Cover Sheet: Request 9827

ESI4356 Decision Support Systems for Industrial and Systems Engineers

Info

Process	Course|Modify|Ugrad/Pro
Status	Pending
Submitter	Kirli,Serdar kirli@ise.ufl.edu
Created	11/24/2014 12:56:32 PM
Updated	2/20/2015 8:53:54 AM
Description	Increase credit hours to 4.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	ENG - Industrial and Systems Engineering 011906000	Geunes, Joseph		11/24/2014
College	Approved	ENG - College of Engineering	Caple, Elizabeth		1/14/2015
University Curriculum Committee	Comment	PV - University Curriculum Committee (UCC)	Gebhardt, Susan	Added to the February agenda	1/20/2015
University Curriculum Committee	Recycled	PV - University Curriculum Committee (UCC)	Gebhardt, Susan	Syllabus provided is for "Spreadsheet based decision support systems." Request: Increase credit hours from 3 to 4 Syllabus: Make-up exam policy must allow for emergencies that preclude advance notification.	2/18/2015
College	Recycled	ENG - College of Engineering	Caple, Elizabeth	Please see comment made by the UCC. Thanks.	2/18/2015
Department	Approved	ENG - Industrial and Systems Engineering 011906000	Geunes, Joseph	I have uploaded the corrected syllabus based on the comments provided.	2/19/2015
College	Approved	ENG - College of Engineering	Caple, Elizabeth		2/20/2015
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			2/20/2015
Statewide Course Numbering System					
Office of the Registrar					

Step	Status	Group	User	Comment	Updated
Student Academic Support System					
Catalog					
College Notified					

UCC2: Change Course Transmittal Form

Current SCNS Course Identification

1. Prefix ESI 2. Level 4 3. Number 356 4. Lab Code None
5. Course Title Decision Support Systems for Industrial and Systems Engineers

Requested Action

6. Effective Term Fall 7. Effective Year 2015
8. Action: Terminate Course ☐ (Skip to item 24 on this form.) Other ☒ (Complete all items below.)

If you select "yes" to change any item below, complete the corresponding "current" and "proposed" fields.

Item	Change?	Current	Proposed
9. Course Prefix	Yes ☐	XXX	XXX
10. Course Level	Yes ☐	Select	Select
11. Course Number	Yes ☐	XXX	XXX
12. Lab Code	Yes ☐	Select	Select
13. Course Title	Yes ☐	Click here to enter text.	Click here to enter text.
14. Transcript Title (21 characters max)	Yes ☐	Click here to enter transcript title.	Click here to enter transcript title.
15. Credit Hours*	Yes ☒	3	4
16. Variable Credit*	Yes ☐	Min # and max # credits per semester	Min # and max # credits per semester
17. S/U Only	Yes ☐	Select	Select
18. Contact Type*	Yes ☐	Select Contact Type	Select Contact Type
19. Rotating Topic	Yes ☐	Select	Select
20. Repeatable Credit*	Yes ☐	Select	Select
21. Course Description* (50 words or fewer.)	Yes ☐	Click here to enter text.	Click here to enter text.
22. Prerequisites	Yes ☐	Click here to enter text.	Click here to enter text.
23. Co-requisites	Yes ☐	Click here to enter text.	Click here to enter text.

* If the request is for a change in credits, contact type or course description, a syllabus must be attached and the syllabus checklist on the next page of this form must be completed.

24. Rationale and Placement in Curriculum

More contact hours are needed to
- Incorporate Optimization Modeling and its implementation
- Provide a more detailed coverage of Decision Support System concepts
- Design and implement a more sophisticated, realistic and open-ended project

Syllabus Requirements Checklist

The University's complete Syllabus Policy can be found at:
http://www.aa.ufl.edu/Data/Sites/18/media/policies/syllabi_policy.pdf

The syllabus of the proposed course **must** include the following:

- ☐ Course title
- ☐ Instructor contact information (if applicable, TA information may be listed as TBA)
- ☐ Office hours during which students may meet with the instructor and TA (if applicable)
- ☐ Course objectives and/or goals
- ☐ A weekly course schedule of topics and assignments.
- ☐ Methods by which students will be evaluated and their grades determined
- ☐ Information on current UF grading policies for assigning grade points. This may be achieved by including a link to the appropriate undergraduate catalog web page: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.
- ☐ List of all required and recommended textbooks
- ☐ Materials and Supplies Fees, if any
- ☐ A statement related to class attendance, make-up exams and other work such as: *"Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx."*
- ☐ A statement related to accommodations for students with disabilities such as: *"Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation."*
- ☐ A statement informing students of the online course evaluation process such as: *"Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results."*

It is **recommended** that the syllabus contain the following:

- ☐ Critical dates for exams or other work
- ☐ Class demeanor expected by the professor (e.g. tardiness, cell phone usage)
- ☐ The university's honesty policy regarding cheating, plagiarism, etc.

