

# REQUEST FOR COURSE CHANGE (MAJOR AND MINOR)

Complete 1a – 1f & 2a – 2c. Fill out the remainder of the form as applicable for items being changed.

**1. General Information.**

a. Submitted by the College of: Gatton College of Business & Economics Today's Date: 02/20/2010

b. Department/Division: Decision Science & Information Systems

c. Is there a change in "ownership" of the course? YES  NO   
 If YES, what college/department will offer the course instead? Gatton College/Analytics

d. What type of change is being proposed?  Major  Minor<sup>1</sup> (place cursor here for minor change definition)

e. Contact Person Name: Dr. Ram Pakath Email: pakath@uky.edu Phone: 257-4319

f. Requested Effective Date:  Semester Following Approval OR  Specific Term<sup>2</sup>: Fall 2010

**2. Designation and Description of Proposed Course.**

a. Current Prefix and Number: DIS 350 Proposed Prefix & Number: AN 306

b. Full Title: Analytics: Models and Methods Proposed Title: N/A

c. Current Transcript Title (if full title is more than 40 characters): Analytics: Models & Methods

c. Proposed Transcript Title (if full title is more than 40 characters): N/A

d. Current Cross-listing:  N/A OR Currently<sup>3</sup> Cross-listed with (Prefix & Number): \_\_\_\_\_  
 Proposed –  ADD<sup>3</sup> Cross-listing (Prefix & Number): \_\_\_\_\_  
 Proposed –  REMOVE<sup>3,4</sup> Cross-listing (Prefix & Number): \_\_\_\_\_

e. Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours<sup>5</sup> for each meeting pattern type.

Current:	<input type="checkbox"/> Lecture	<input type="checkbox"/> Laboratory <sup>5</sup>	<input type="checkbox"/> Recitation	<input type="checkbox"/> Discussion	<input type="checkbox"/> Indep. Study
	<input type="checkbox"/> Clinical	<input type="checkbox"/> Colloquium	<input type="checkbox"/> Practicum	<input type="checkbox"/> Research	<input type="checkbox"/> Residency
	<input type="checkbox"/> Seminar	<input type="checkbox"/> Studio	<input type="checkbox"/> Other – Please explain: _____		
Proposed:	<input type="checkbox"/> Lecture	<input type="checkbox"/> Laboratory	<input type="checkbox"/> Recitation	<input type="checkbox"/> Discussion	<input type="checkbox"/> Indep. Study
	<input type="checkbox"/> Clinical	<input type="checkbox"/> Colloquium	<input type="checkbox"/> Practicum	<input type="checkbox"/> Research	<input type="checkbox"/> Residency
	<input type="checkbox"/> Seminar	<input type="checkbox"/> Studio	<input type="checkbox"/> Other – Please explain: _____		

f. Current Grading System:  Letter (A, B, C, etc.)  Pass/Fail  
 Proposed Grading System:  Letter (A, B, C, etc.)  Pass/Fail

g. Current number of credit hours: \_\_\_\_\_ Proposed number of credit hours: \_\_\_\_\_

<sup>1</sup> See comment description regarding minor course change. *Minor changes are sent directly from dean's office to Senate Council Chair. If Chair deems the change as "not minor," the form will be sent to appropriate academic Council for normal processing and contact person is informed.*

<sup>2</sup> Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.

<sup>3</sup> Signature of the chair of the cross-listing department is required on the Signature Routing Log.

<sup>4</sup> Removing a cross-listing does not drop the other course – it merely unlinks the two courses.

<sup>5</sup> Generally, undergrad courses are developed such that one semester hr of credit represents 1 hr of classroom meeting per wk for a semester, exclusive of any lab meeting. Lab meeting generally represents at least two hrs per wk for a semester for 1 credit hour. (See SR 5.2.1.)

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<b>h. Currently, is this course repeatable for additional credit?</b>	YES <input type="checkbox"/>	NO <input type="checkbox"/>
<i>Proposed to be repeatable for additional credit?</i>	YES <input type="checkbox"/>	NO <input type="checkbox"/>
<i>If YES: Maximum number of credit hours: _____</i>		
<i>If YES: Will this course allow multiple registrations during the same semester?</i>	YES <input type="checkbox"/>	NO <input type="checkbox"/>
<b>i. Current Course Description for Bulletin:</b> _____		
<i>Proposed Course Description for Bulletin:</i> _____		
<b>j. Current Prerequisites, if any:</b> _____		
<i>Proposed Prerequisites, if any:</i> _____		
<b>k. Current Distance Learning(DL) Status:</b> <input type="checkbox"/> N/A <input type="checkbox"/> Already approved for DL* <input type="checkbox"/> Please Add <sup>6</sup> <input type="checkbox"/> Please Drop		
*If already approved for DL, the Distance Learning Form must also be submitted <u>unless</u> the department affirms (by checking this box <input type="checkbox"/> ) that the proposed changes do not affect DL delivery.		
<b>l. Current Supplementary Teaching Component, if any:</b> <input type="checkbox"/> Community-Based Experience <input type="checkbox"/> Service Learning <input type="checkbox"/> Both		
<i>Proposed Supplementary Teaching Component:</i> <input type="checkbox"/> Community-Based Experience <input type="checkbox"/> Service Learning <input type="checkbox"/> Both		
<b>3. Currently, is this course taught off campus?</b>	YES <input type="checkbox"/>	NO <input type="checkbox"/>
<i>Proposed to be taught off campus?</i>	YES <input type="checkbox"/>	NO <input type="checkbox"/>
<b>4. Are significant changes in content/teaching objectives of the course being proposed?</b>	YES <input type="checkbox"/>	NO <input type="checkbox"/>
If YES, explain and offer brief rationale: _____ _____		
<b>5. Course Relationship to Program(s).</b>		
<b>a. Are there other depts and/or pgms that could be affected by the proposed change?</b>	YES <input type="checkbox"/>	NO <input type="checkbox"/>
If YES, identify the depts. and/or pgms: _____		
<b>b. Will modifying this course result in a new requirement<sup>7</sup> for ANY program?</b>	YES <input type="checkbox"/>	NO <input type="checkbox"/>
If YES <sup>7</sup> , list the program(s) here: _____		
<b>6. Information to be Placed on Syllabus.</b>		
<b>a. <input type="checkbox"/> Check box if changed to 400G or 500.</b>	If <u>changed to 400G- or 500-level course</u> you must send in a syllabus and you must include the <i>differentiation</i> between undergraduate and graduate students by: (i) requiring additional assignments by the graduate students; and/or (ii) establishing different grading criteria in the course for graduate students. (See SR 3.1.4.)	

<sup>6</sup> You must *also* submit the Distance Learning Form in order for the course to be considered for DL delivery.

<sup>7</sup> In order to change a program, a program change form must also be submitted.

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## Signature Routing Log

**General Information:**

Course Prefix and Number: AN 306 (formerly, DIS 350)  
 Proposal Contact Person Name: Dr. Ram Pakath Phone: 7-4319 Email: pakath@uky.edu

**INSTRUCTIONS:**

Identify the groups or individuals reviewing the proposal; note the date of approval; offer a contact person for each entry; and obtain signature of person authorized to report approval.

**Internal College Approvals and Course Cross-listing Approvals:**

Reviewing Group	Date Approved	Contact Person (name/phone/email)	Signature
School of Mgmt	2/2010	SCOTT 7 SKELLEY KELLEY 13425   @uky.edu	Scott W. Kelley
Undergrad. Studies	4/23/2010	NANCY 7 JOHNSON 12976   uky.edu	Nancy Johnson
Action Faculty	4/30/2010	MERL 7 HACKBART 13592   @uky.edu	M. Hackbart
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		/ /	

**External-to-College Approvals:**

Council	Date Approved	Signature	Approval of Revision <sup>8</sup>
Undergraduate Council	10/26/2010		
Graduate Council			
Health Care Colleges Council			
Senate Council Approval		University Senate Approval	

Comments:

<sup>8</sup> Councils use this space to indicate approval of revisions made subsequent to that council's approval, if deemed necessary by the revising council.

**AN 306 -- Analytics Models & Methods**  
Spring 2011  
Tuesday and Thursday 12:30pm - 1:45pm, B&E 201  
College Prefix – BE; Departmental Prefix - DSIS

**Instructor:** Dr. De Liu  
**Email:** de.liu@uky.edu  
**Office:** B&E 455Y (257-1142)  
**Office Hours:** TTH 11:15-12:15pm, 2:15-3:15pm, or by appointment.

## **COURSE OVERVIEW**

Analytics models can solve a wide range of decision problems arising in business and engineering contexts, such as operation management, finance, and transportation. Millions of business professionals build Analytics models to address their daily decision problems using spreadsheet software, such as Excel (as opposed to other expensive specialized software). The spreadsheet approach to the analytics modeling is popular among top business schools due to the extreme popularity of the spreadsheet software among business professionals.

