MEMORANDUM TO: Ogden College of Science and Engineering Curriculum Committee

Dr. Jack Rudolph	Dr. James Gary	Dr. Terry Leeper
Dr. Martin Stone	Dr. Zhonghang Xia	Dr. John Khouryieh
Dr. Bruce Schulte	Dr. Julie Ellis	Dr. Peter Hamburger
Dr. Scott Grubbs	Dr. Warren Campbell	Dr. Keith Andrew
Dr. Cathleen Webb	Dr. David Keeling	Dr. Attila Por
Dr. Hemali Rathnayake	Dr. Fred Siewers	Dr. Alex Barzilov
Dr. David Erbach		

FROM: Andrew Ernest, Chair

SUBJECT: Agenda for <u>Thursday, October 13, 2011,</u> at 3:45 p.m. in COHH 4123

A. OLD BUSINESS:

I. Consideration of the minutes of the September 1, 2011, meeting.

B. NEW BUSINESS:

<u>Consent Items</u>

1. Proposal to Revise Course Prerequisites
    a. EE 380, Microprocessors, 4 hours

2. Proposal to Revise Course Prerequisites/Corequisites
    a. EE 210, Circuits and Networks I, 3.5 hours
    b. EE 473, Introduction to Electromagnetic Fields and Waves, 3 hours

3. Proposal to Revise Course Title
    a. AMS 301, Science of Food Processing, 3 hours

<u>Action Items</u>

<u>Department of Agriculture</u>

1. Proposal to Create a New Course
    a. HORT 426, Viticulture, 3 hours

<u>Department of Architectural and Manufacturing Sciences</u>

1. Proposal to Create a New Certificate Program
    a. Certificate in Food Processing and Technology, 18 hours

2. Proposal to Create a New Minor Program
    a. Minor in Food Processing and Technology, 18 hours

<u>Department of Mathematics and Computer Science</u>

1. Proposal to Create a New Course
    a. INFO 336, Database and Information Retrieval, 3 hours

2. Proposal to Create a New Certificate Program
    a. CNSS 4011, Information Assurance Certificate, 4 hours

3. Proposl to Revise Course Credit Hours
    a. MATH 498, Senior Seminar, 1-3 hours

SKyTeach

1. Proposal to Revise a Program
    a. Ref. #734, Middle School Science Education ("MSSE"), 51 hours

C. OTHER BUSINESS

Information Only

1. Proposal to Create a Temporary Course
    a. BIOL 345, Fire Ecology and Management, 1 hour
    b. BIOL 457, Herpetology, 4 hours

Minutes – OCSE Curriculum Committee **September 1, 2011**

MEMBERS PRESENT:

Dr. Martin Stone
Dr. Scott Grubbs
Dr. Cathleen Webb
Dr. Hemali Rathnayake
Dr. David Erbach
Dr. James Gary
Dr. Attila Por
Dr. Zhonghan Xia
Dr. Warren Campbell
Dr. David Keeling
Dr. Fred Siewers
Dr. John Khouryieh
Dr. Peter Hamburger

Dr. Steven Gibson for Dr. Alex Barzilov

FROM: Andrew Ernest, Chair

OLD BUSINESS:

Keeling/Campbell moved approval of the minutes of the May 5, 2011, meeting. Motion passed.

NEW BUSINESS:

Consent Items

Proposal to Delete a Course

a. CE 244, Engineering Statistics, 3 hours
b. CE 366, Mechanical and Electrical Systems, 3 hours
c. CE 466, Contracts and Specifications, 3 hours
d. GEOG 197, Human Geography Recitation Laboratory, 1 hour

Proposal to Revise Course Prerequisites

a. GEOG 391, Data Analysis and Interpretation, 3 hours

The consent items were accepted.

Action Items

Department of Engineering

Hamburger/Keeling moved approval of the proposal to revise a program, Ref. #361, Minor in Floodplain Management. Motion passed with friendly amendment to add GEOG 459 and GEOG 461 as electives.

Department of Geography and Geology

Keeling/Hamburger moved approval of the proposal to revise a program, Ref. #677, Geology: Professional Major and Ref. #577, Geology: Professional Extended Major as one item. Motion passed.

Keeling/Campbell moved approval of the proposal to revise a program, Ref. #647, Geography. Motion passed.

Keeling/Hamburger moved approval of the proposal to revise a program, Ref. #576, Major in Geographic Information Science. Motion passed with friendly amendment to change CS 118 Java, 3 hours to CS 118 Computer Science I, 4 hours.

OTHER BUSINESS

There being no other business the meeting was adjourned at 4:17 p.m.

Proposal Date: 08/20/11

Ogden College of Science and Engineering
Department of Engineering
Proposal to Revise Course Prerequisites
(Consent Item)

Contact Person: Mark Cambron mark.cambron@wku.edu 745-8868

1. **Identification of course**
   - 1.1 Course prefix (subject area) and number: EE 380
   - 1.2 Title: Microprocessors
   - 1.3 Credit hours: 4.0

2. **Current prerequisites:** EE 180, EE 210, and CS 239

3. **Proposed prerequisites:** EE 180 (C or better), EE 210 and CS 239 (C or better)

4. **Rationale for the revision of course prerequisites**: A "C" or better in EE 180 and CS 239 will better prepare students for EE 380.