  Suggested wording: UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

- ☐ Contact information for the Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc/, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies

Memorandum

To:	University Curriculum Committee
Via	Associate Dean for Academic Affairs, COE
From:	Serdar Kirli, Undergraduate Coordinator, Department of Industrial and Systems Engineering
Date:	24-Nov-14
Subject:	Request for Changes in the ISE Undergraduate Curriculum

This memo discusses the proposed changes to the ISE undergraduate curriculum. The faculty of the Department of Industrial and Systems Engineering have approved these changes.

The objectives of the proposed changes are to

(a) Improve the retention rate and reduce the time to graduation by identifying early students that may struggle in the ISE department,

(b) Better prepare ISE students for professional life and to improve ABET compliance,

(c) Make the ISE undergraduate program more flexible and attractive to students,

(d) Apply rules uniformly,

(e) Strengthen the ISE undergraduate curriculum by adding technical content that provides competitive advantage to ISE students in getting internships and jobs,

(f) Adjust the elective credits to reflect the changes in the ISE undergraduate curriculum.

The changes discussed below are intended to achieve the goals listed above.

Improving Retention/Time-to-Degree

In the last few years, the number of students unable to make sufficient progress toward their degrees has been increasing. This undesirable trend has become a significant issue for the ISE department. As a result, the ISE department has been forced to allocate its limited resources disproportionally to dealing with struggling students (at the expense of other students); furthermore, this has also put the academic and career opportunities of those students in jeopardy.

Therefore, it is imperative to identify students with a low likelihood of success early in their studies, before they make a substantial investment of time and resources in

the ISE program. This will give the ISE department a chance to take a corrective action (more focus on advising these students) and, if necessary, find a more suitable program for them, giving them an opportunity to succeed.

The aim of the following two changes is to address this problem:

(1) Update the Critical Tracking Requirement

Current Program Requirement: Students must complete each of the seven critical tracking courses (MAC 2311, MAC 2312, MAC 2313, MAP 2302, PHY 2048, PHY 2049 and COP 2271) with a minimum grade of C within two attempts.

Additional Program Requirement: *Only two tracking courses can be repeated, each having one additional attempt. Grades of H, I, N, U, W and WF are considered attempts. A registration cancelled for non-payment is also considered an attempt.*

Implication: For the seven critical tracking courses, the total number of allowed attempts is reduced from 14 to 9.

Rationale:

- A significant correlation has been found between performance in critical tracking courses and performance in the ISE undergraduate courses. As a result, freshmen and sophomores who struggle early on in critical tracking courses typically end up repeating an excessive number of junior and senior level courses (some more than once) which, in the best case delays their graduation and in the worst case prevents them from obtaining a degree.
- Analysis of transcript data has shown that students who need more than 9 attempts to complete their critical tracking courses are unlikely to succeed in the ISE undergraduate program.

(2) Update the Maximum Number of Attempts for ESI 4327C (Matrix and Numerical Methods in Systems Engineering)

Currently, students must get a minimum grade of C in this course in at most three attempts. The ISE department voted to reduce this limit to two, thereby treating this course like a critical tracking course.

Current Program Requirement: Students must complete successfully every required course with minimum grades of C in at most three attempts. Grades of H, I, N, U, W and WF are considered attempts. Registration canceled for non-payment is also considered an attempt.

Modified Program Requirement: *Students must complete successfully ESI 4327C with a minimum grade of C in at most two attempts.* Students must complete successfully every *other* required course with minimum grades of C in at most

three attempts. Grades of H, I, N, U, W and WF are considered attempts. Registration canceled for non-payment is also considered an attempt.

Rationale:

- ESI 4327C is the first ISE undergraduate course a student takes in the ISE program. This course serves directly or indirectly as a pre-requisite for a large number of courses in the ISE undergraduate curriculum. As a result, it is difficult for a student to make progress toward graduation without completing ESI 4327C.
- Student performance in ESI 4327C is a good predictor of overall student performance in the ISE undergraduate program, because it covers fundamental concepts that other courses rely upon. Consequently, it is a good candidate for the early detection mechanism we intend to create. Analysis of transcript data has shown that students who struggle in this course are unlikely succeed in the ISE undergraduate program.

