Eastern Illinois University
New Course Proposal Format
(Approved by CAA on 4/3/14 and CGS on 4/15/14, Effective Fall 2014)

Banner/Catalog Information (Coversheet)

1. _X___New Course or _____Revision of Existing Course

2. **Course prefix and number:** ___MBA 5500A_____

3. **Short title:** ___Quantitative Modeling_____

4. **Long title:** ____ Quantitative Modeling _____

5. **Hours per week:** __3_ Class   __0_ Lab   _3__ Credit

6. **Terms:** ___ Fall   ___ Spring   ___ Summer   _X__ On demand

7. **Initial term**: ___ Fall   _X__ Spring   ___ Summer   Year: _2018_____

8. **Catalog course description:** __ A study of practical statistics and operations research topics using spreadsheet models. Statistical concepts include confidence intervals, hypothesis testing, chi-square tests, t-tests, ANOVA's, and correlation analysis. Operations research topics will integrate finance, marketing and operation management models using spreadsheets. This course is available only to students in the MBA Online program or by permission of the Coordinator, Graduate Business Studies. __

9. **Course attributes:**

   General education component: ____N/A_____

   ___ Cultural diversity ___ Honors ___ Writing centered   ___ Writing intensive ___Writing active

10. **Instructional delivery**
    Type of Course:

    _X__ Lecture   ___ Lab   ___ Lecture/lab combined   ___ Independent study/research

    ___ Internship   ___ Performance   ___ Practicum/clinical ___ Other, specify: _____

    Mode(s) of Delivery:

    ___ Face to Face   _X__ Online   ___ Study Abroad

    ___ Hybrid, specify approximate amount of on-line and face-to-face instruction_____

11. Course(s) to be deleted from the catalog once this course is approved. ____NONE_____

12. **Equivalent course(s):** ___MBA 5500_____

    a. Are students allowed to take equivalent course(s) for credit? ___ Yes   _X__ No

13. **Prerequisite(s):** BUS 3950

    a. Can prerequisite be taken concurrently? ___ Yes   _X__ No

b. **Minimum grade required for the prerequisite course(s)?** _C__

c. **Use Banner coding to enforce prerequisite course(s)?** ___ Yes _X__ No

d. **Who may waive prerequisite(s)?**

___ No one ___ Chair ___ Instructor ___ Advisor _X__ Other (specify) Coordinator, Graduate Business Studies

14. **Co-requisite(s):** ___NONE_____

15. **Enrollment restrictions**

a. **Degrees, colleges, majors, levels, classes which <u>may</u> take the course:** _ MBA, Graduate Students

b. **Degrees, colleges, majors, levels, classes which may <u>not</u> take the course:** _Undergraduates_____

16. **Repeat status:** _X__ May not be repeated ___ May be repeated once with credit

17. **Enter the limit, if any, on hours which may be applied to a major or minor:** _3_

18. **Grading methods:** _X__ Standard ___ CR/NC __ Audit ___ ABC/NC

19. **Special grading provisions:**

NA_ Grade for course will <u>not</u> count in a student's grade point average.

NA_ Grade for course will <u>not</u> count in hours toward graduation.

NA_ Grade for course will be removed from GPA if student already has credit for or is registered in: _____

NA_ Credit hours for course will be removed from student's hours toward graduation if student already has credit for or is registered in: _____

20. **Additional costs to students:**
Supplemental Materials or Software__included in Course Fee_____

Course Fee ___No _X_ Yes. Explain if yes_$100 course fee for program simulations, software and supplemental materials that will be purchased in bulk and distributed online in the course materials

21. **Community college transfer:**

___ A community college course may be judged equivalent.

_X__ A community college may <u>not</u> be judged equivalent.

Note: Upper division credit (3000+) will <u>not</u> be granted for a community college course, even if the content is judged to be equivalent.

Rationale, Justifications, and Assurances (Part I)

1. _x__Course is required for the major(s) of Master of Business Administration

   ___Course is required for the minor(s) of _____

   ___Course is required for the certificate program(s) of _____

   ___ Course is used as an elective

2. **Rationale for proposal**: This course is a required course in the MBA Online program. The course objectives and content are the same as MBA 5500; the MBA 5xxxA's courses are being added to address differential tuition rates and separate course fees that are unique to the MBA Online program courses.

3. **Justifications for (answer N/A if not applicable)**

   Similarity to other courses: Intentionally the same course, same degree program, but is needed to address administrative differences between degree program designs (online versus face-to-face).

   Prerequisites: Material in MBA level course requires knowledge of operations management for terminology, concepts, theories and practices that will be applied in the MBA course. BUS 2810 – Business Statistics is a prerequisite for BUS 3950 and is expected to be completed as well.

   Co-requisites: NONE

   Enrollment restrictions: Due to the specificity of the research and content examined, and the specialized MBA Online program structure, enrollment in this course will be restricted to MBA Online students or those with permission of the Coordinator, Graduate Business Studies.