5. **Effect on completion of major/minor sequence:** none

6. **Proposed term for implementation:** Spring 2012

7. **Dates of prior committee approvals:**

Department of Engineering	**13 September 2011**
Ogden College Curriculum Committee	
University Curriculum Committee	
University Senate	

Attachment: Course Inventory Form

Proposal Date: 08/20/11

College of Science and Engineering
Department of Engineering
Proposal to Revise Course Prerequisites/Corequisites
(Consent Item)

Contact Person: Mark Cambron, mark.cambron@wku.edu 745-8868

1. **Identification of course**
   - 1.1 Course prefix (subject area) and number: EE 210
   - 1.2 Title: Circuits and Networks I
   - 1.3 Credit hours: 3.5

2. **Current prerequisite:** Math 137
   Current corequisite: Physics 265

3. **Proposed prerequisite:** Math 137 (C or better)
   Proposed prerequisites or corequisites: Physics 265

4. **Rationale for the revision of course prerequisites/corequisites**: PHYS 265 is being changed from a corequisite to a prerequisites or corequisite. A "C" or better in MATH 137 will better prepare students for EE 210.

5. **Effect on completion of major/minor sequence:** No effect

6. **Proposed term for implementation:** Spring 2012

7. **Dates of prior committee approvals:**

Department of Engineering	**13 September 2011**
Ogden College Curriculum Committee	
University Curriculum Committee	
University Senate	

Attachment: Course Inventory Form

Proposal Date: 8/20/2011

Ogden College of Science and Engineering
Department of Engineering
Proposal to Revise Course Prerequisites/Corequisites
(Consent Item)

Contact Person: Mark E. Cambron, mark.cambron@wku.edu, 270-745-8868

1. Identification of course:

1.1 Course prefix (subject area) and number: EE 473
1.2 Course title: Introduction to Electromagnetic Fields and Waves
1.3 Credit hours: 3.0

2. Current prerequisites: MATH 237, MATH 331 and PHYS 265
Current corequisites: none

3. Proposed prerequisites: MATH 237, MATH 331 and PHYS 265 (C or better)
Proposed corequisites: none

4. Rationale for the revision of prerequisites/corequisites:
A "C" or better in PHYS 265 will better prepare students for EE 473.

5. Effect on completion of major/minor sequence: None

6. Proposed term for implementation: Spring 2012

7. Dates of prior committee approvals:

Engineering Department: 13 September 2011

Ogden College Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

Proposal Date: 08/17/2011

Ogden College of Science & Engineering
Department of Architectural & Manufacturing Sciences
Proposal to Revise Course Title
(Consent Item)

Contact Person: John Khouryieh, email: hanna.khouryieh@wku.edu , phone: 270-852-6407

1. Identification of course:
- 1.1 Current course prefix (subject area) and number: AMS 301
- 1.2 Current course title: Science of Food Processing
- 1.3 Credit hours: 3

2. Proposed course title: Introduction to Food Science and Technology

3. Proposed abbreviated course title: Intro to Food Sci & Technology
(max. of 30 characters including spaces)

4. Rationale for the revision of course title: this course is the foundation course in the food processing and technology concentration. Its primary goal is to introduce students to the basics concepts of food science and technology, not to the science of food processing. The current course title contradicts with other food processing courses. Students need to be taught the science of food in this course, not the science of food processing. We already have two courses focusing on the principles of food processing (AMS352 and AMS462).

5. Proposed term for implementation: Spring 2012

6. Dates of prior committee approvals:

AMS Department/Division: September 9, 2011___

OCSE Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

Proposal Date: September 1, 2011

Ogden College of Science and Engineering
Department of Agriculture
Proposal to Create a New Course
(Action Item)

Contact Person: Todd Willian, todd.willian@wku.edu, 745-5969

1. Identification of proposed course:

1.1 Course prefix (subject area) and number: HORT 426
1.2 Course title: Viticulture
1.3 Abbreviated course title: Viticulture
1.4 Credit hours and contact hours: 3
1.5 Type of course: Lecture
1.6 Prerequisites: AGRO 110 and AGRO 350 or permission of instructor.
1.7 Course catalog listing: An introductory study of grape culture including morphology and growth habit, geographical distribution, dormant pruning techniques, canopy management, management of grapevine pests, and vineyard establishment/maintenance. Spring Semester.

2. Rationale:

2.1 Reason for developing the proposed course:

Grape acreage and production have increased dramatically in Kentucky and throughout the United States during the past two decades. Since 1997 grape acreage in Kentucky has increased three fold and the number of licensed wineries have increased more than four fold. Therefore, students preparing for careers in agriculture would benefit from a better understanding of the culture and utilization of this species, the most valuable fruit commodity in the United States.

2.2 Projected enrollment in the proposed course:

Approximately 20 to 25 students per semester based upon enrollment in two previous temporary course offerings.