Preparing ISE Students for Professional Life and Improving ABET Compliance

In their interactions with the professional community, our students represent not only themselves but also the University of Florida. Therefore, it is an educational priority to teach them how to conduct themselves in a professional manner before embarking on an internship, co-op or a company sponsored project. In addition, ABET requires programs to include ethics education in their curriculum.

The following three changes are proposed to address this issue:

(3) Add a Course to the Required Course List

New Program Requirement: *EGS 4034 (Engineering Professionalism and Ethics) is a required course in the ISE curriculum.*

Rationale: EGS 4034 is a one-credit course designed specifically for engineering students that teaches professionalism and ethics. Therefore, adding EGS 4034 as a required course will strengthen the ISE undergraduate curriculum, satisfy an ABET requirement and eliminate a potential weakness.

(4) Establish New Pre-Requisites (UCC2 forms are attached)

New Pre-requisites: *EGS 4034 is a pre-requisite for ESI 4949 (Co-Op Work Experience), EIN 4944 (Practical Work in Industrial and Systems Engineering), EIN 4335 (Senior Design) and EIN 4913 (IPPD 2).*

Rationale: By their nature, ESI 4949, EIN 4944, EIN 4335 and EIN 4913 require a significant amount of interaction with professionals in the industry. Hence, it is important that students exhibit exemplary professional behavior I their dealings with members of the professional community.

(5) Remove a Course from the Required Course List

Modification of Program Requirement: *EIN 3101C (Introduction to ISE) is no longer a required course in the ISE undergraduate curriculum.* (Note: EIN 3101C is not deleted from the catalog.)

Rationale: All of EIN 3101C contents are already covered in other courses, except the ethics component. Now that the ethics components will be covered in EGS 4034 (see item 3; a course designed by the College of Engineering specifically for this purpose), EIN 3101C becomes redundant.

Making ISE Program more Flexible and Attractive

The combined degree program in ISE enables students to receive a master's degree in a shorter time by allowing them to take certain graduate courses (up to a certain credit limit) that count for both the undergraduate and graduate degrees. The ISE department would like to attract more ISE undergraduates to the Master's program.

(6) Update the combined degree section of the undergraduate catalog

Current Wording:

Contact: Cynthia Blunt, (352) 392-1464 ext. 2026, blunt@ise.ufl.edu
Overlapping credits: 10

New Wording:

Contact: *Heather Nemeth*, (352) 392-1464 ext. *2020, hnemeth@ise.ufl.edu*
Overlapping credits: *3-12*

Rationale: One way to achieve this goal is to increase the flexibility of scheduling and give students more options to choose from. It is projected that this change would increase the number of students applying to the combined degree program. Since most of the ISE undergraduates are Florida residents, this will have the added benefit of increasing the number of Florida residents in the ISE Master's program.

Applying Rules Uniformly

The following change is proposed:

(7) Change the Minimum Grade for Technical and General Electives

New Program Requirement: *Students must complete successfully every technical or general elective with a minimum grade of C.*

Rationale: Students are required to complete all other courses in the ISE curriculum with a minimum grade of C. This would establish a uniform rule across the entire curriculum.

Adding Technical Content to Increase ISE Student Competitiveness

ESI 4356 and ESI 4357 are the decision support system courses that provide an information technology emphasis in the ISE undergraduate curriculum. The topics covered in these courses are highly sought after by employers and provide a competitive advantage to our students when they look for jobs and internships. Every semester, the instructor of these courses is contacted by employers in computing and consulting fields who actively recruit students that perform well in these courses. Also, the exit interviews with students indicate that these courses teach useful skills that are directly applicable in the work environment.

In order to prepare ISE students better for their professional careers, equip them with more technical expertise in sought after technologies and to enhance their job opportunities, the following change is proposed:

(8) Increase Course Credits from 3 to 4

Modification of Course Credits: *ESI 4356 (Decision Support Systems for Industrial and Systems Engineers) and ESI 4357 (Web based Decision Support Systems for Industrial and Systems Engineers) become 4-credit courses.*

Rationale: ESI 4356 and ESI 4357 are project courses that cover a wide-range of topics. They not only teach principles of decision support system design but also various technologies necessary to implement them. Students also work on a term project where they design and implement a decision support system. More contact hours are needed to

- Incorporate Optimization Modeling and its implementation
- Provide a more detailed coverage of Decision Support System concepts
- Design and implement a more sophisticated, realistic and open-ended project

Adjusting the Elective Credits

(9) Modify the technical electives requirement

Current Program Requirement: The curriculum requires nine technical elective credits. Students should select technical electives that are related to one another

and provide expertise in an ISE concentration area. Several minors provide such concentrations.