   Writing active, intensive, centered: N/A

4. **General education assurances (answer N/A if not applicable)**

   General education component: N/A

   Curriculum: N/A

   Instruction: N/A

   Assessment: N/A

5. **Online/Hybrid delivery justification & assurances (answer N/A if not applicable)**

   Online or hybrid delivery justification: Offering and instructing this course through an online model allows and increases the enrollment probability of alumni and other interested students who have moved away from campus, are currently employed, or live outside the East Central Illinois area. Online delivery of this course provides the opportunity to market to these

potential students through the MBA online program offered by the School of Business at EIU.

Instruction: Lectures equivalent to those from the face-to-face courses may be recorded & posted online. All faculty who will deliver this course online are/will be OCDi (or appropriate equivalent) trained.

Integrity: Students will take quizzes and exams through an online testing taking monitoring system, or they will take them at a proctored facility such as a community college in their area.

Interaction: At the discretion of the faculty, provisions and requirements would vary but generally will utilize Email, Web-Based Discussions, and Web-conferencing. Email will be utilized in addressing individual student questions/communication. The web-based discussions (via a LMS-type environment) will be used to gauge student understanding of the materials presented via web-based video delivery and to provide clarification from the instructor. Web-based conferencing will be used to provide students with the opportunity to present their work to all members of the class, receive real-time feedback in the form of questions and discussion of their presentation and interact in real time with the faculty member and classmates.

Model Syllabus (Part II)

Please include the following information:

1. Course number and title: MBA 5500A Quantitative Modeling

2. Catalog description: A study of practical statistics and operations research topics using spreadsheet models. Statistical concepts include confidence intervals, hypothesis testing, chi-square tests, t-tests, ANOVA's, and correlation analysis. Operations research topics will integrate finance, marketing and operation management models using spreadsheets. This course is available only to students in the MBA Online program or by permission of the Coordinator, Graduate Business Studies.

3. Learning objectives: Upon completion of the course, students will be able to:

   1.   Apply commonly used statistical tools including graphical presentation of data, confidence intervals, hypothesis testing, chi-squared tests, t-tests, ANOVA's, correlation analysis, and regression analysis to solve business problems (GLG 1, 2).
   2.   Apply operations research/management science theories to optimize and perform sensitivity analysis of models (GLG 1, 2).
   3.   Evaluate decision alternatives using techniques from management science (GLG 2, 3, 4).
   4.   Use advanced spreadsheet modeling skills to solve problems in all business disciplines (GLG 1, 2).
   5.   Utilize the Excel Solver Add In to optimize linear programming, network, integer programming, and nonlinear programming spreadsheet models (GLG 2).

4. Course materials:
Business Analytics: Data Analysis & Decision Making, 5E (custom published EIU Edition containing Chapters 7-11) by S. Christian Albright and Wayne L. Winston, Cengage Learning, 2015.

Practical Management Science, 5E (custom published EIU Edition containing Chapters 1-7) by Wayne L. Winston and S. Christian Albright, Cengage Learning, 2015.

5. Weekly outline of content:

COURSE CONTENTS	
TOPIC	**APPROXIMATE CLASS HOURS**
Hypothesis Testing on One Population Parameter	2.5
Describing Multivariate Data	2.5
Hypothesis Testing on Two Population Parameters	2.5
Regression Analysis and Chi-Square Test of Independence	3.75
One-Way and Two-Way ANOVA's	3.75
Introduction to spreadsheet modeling	2.5
Introduction to linear programming Graphical solution method Sensitivity analysis	3.75
Linear programming formulations	6.25
Network Models	2.5
Integer Programming	3.75
Nonlinear Programming	3.75
Final exam	2.0
TOTAL	39.5

6. Assignments and evaluation, including weights for final course grade:

Examinations
Midterm Exam	150 points	30.00%
Final Exam	150 points	30.00%
Total for Examinations	300 points	60.00%

Homework and Projects
Homework* (13 @ 10 each with low score dropped)	120 points	24.00%
Case Project	40 points	8.00%
Article Review	40 points	8.00%
Total for Homework and Projects	200 points	40.00%
Overall Total	**500 points**	100.00%

7. Grading scale:
Final grades will be calculated in accordance with the following scale:

A ($\geq$ 450 points)   90 – 100 % of Overall Total points
B ($\geq$ 400 points but < 450 points) 80 – 89.999%
C ($\geq$ 350 points but < 400 points) 70 – 79.999%
D ($\geq$ 300 points but < 350 points) 60 – 69.999%
F (< 300 points)   < 60%

8. Correlation of learning objectives to assignments and evaluation.

LO	Midterm	Final Exam	Homework	Case Project	Article Review
1	X		X		
2		X	X	X	X
3		X	X	X	X
4	X		X		
5		X	X	X	

Date approved by discipline (MIS/OM): 9/5/2017
Date approved by the department or school: 9/12/2017
Date approved by the college curriculum committee: 9/18/2017
Date approved by the Honors Council (*if this is an honors course):* na
Date approved by CAA: na   CGS: