Bogor. 2. Marimin, Machfud, Muh. Arif Darmawan, Sri martini, Dede Rukmayadi, Bangkit Wiguna, Muh. Panji Islam, Wibisono Adhi. 2015. Teknik dan Aplikasi Produktivitas Hijau (Green Productivity) pada Agroindustri. IPB Press, Bogor. 3. CA Wasson. 2013. Introduction to Analysis & Design of System Engineering. | | |
| Additional reference (Supplemental materials) | <ol style="list-style-type: none"> 1. J. Whiten and Bentley. 2008. System Analysis and Design Methods the 7th Edition. McGraw Hill. | | |
| Brief description | System analysis and decision making discuss system approaches and decision technique, performance index based on decision, decision matrix and pay off table, decision tree, Bayesian decision, exponential comparison technique, quality function deployment, decision tree, voting system, decision analysis, Analytic Hierarchy Process, Information System and Decision Support Systems (DSS) development. | | |
| Prerequisite | Introduction to Mathematics | | |
| Course outcome | <ol style="list-style-type: none"> A. Understand system analysis, approach and concept. B. Understand decision concept, technique and analysis as well as DSS. C. Understand the concept of information system for decision support system. D. Able to apply multiple criteria decision techniques. E. Able to develop and apply information system and decision analysis for decision support system. | | |
| Relationship between course outcomes and student outcomes | <ol style="list-style-type: none"> 1. Course outcomes A and B support student outcomes 1, 5 and 6. 2. Course outcome C supports student outcomes 11 and 13. 3. Course outcomes D and E support student outcomes 11, 12 and 13. | | |
| Offered to | Study Program of Agroindustrial Technology-IPB and other study programs as elective course. | | |
| Topics to be covered | <ol style="list-style-type: none"> 1. Introduction to system analysis and decision making 2. Decision making topology and decision tree solutions | | |

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|-------------------------------------|--|---|----------------|---|---------------|
| | 3. Decision matrices and pay off table 4. Quality function deployment 5. AHP and voting systems 6. Decision support systems 7. System analysis and UML 8. Analysis and database construction 9. Conceptual data and business modeling 10. System development and integration 11. System evaluation. | | | | |
| ATSP Student outcomes | 1. An appropriate mastery of the knowledge, techniques, skills, and modern tools of their disciplines 5. An ability to function effectively on teams 6. An ability to identify, analyze and solve technical problems 11. A commitment to quality, timeliness, and continuous improvement 12. An ability to accomplish the integration of systems using appropriate analytical, computational, and application practices and procedures 13. An ability to apply knowledge of probability, statistics, engineering economic analysis and cost control, and other technical sciences and specialties necessary in the field of agro industrial engineering and technology. | | | | |
| Percentage | Knowledge | 40 % | Facility/media | x | White board |
| | Skill | 40 % | | x | LCD projector |
| | Attitude | 20 % | | x | Computer |
| Activity, contact hours (hour/week) | Lecture | 2 hours/week | | x | Wifi |
| | Lab work/Tutorial | 3 hours/week | | x | Sound system |
| | Others | - | | | Courseware |
| | | | | | Other: |
| Assessment | Assignment | 40 % (paper, critical review, practical report) | | | |
| | Examination | 50 % (mid and final exams) | | | |
| | Quiz | 10 % | | | |

MAIN REFERENCE:

1. Marimin dan N. Maghfiroh. 2010. Aplikasi Teknik Pengambilan Keputusan dalam Manajemen Rantai Pasok. IPB Press. Bogor.
2. Marimin, Machfud, Muh. Arif Darmawan, Sri martini, Dede Rukmayadi, Bangkit Wiguna, Muh. Panji Islam, Wibisono Adhi. 2015. Teknik dan Aplikasi Produktivitas Hijau (Green Productivity) pada Agroindustri. IPB Press, Bogor.
3. CA Wasson. 2013. Introduction to Analysis & Design of System Engineering.