## **COURSE OBJECTIVES**

In this class, you get extensive hands-on experience with a variety of commonly used analytics techniques. Our topics include but are not limited to linear programming, network modeling, integer programming, time series forecasting, and decision analysis. This course emphasizes two components: formulating models to address real world problems and implementing models in EXCEL. We expect you to learn practical quantitative skills to enhance your future job performance.

## **STUDENT LEARNING OUTCOMES**

By the end of the semester, you can expect to

- Be familiar with most-used quantitative analytics models so that you can be aware of the opportunities of applying analytics techniques in your future businesses.
- Be able to design and implement small-scale analytics models in EXCEL.
- Know some of the advanced uses of Excel (though this course is not intended to be an Excel course)

## **TEXTBOOK & SOFTWARE**

**Text:** Ragsdale, Cliff T. Spreadsheet Modeling and Decision Analysis. **5th edition**, 2007. Ohio: South-Western College Publishing, Thomson Learning. ISBN 0-324-32150-4 / ISBN 0-324-32156-3 (with CD).

**Software:** Premium Solver for Education 5.0 (usually come with the text CD). Available on B&E computers.

## **GRADING**

<b>Midterm (1):</b>	<b>20%</b>
<b>Final Exam:</b>	<b>25%</b>
<b>Team Project (2):</b>	<b>20%, 10% each</b>
<b>Homework (12):</b>	<b>33%, 3% each. Only 11 will be counted, <u>the lowest one</u> will be automatically dropped.</b>
<b>Attendance:</b>	<b>2%, one unexcused absences is permitted. Each additional unexcused absence costs 0.5%. Please refer to the University bulletin for the definition of excused absence.</b>

Final letter grade is given according to the following (**No Curve**):

- 90 -100%: A
- 80 - 89%: B
- 65 - 79%: C
- 50 - 64%: D
- 0 - 50%: F

## ATTENDANCE

- Attendance is taken at the beginning of each class. Each present student is asked to sign an attendance sheet. Change to an absence record may require a proof of presence and must be done within two weeks of absence date.

## HOMEWORK ASSIGNMENTS

- Due time:** Each homework assignment is due before the class meeting time on the due date. Due dates are listed in our course schedule in advance. Blackboard will no longer accept homework submission 15 minutes after the class starts. **If you turn in your homework late, you will receive a zero grade for this homework.**
- All homework assignments are individual assignments.** You may discuss homework problems with fellow students but copying others' homework is forbidden and subject to severe penalty. In case of difficulty, you should seek the instructor's help. Please drop by or email the instructor.
- Name your documents in the following fashion:  

**Lastname\_Firstname\_blahblah.xls.**

For example, "*Doe\_John\_hw5.xls*" and "*Doe\_John\_hw5\_Ch3\_4.xls*." Submit your homework the designated **homework assignment folder** on Blackboard. Once you submit, you should see an "!" in your grade book. You can view your submitted files by clicking on the "!".
- Multiple files:** You must submit multiple files all at once. Blackboard prevents you from submitting additional files after you have submitted one. In case you want to submit additional files, send them to me in email.
- Homework grading:** I will post your homework grades on Blackboard usually within a week pass the due date. Homework is graded on a scale of 0-10. If you get 10, you will receive full 3 credits. If you get 9, you will receive 2.7 credits, and so on. I may give extra credits to exceptional work.

## EXAMS

- Missing Exams:** If you miss an exam, you will be given a zero. **There are NO makeup exams.** However, if you are sick or have legitimate reasons to be excused according to the University policy, you must contact the instructor prior to the exam to obtain special accommodation.
- Regrade:** In general I will not regrade an exam except there are obvious mistakes in grading. If you do require a regrade, you must submit your request within one week after receiving the exam grade.

## SCHOLARLY DISHONESTY

- Students who violate the University rules on scholastic dishonesty are subject to disciplinary penalties, including failing the course and dismissal from the University. Because scholarly dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced.

## TEAM PROJECTS

- Each team consists of 2-4 members. The purpose of team projects is to encourage collaboration, coordination, and communication among team members. Team projects uses after-chapter case problems and give you an opportunity to apply what we learn in class. Team projects also give you a chance to learn from your peers.
- Team projects are evaluated by your peers in the class (50%) and by the instructor (50%). Your peers will evaluate your team performance based on your team presentation along the lines of *validity*, *presentation style*, *interestingness*, and *creativity*. Your presentation and written report achieve two purposes: 1) to demonstrate the worth of your work (as if the audience is a client who pays you), 2) to inform the audience how you have analyzed and solved the problem (as if the audience is your peer experts).
- The instructor will grade your team project assignment based on the presentation, written report, and actual spreadsheets. The written report should be done in word. The required length is approximately 5 pages double-space. While in general every team member receives the same credit, those who lack contribution (as reflected by within-group peer evaluation) may receive partial credit.