Modified Program Requirement: *A technical elective is a course that is 3000-level or higher and contains significant scientific and/or technical content. A general elective is a course that is 3000-level or higher and is required for a minor degree program or in areas complementary to industrial and systems engineering. To complete the requirements for the B.S. degree in Industrial and Systems Engineering, students must complete one of the following options:*

a) *8 credit hours of technical electives*
b) *5 credit hours of technical elective and 3 credit hours of general electives.*

Rationale:

- This modification would allow students to explore areas, non-traditional and otherwise, for which concepts and techniques in industrial and systems engineering can be applied.
- This modification would allow students to pursue a minor degree program complementary to industrial and systems engineering.
- The number of elective credits need to be reduced to eight due to the changes in the curriculum described in this memo.

Supplementary information: Below is a list of pre-approved technical and general electives. Students can also petition the undergraduate coordinator to include other courses as technical and general electives as defined above.

- Pre-approved technical electives:
  EIN 4905 Design of Experiments
  EIN 4905 Honors Intro to Financial Engineering
  EIN 4905 Special Problems in Industrial & Systems Engineering
  EIN 4912 Integrated Product & Process Design
  ART 3807 Media Experiments in Technology and Art
  CAP 4621 Artificial Intelligence and Heuristics
  CEN 3031 Introduction to Software Engineering
  CGS 4545 Databases and Applications
  CIS 4301 Information System Design and Development
  COP 3530 Data Structures and Algorithms
  COT 3100 Applications of Discrete Structures
  ECO 3101 Intermediate Microeconomics
  ECO 3203 Intermediate Macroeconomics
  ECO 4400 Game Theory and Applications

EEE3396 Solid State Electronic Devices
EES 3000 Environmental Science
EGM 3401 Dynamics
IELM 3330 Introduction to Financial Engineering
ISM 4113 Business Systems Design and Applications
ISM 4210 Database Management
MAA 4211 Advanced Calculus 1
MAA 4212 Advanced Calculus 2
MAA 4226 Introduction to Modern Analysis 1
MAA 4227 Introduction to Modern Analysis 2
MAA 4402 Functions of a Complex Variable
MAD 4203 Introduction to Combinatorics 1
MAD 4204 Introduction to Combinatorics 2
MAA 4401 Complex Variables
MAP 3170 Introduction to Actuarial Mathematics
MAP 4413 Fourier analysis
MAP 4484 Modeling in Mathematical Biology
MAS 4301 Abstract Algebra 1
MAS 4302 Abstract Algebra 2
MGF 3301 Introduction to Advanced Mathematics
PKG 3103 Food Packaging
PKG 4007C Computer Tools for Packaging
PKG 4008 Distribution and Transport Packaging
PKG 4101C Computer tools for Packaging
PKG 4252C Analytical Methods in Packaging
RMI 3011 or 4305 Risk Management
STA 4183 Theory of Interest
STA 4210 Regression Analysis, 3 hours
STA 4211 Design of Experiments, 3 hours
STA 4222 Sample Survey Design
STA 4502 Nonparametric Statistical Methods
STA 4504 Categorical Data Analysis
STA 4702 Multivariate Statistical Methods
STA 4712 Introduction to Survival Analysis
STA 4853 Introduction to Time Series and Forecasting
TTE 4004C Transportation Engineering
TTE 4106 Urban Transportation Planning
TTE 4300 Transportation Systems Analysis

- Pre-approved general electives
  AEB 3341 Selling Strategically
  EGN 4032 Professional Issues in Engineering
  ENT 3003 Principles of Entrepreneurship
  ENT 4114 New Venture Planning
  ENT 4704 International Entrepreneurship
  EGN 4038 Engineering Leadership
  EGN 4641 Engineering Entrepreneurship
  EGN 4643 Engineering Innovation
  FIN 3403 Business Finance
  FIN 4243 Debt and Money Markets
  MAN 3025 Principles of Management
  MAR 3023 Principles of Marketing
  EGN 4930 Sales Seminar
  EIN 4937 Industrial & Systems Engineering Seminar
  EIN 4944 Practical Work in Industrial & Systems Engineering
  ESI 4949 Co-Op Work Experience
  MAR 3023 Principles of Marketing
  URP3001 Cities of the World

Modified Curriculum

As listed in the on-line catalog (see below), the current recommended semester plan consists of one summer and eight fall/spring semesters and the number of credit hours varies between 10 (during the summer semester) and 15 hours. With the requested changes listed above, the modified semester plan (also shown below) still consists of one summer and eight fall/spring semesters with the number of credit hours varying between 11 and 15 hours.