JADWAL DAN MATERI PERKULIAHAN

| No. | Learning Outcomes | Topics | Reference | Lecturer |
|---------------------|--|--|-----------|------------|
| 1. | Understand system analysis, approach and concept | ✓ Rencana Acara Perkuliahan | 1,2 | Marimin |
| 2. | | ✓ Konsep Sistem dan Pengambilan Keputusan | | |
| 3. | | ✓ Pengambilan Keputusan dengan Indeks kinerja | | |
| 4. | Understand decision concept, technique and analysis as well as DSS | ✓ Pemodelan Proses Bisnis | 3,3 | Taufik |
| 5. | | ✓ UML untuk analisis dan disain Sistem | 3,3 | Taufik |
| 6. | | ✓ Review Teori Probabilitas | 3 | Marimin |
| 7. | | ✓ <i>Pay off Table</i> ✓ <i>Decision Tree</i> (Pohon Keputusan) | 1 | Marimin |
| | | ✓ Teknik Pengambilan Keputusan dengan Pemungutan Suara (<i>Voting</i>) | 2 | Marimin |
| <i>Midterm Exam</i> | | | | |
| 8. | Understand the concept of information system for decision support system | ✓ Konsep Sistem Pendukung Keputusan (<i>Decision Support System-DSS</i>) | 1,3,1 | Eriyatno |
| 9. | | ✓ Analisis, desain dan konstruksi basis data | 3 | Taufik |
| 10. | | ✓ Pengembanaan dan Integrasi Sistem | 3 | Taufik |
| 11. | Able to apply multiple criteria decision techniques | ✓ Pengambilan Keputusan kualitas dengan 7 alat bantu manajemen kualitas (<i>Quality decision based on the seven tools</i>) | 2 | Hartrisari |
| 12. | | ✓ Pengambilan Keputusan dengan QFD (<i>Quality Function Deployment</i>) | 1,2 | Hartrisari |
| 13. | Able to develop and apply information system and decision analysis for decision support system | ✓ <i>Analytical Hierarchy Process</i> (AHP) | 1,2 | Hartrisari |
| 14. | | | | |
| <i>Final Exam</i> | | | | |

JADWAL DAN MATERI RESPONSI

| No. | Learning Outcomes | Topics | Reference | Lecturer |
|-----|--|--|-----------|---------------|
| 1. | Understand system analysis, approach and concept | ✓ Rencana Acara Perkuliahan ✓ Konsep Sistem dan Pengambilan Keputusan | 1,2 | Arif Darmawan |

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|---------------------|--|--|-------|---------------|
| 2. | | ✓ Pengambilan Keputusan dengan Indeks kinerja | 1,2 | Arif Darmawan |
| 3. | | ✓ Pemodelan Proses Bisnis | 3,3 | Taufik |
| 4. | Understand decision concept, technique and analysis as well as DSS | ✓ UML untuk analisis dan disain Sistem | 3,3 | Taufik |
| 5. | | ✓ Review Teori Probabilitas | 3 | Arif Darmawan |
| 6. | | ✓ <i>Pay off Table</i> ✓ <i>Decision Tree</i> (Pohon Keputusan) | 1 | Arif Darmawan |
| 7. | | ✓ Teknik Pengambilan Keputusan dengan Pemungutan Suara (<i>Voting</i>) | 2 | Arif Darmawan |
| <i>Midterm Exam</i> | | | | |
| 8. | Understand the concept of information system for decision support system | ✓ Konsep Sistem Pendukung Keputusan (<i>Decision Support System-DSS</i>) | 1,3,1 | Arif Darmawan |
| 9. | | ✓ Analisis, desain dan konstruksi basis data | 3 | Taufik |
| 10. | | ✓ Pengembangan dan Integrasi Sistem | 3 | Taufik |
| 11. | Able to apply multiple criteria decision techniques | ✓ Pengambilan Keputusan kualitas dengan 7 alat bantu manajemen kualitas (<i>Quality decision based on the seven tools</i>) | 2 | Arif Darmawan |
| 12. | | ✓ Pengambilan Keputusan dengan QFD (<i>Quality Function Deployment</i>) | 1,2 | Arif Darmawan |
| 13. | Able to develop and apply information system and decision analysis for decision support system | ✓ <i>Analytical Hierarchy Process</i> (AHP) | 1,2 | Arif Darmawan |
| 14. | | | | |
| 15. | | Evaluation System | | Taufik |
| <i>Final Exam</i> | | | | |