## STUDENT WITH DISABILITIES

- If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address [jkarnes@email.uky.edu](mailto:jkarnes@email.uky.edu)) for coordination of campus disability services available to students with disabilities.

## OTHER POLICIES

- During the class, please turn off any device that may cause class disruptions, such as **cell phones**, **paggers**, and **digital players**. **Internet surfing**, **checking emails**, **text messaging**, and other activities unrelated to the instruction are prohibited.
- **Keep your Blackboard email address current and check your email inbox often.** Important messages may be delivered to you through this email (e.g. change of a homework problem, exam location and dates).
- **Seeking help.** If you need instructor's help on a problem, please **attach your working document**.

### *Tentative schedule*

Wk	Topic	Date	Assignments Due
1	Ch1:Introduction	Jan 15	Read: Ch1 and the stories in the world of Management Science (p14-15)
2	Ch2:Make vs Buy Problem	Jan 20	Read: Ch2 page 17-24 Ch3 page 45-67
	Ch3:Make vs Buy Problem	Jan 22	Read: Ch2 page 17-24 Ch3 page 45-67
3	Ch3:Investment, Transportation	Jan 27	Read: page 65-78 <b>HW1: 3-20 (i.e., Ch3 problem 20), 3-28</b>
	Ch3:Blending	Jan 29	Read: page 78-85
4	Ch3:Production Planning	Feb 03	Read: page 85-90 <b>HW2: 3-19, 3-32</b>
	Ch3:Cash Flow Problem	Feb 05	Read: page 90-102
5	Ch4:Sensitivity Analysis	Feb 10	Read: page 136-158 <b>HW3: 3-24, 3-39</b>
	Ch5:Transshipment	Feb 12	Read: page 177-184
6	Ch5:Shortest Path	Feb 17	Read: page 184-189 <b>HW4: 4-4, 4-21</b>
	Ch5:Generalized Network Flow	Feb 19	Read: page 194-200

7	Ch5:Maximal Flow and Other	Feb 24	Read: page 201-208 <b>HW5: 5-3(questions a-c), 5-32</b>
	<b>No Class - Prep for Team Project</b>	Feb 26	
8	<b>Team Project 1 Presentations</b>	Mar 03	<b>Due: Team Proj 1 Documents</b>
	<b>Mid-Term Ch1-5 (In-Class)</b>	Mar 05	
9	Ch6:Employee Scheduling, Capital Budgeting	Mar 10	Read: page 232-254
	Ch6:Fixed-Charge Problem (Big M)	Mar 12	Read: page 254-261 <b>HW6: 5-30, 6-13</b>
10	<b>Spring Break</b>	Mar 17	
	<b>Spring Break</b>	Mar 19	
11	Ch7:Goal Programming	Mar 24	Read: page 297-307 <b>HW7: 6-15, 6-14 (a fixed-cost problem)</b>
	Ch7:Multiple Objective LP	Mar 26	Read: page 307-321
12	Ch11: Time Series Forecasting, Stationary Data	Mar 31	Read: page 485-499 <b>HW8: 7-12, 7-16 (Question a-c)</b>
	Ch11: Seasonality	Apr 02	Read: page 500-507
13	Ch11: Trend models, double moving avg, Holt's method	Apr 07	Read: page 507-514 <b>HW9: Ch 11 problems 23 to 26</b>
	Ch11: Holt-Winter's methods	Apr 09	Read: page 514-522
14	Ch11: Linear and Quadratic Trend Regression	Apr 14	Read: page 522-528, Ch9 <b>HW10: Ch 11 problems 17 to 21. For prob 19, only do a-c.</b>
	Ch11: Seasonality with Regression Models	Apr 16	Read: page 528-538
15	<b>Team Project 2 Presentations</b>	Apr 21	<b>Due: Team Proj 1 Documents</b>
	Ch15: Deterministic Decision Rule	Apr 23	Read: page 724-733 <b>HW11: Ch 11 problems 15-16, 22 for the last problem, use the seasonal regression model on page 535</b>
16	Ch15: Probabilistic Methods	Apr 28	Read: page 733-739
	TBA	Apr 30	<b>HW12: 15-4 15-19 question a-c</b>
	<b>Final Ch6-15 (take home)</b>		

Last Revision 8/10/2010