Current Recommended Semester Plan

Semester 1		Credits
If you do not place out of ENC 1101, take it in the fall.		
CHM 2045 General Chemi. 1 (GE-P) or CHM 2095 Chemistry for Eng. 1		3
CHM 2045L General Chemistry 1 Laboratory (GE-P)		1
ECO 2013 Principles of Macroeconomics (GE-S) [1]		4
MAC 2311 Analytic Geometry and Calculus 1 (GE-M)		**4**
Humanities (GE-H)		3
	Total	15

Semester 2		Credits
ECO 2023 Principles of Microeconomics (GE-S) [1]		4
ENC 3254 Professional Communication for Engineers (GE-C)		3
HUM 2305 What is the Good Life (GE-H)		3
MAC 2312 Geometry and Calculus 2 (GE-M)		**4**
	Total	14

Semester 3		Credits
EML 2023 Computer Aided Graphics and Design or CGN 2328 Technical Drawing and Visualization		3
MAC 2313 Analytic Geometry and Calculus 3 (GE-M)		**4**
PHY 2048 Physics with Calculus 1 (GE-P) [2]		**3**
PHY 2048L Physics with Calculus 1 Laboratory (GE-P) [2]		1
Humanities (GE-H) or Social and Behavioral Sciences (GE-S)		3
	Total	14

Semester 4		Credits
COP 2271 Computer Programming for Engineers		**2**
COP 2271L Computer Programming for Engineers Laboratory		1
EIN 3101C Introduction to Industrial and Systems Engineering [5]		2
MAP 2302 Elementary Differential Equations		**3**
PHY 2049 Physics with Calculus 2		**3**
PHY 2049L Physics with Calculus 2 Laboratory		1
Financial Accounting		3
	Total	15

Semester 5		Credits
EGM 2511 Engineering Mechanics - Statics		3
EIN 4354 Engineering Economy [5]		3

ESI 4327C Matrix and Numerical Methods in Systems Engineering [5]		4
STA 4321 Introduction to Probability [5]		3
	Total	13
Semester 6		**Credits**
ESI 4312 Operations Research 1 [5]		4
ESI 4313 Operations Research 2 [5]		4
EMA 3010 Materials		3
STA 4322 Introduction to Statistics Theory [5]		3
	Total	14
Semester 7		**Credits**
EIN 4905 Facility Planning and Work Design [5]		4
ESI 4356 Decision Support Systems for Industrial and Systems Eng. [5]		3
Technical elective [3]		3
	Total	10
Semester 8		**Credits**
ESI 4523 Industrial Systems Simulation [5]		3
ESI 4221C Industrial Quality Control [5]		3
EIN 4343 Inventory and Supply Chain Systems [5]		3
EEL 3003 Elements of Electrical Engineering		3
Technical elective [3/4]		3
	Total	15
Semester 9		**Credits**
EIN 4321 Industrial Energy Management or EML 3100 Thermodynamics		3
EIN 4401 Lean Production Systems [5]		3
ESI 4357 Web-based Decision Support Sys. for Industrial & Sys. Eng. [5]		3
EIN 4335 Senior Design Project [4/5]		3
Technical elective [3]		3
	Total	15

Modified Semester Plan

Semester 1		Credits
If you do not place out of ENC 1101, take it in the fall.		
CHM 2045 General Chemi. 1 (GE-P) or CHM 2095 Chemistry for Eng. 1		3
CHM 2045L General Chemistry 1 Laboratory (GE-P)		1
ECO 2013 Principles of Macroeconomics (GE-S) [1]		4
MAC 2311 Analytic Geometry and Calculus 1 (GE-M)		**4**
Humanities (GE-H)		3
	Total	15

Semester 2		Credits
ECO 2023 Principles of Microeconomics (GE-S) [1]		4
HUM 2305 What is the Good Life (GE-H)		3
PHY 2048 Physics with Calculus 1 (GE-P) [2]		**3**
PHY 2048L Physics with Calculus 1 Laboratory (GE-P) [2]		1
MAC 2312 Geometry and Calculus 2 (GE-M)		**4**
	Total	15

Semester 3 (Summer)		Credits
PHY 2049 Physics with Calculus 2		**3**
PHY 2049L Physics with Calculus 2 Laboratory		1
MAC 2313 Analytic Geometry and Calculus 3 (GE-M)		**4**
ENC 3254 Professional Communication for Engineers (GE-C)		3
	Total	11

Semester 4		Credits
COP 2271 Computer Programming for Engineers		**2**
COP 2271L Computer Programming for Engineers Laboratory		1
EML 2023 Computer Aided Graphics and Design or CGN 2328 Technical Drawing and Visualization		3
Humanities (GE-H) or Social and Behavioral Sciences (GE-S)		3
MAP 2302 Elementary Differential Equations		**3**
EIN 4354 Engineering Economy [5]		3
	Total	15

Semester 5	Credits
EGM 2511 Engineering Mechanics - Statics	3
Financial Accounting	3
EGS 4034 Engineering Professionalism and Ethics	1

ESI 4327C Matrix and Numerical Methods in Systems Engineering [5]	4
STA 4321 Introduction to Probability [5]	3
Total	14

Semester 6	**Credits**
ESI 4312 Operations Research 1 [5]	4
EIN 4905 Facility Planning and Work Design [5]	4
EMA 3010 Materials	3
STA 4322 Introduction to Statistics Theory [5]	3
Total	14

Semester 7	**Credits**
ESI 4221C Industrial Quality Control [5]	3
ESI 4313 Operations Research 2 [5]	4
ESI 4356 Decision Support Systems for Industrial and Systems Eng. [5]	4
Technical elective [3]	3
Total	14

Semester 8	**Credits**
ESI 4523 Industrial Systems Simulation [5]	3
ESI 4357 Web-based Decision Support Sys. for Industrial & Sys. Eng. [5]	4
EIN 4343 Inventory and Supply Chain Systems [5]	3
EEL 3003 Elements of Electrical Engineering	3
Technical elective [3/4]	2
Total	15

Semester 9	**Credits**
EIN 4321 Industrial Energy Management or EML 3100 Thermodynamics	3
EIN 4401 Lean Production Systems [5]	3
EIN 4335 Senior Design Project [4/5]	3
Technical elective [3]	3
Total	12

ESI 4356 – SPREADSHEET BASED DECISION SUPPORT SYSTEMS
(sections 07DA and 2499)
FALL 2014

1. Catalog Description

Applications of decision support systems in industrial and systems engineering; Developing and implementing decision support systems arising in industrial and systems engineering using popular database management and spreadsheet software; Microsoft Excel; Visual Basic for Excel. (3 credits).

2. Pre-requisites

COP 2271 (Computer Programming for Engineers) or equivalent.

ESI 4312 (Operations Research 1) or equivalent.

3. Course Objectives and Outcomes

The objectives of the course are to

(i) understand the usefulness of decision support systems arising in the practice of industrial and systems engineering;

(ii) become expert users of spreadsheets and to learn how to take advantage of a large array of tools available in spreadsheet programs;

(iii) learn how to accomplish tasks programmatically in a spreadsheet and how to design user friendly graphical user interfaces;

(iv) understand the issues that arise in the conceptual development and implementation of effective and user friendly decision support systems.

(v) design, develop, and implement integrated decision support systems for industrial and systems engineering applications.

4. Contribution of course to meeting the professional component

This is a course with significant design content. Throughout the semester, students will complete a team project expected to meet specific design criteria.

5. Instructor

a. Office location: 415 Weil Hall
b. Telephone: 392 1464 ext. 2014
c. E-mail address: kirli@ise.ufl.edu
d. Web site: Sakai (lss.at.ufl.edu)
e. Office hours**:** MW 6th period

6. Student Assistants

a. Office location: 202 Weil Hall
b. Office hours: posted on the course web-site on Sakai

7. Meeting Times and Location

TR 3-4 periods, MAEB 229 (section 07DA)

TR 6 period, WEIM 1094 (section 2499)

8. Material and Supply Fee

None

9. Textbook and Software

a. Microsoft Excel 2010 or later (required)

b. Sample workbooks on the course web-site

c. "*Developing Spreadsheet-based Decision Support Systems 2nd edition*" by Sandra Eksioglu, Michelle M. H. Seref, Ravindra K. Ahuja and Wayne L. Winston (NOT required)

10. Computer Requirement

You must have a laptop computer to sign up for this course. The laptop computer is necessary for in-class exercises and exams.

11. Attendance and Expectations

Attendance is not required, but strongly recommended. It will be to your benefit to attend all lectures. You will be responsible for everything covered in class.

Lectures are there to facilitate efficient learning, not chatting with friends, surfing the net, reading the Alligator, or sleeping. You should be focused on the course material, not on activities that do not involve course work. Those who behave inappropriately will be asked to leave. If you feel like you cannot follow the lecture anymore, you can leave the classroom quietly; I will not be offended. Please remember to turn off your cell phones as soon as you enter the classroom.

12. Grading Policy

Your grade will be based on three in-class exams and a team project.

Exam-1	20%
Exam-2	20%
Exam-3	20%
Team project	40%

13. Exam Submission

All assignments must be submitted via Sakai unless specified otherwise. Assignment deadlines are rigid. If you do not submit before the deadline or submit the wrong file, you will receive a zero. Only the instructor has the authority to grant late submissions.

14. Make-up Exam Policy

Students needing a make-up exam due to schedule conflicts must notify the instructor at least one week before the day the exam is scheduled for. Please do not ask for a make-up exam to attend a job interview.

15. Grading Scale

There may or may not be a curve at the end of the semester. This of course depends on the overall performance of the class throughout the semester. Please keep in mind that an A is not your birth-right. In fact, the percentage of As in this course have historically been in the 15-20% range. You have to study very hard and perform well in order to deserve an A.

Grade	Range
A	[93-100]
A-	[90-93)
B+	[87-90)
B	[83-87)
B-	[80-83)
C+	[77-80)
C	[73-77)
C-	[70-73)
D+	[67-70)
D	[63-67)
D-	[60-63)

A C- will not be a qualifying grade for required courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: a C-average is equivalent to a GPA of 1.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit: http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html

16. Team Project Guidelines

You will work in teams of 5-6 students. At the end of the semester, you will evaluate your teammates and also will be evaluated by them. Your grade will be based not only on your team score but also on your teammates' evaluations of you.

Project development will take place in stages with specific deadlines. The deadlines below are tentative and are subject to change with notice.

Project Stage	Date
Team Selection	October 27
Project Meeting	November 18-19
Project Meeting	November 18-19
Final Submission	December 1-2
Presentation	December 10-17

17. Course Outline

Week	Topic
1	Introduction & Functions And Formulas
2	Charts & Pivot Tables & Statistical Analysis
3	Excel Solver & Exam-1
4	VBA Objects & Procedures & Flow Control
5	Data Structures
6	Developing Object Classes
7	Exam-2 & Developing Object Classes
8	User Interface Design
9	Principles of Decision Support Systems
10	Project Discussion & Exam-3
11	Project Work
12	*Veterans Day Holiday* & Project Work
13	Project Work & Project Meeting 1
14	Project Work & *Thanksgiving Holiday*
15	Project Work & Project Meeting 2
16	Project Deadline & Presentations

18. Honesty Policy

All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

19. Online Course Evaluation Process

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results.

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- University Counseling Center, 301 Peabody Hall, 392-1575, Personal and Career Counseling.
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- Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling.
- Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

21. Software Use

All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

ESI 4356 – DECISION SUPPORT SYSTEMS - FALL 2015

1. Catalog Description

Applications of decision support systems in industrial and systems engineering; Developing and implementing decision support systems arising in industrial and systems engineering using popular database management and spreadsheet software; Microsoft Excel; Visual Basic for Excel. (3 credits).

2. Pre-requisites

COP 2271 (Computer Programming for Engineers) or equivalent.

ESI 4312 (Operations Research 1) or equivalent.

3. Course Objectives and Outcomes

The objectives of the course are to

(i) understand the usefulness of decision support systems arising in the practice of industrial and systems engineering;

(ii) become expert users of spreadsheets and to learn how to take advantage of a large array of tools available in spreadsheet programs;

(iii) learn how to accomplish tasks programmatically in a spreadsheet and how to design user friendly graphical user interfaces;

(iv) understand the issues that arise in the conceptual development and implementation of effective and user friendly decision support systems.

(v) design, develop, and implement integrated decision support systems for industrial and systems engineering applications.

4. Contribution of course to meeting the professional component

This is a course with significant design content. Throughout the semester, students will complete a team project expected to meet specific design criteria.

5. Instructor

a. Office location: 415 Weil Hall
b. Telephone: 392 1464 ext. 2014
c. E-mail address: kirli@ise.ufl.edu
d. Web site: Sakai (lss.at.ufl.edu)
e. Office hours**:** MW 6th period

6. Student Assistants

a. Office location: 202 Weil Hall
b. Office hours: posted on the course web-site on Sakai

7. Meeting Times and Location

TR 3-4 periods, MAEB 229 (section 07DA)

TR 6-7 periods, WEIM 1094 (section 2499) **(one extra hour added)**

8. Material and Supply Fee

None

9. Textbook and Software

a. Microsoft Excel 2010 or later (required)
b. Sample workbooks on the course web-site
c. "*Developing Spreadsheet-based Decision Support Systems 2nd edition*" by Sandra Eksioglu, Michelle M. H. Seref, Ravindra K. Ahuja and Wayne L. Winston (NOT required)

10. Computer Requirement

You must have a laptop computer to sign up for this course. The laptop computer is necessary for in-class exercises and exams.

11. Attendance and Expectations

Attendance is not required, but strongly recommended. It will be to your benefit to attend all lectures. You will be responsible for everything covered in class.

Lectures are there to facilitate efficient learning, not chatting with friends, surfing the net, reading the Alligator, or sleeping. You should be focused on the course material, not on activities that do not involve course work. Those who behave inappropriately will be asked to leave. If you feel like you cannot follow the lecture anymore, you can leave the classroom quietly; I will not be offended. Please remember to turn off your cell phones as soon as you enter the classroom.

12. Grading Policy

Your grade will be based on three in-class exams and a team project.

Exam-1	20%
Exam-2	20%
Exam-3	20%
Team project	40%

13. Exam Submission

All assignments must be submitted via Sakai unless specified otherwise. Assignment deadlines are rigid. If you do not submit before the deadline or submit the wrong file, you will receive a zero. Only the instructor has the authority to grant late submissions.

14. Make-up Exam Policy

Students needing a make-up exam due to schedule conflicts must notify the instructor at least one week before the day the exam is scheduled for. Please do not ask for a make-up exam to attend a job interview.

A make-up exam will be provided if you miss the exam due to an emergency. In this case, you must contact the instructor as soon as possible and provide evidence for the emergency that prevented you from attending the exam.

15. Grading Scale

There may or may not be a curve at the end of the semester. This of course depends on the overall performance of the class throughout the semester. Please keep in mind that an A is not your birth-right. In fact, the percentage of As in this course have historically been in the 15-20% range. You have to study very hard and perform well in order to deserve an A.

Grade	Range
A	[93-100]
A-	[90-93)
B+	[87-90)
B	[83-87)
B-	[80-83)
C+	[77-80)
C	[73-77)
C-	[70-73)
D+	[67-70)
D	[63-67)
D-	[60-63)

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Project development will take place in stages with specific deadlines. The deadlines below are tentative and are subject to change with notice.

Project Stage	Date
Team Selection	October 27
Project Meeting	November 4-5
Project Meeting	November 18-19
Project Meeting (new)	**December 4-5**
Final Submission	December 8-9
Presentation	December 10-17

17. Course Outline

Week	Topic
1	Introduction & Functions And Formulas & Charts
2	Pivot Tables & Statistical Analysis & Excel Solver
3	VBA Objects & Procedures & Exam-1
4	Flow Control & Data Structures
5	Developing Object Classes
6	User Interface Design
7	Exam-2 & **Optimization Modeling (new topic)**
8	**Optimization Modeling (new topic)**
9	**Principles of Decision Support System Design (expanded topic)**
10	**Principles of Decision Support System Design (expanded topic)** & Exam-3
11	Project Work & Project Meeting 1
12	*Veterans Day Holiday* & Project Work
13	Project Work & Project Meeting 2
14	Project Work & *Thanksgiving Holiday*
15	Project Work & **Project Meeting 3 (additional meeting)**
16	Project Deadline & Presentations

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ESI 4356 – SPREADSHEET BASED DECISION SUPPORT SYSTEMS
(sections 07DA and 2499)
FALL 2014

1. Catalog Description

Applications of decision support systems in industrial and systems engineering; Developing and implementing decision support systems arising in industrial and systems engineering using popular database management and spreadsheet software; Microsoft Excel; Visual Basic for Excel. (3 credits).

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The objectives of the course are to

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7. Meeting Times and Location

TR 3-4 periods, MAEB 229 (section 07DA)

TR 6-7 periods, WEIM 1094 (section 2499) **(one extra hour added)**

8. Material and Supply Fee

None

9. Textbook and Software

a. Microsoft Excel 2010 or later (required)
b. Sample workbooks on the course web-site
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