2.3 Relationship of the proposed course to courses now offered by the department:

The proposed course will significantly expand upon the brief grape information presented in HORT 312 (Introduction to Horticulture) and HORT 412 (Modern Fruit Production). HORT 312 and HORT 412 provide introductory overviews of many horticultural crops but are not designed to provide a comprehensive understanding of the grapevine, its culture and utilization.

2.4 Relationship of the proposed course to courses offered in other departments:

BIOL 222/223 (Plant Biology and Diversity/Lab) provides an overview of anatomy and physiology of higher and lower plants.
GEOG 278 (Geography of Food and Agriculture) examines the relationships between crop distribution and cultural preference for those crops.

The above courses focus upon a broad array of crop and non-crop species but do not provide a comprehensive examination of any particular crop species.

2.5 Relationship of the proposed course to courses offered in other institutions:

Many institutions offer similar courses although currently no Kentucky post-secondary institution offers a comparable course. Comparable courses include: HORT 59000 – Commercial Grape and Wine Production, Purdue University; VWT 130 – General Viticulture, Napa Valley College; and AGP 711 – Viticulture, Missouri State University.

3. Discussion of proposed course:

3.1 Upon completion of this course students will have gained:

- Historical overview of global and domestic grape production and consumption
- Working knowledge of grapevine anatomy and morphology
- Understanding of vineyard establishment and maintenance techniques with an emphasis upon canopy management
- Understanding of the influence of site selection, soil properties and climatic conditions upon grapevine growth and fruit yield/quality
- Knowledge of grapevine pests, and techniques for their management

3.2 Content outline:

- The Grape Plant (Anatomy & Morphology)
- Grape Origin, History and Uses
- Cultivars and Clones
- Vegetative Growth and Development
- Reproductive Growth and Development
- Vineyard Establishment and Maintenance
- Seasonal Vineyard Management
- Mineral Nutrition of Grapevines
- Grapevine Pests and Pest Management

3.3 Student expectations and requirements:

Assigned readings, examinations and quizzes, and hands-on canopy management training in the WKU vineyards. Individual and/or group presentations may be assigned.

3.4 Tentative texts and course materials:

Creasy, G.L. and L.L. Creasy. (2009). Grapes: Crop Production Science in Horticulture 16. CABI Press, Cambridge, MA. 295 p.

Bordelon, B., et al. (2005). Midwest Grape Production Guide. The Ohio State University Extension, Bulletin 919. 155 p.

4. Resources:

4.1 Library resources: See attached Library Resource Form and Bibliography

4.2 Computer resources: Adequate

5. Budget implications:

5.1 Proposed method of staffing: Current faculty.

5.2 Special equipment needed: None

5.3 Expendable materials needed: None

5.4 Laboratory materials needed: WKU vineyards located on the WKU Agriculture Research and Education Complex.

6. Proposed term for implementation: Spring 2012

7. Dates of prior committee approvals:

Agriculture Department:	September 22, 2011
OCSE Curriculum Committee	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

Attachment: Bibliography, Library Resources Form, Course Inventory Form

Proposal Date: 08/17/2012

Ogden College for Science and Engineering
Department of Architectural & Manufacturing Sciences
Proposal to Create a New Certificate Program
(Action Item)

Contact Person: Dr. John Khouryieh, hanna.khouryieh@wku.edu, 270-82-6407

1. Identification of program:

1.1 Program title: Certificate in Food Processing and Technology

1.2 Required hours in program: 18

1.3 Special information: Non-Degree Certificate intended for students who are pursuing a career in food processing and are not enrolled currently in an undergraduate program.

1.4 Catalog description: The certificate in Food Processing & Technology (reference number___) requires completion of 18 hours, including 9 hours of required courses and 9 hours of elective courses. The required courses are AMS 301, 303, and 352. Students must choose 9 additional hours from the following electives: AMS 271, 381, 395, 443, 462.

2. Objectives of the proposed certificate program: The objective of the certificate is to provide professionals working in the food industry with the necessary knowledge in food processing, quality assurance, and food safety to advance their careers.

3. Rationale:

3.1 Reason for developing the proposed certificate program: This certificate is designed for professionals working in the food processing industry who have a high school diploma or a bachelor's degree in another field. The certificate will provide professionals working in the food industry with the necessary knowledge in food processing, quality assurance, and food safety to succeed and advance their careers in the food industry. Food industry managers in Kentucky have indicated that having employees with a certificate in food processing would add value to the production environment and that such a certificate would be beneficial for graduates seeking managerial positions in the food industry.

3.2 Relationship of the proposed certificate program to other programs now offered by the department: The AMS Department offers a baccalaureate degree in Advanced Manufacturing with a Concentration in Food Processing and Technology; this certificate is not available to students in that concentration, nor to students who complete the proposed Minor in Food Processing and Technology.

3.3 Relationship of the proposed certificate program to certificate programs offered in other departments: None

3.4 Projected enrollment in the proposed certificate program: 20. There currently are two employees from Unilever Company who are taking food courses and want to obtain the Food Processing & Technology Certificate. Managers from Unilever,

Country Bakery Ovens, Bell Brands and Purdue Farms Companies have shown a strong interest in the certificate and will support their employees' efforts to complete the program.

3.5 Similar certificate programs offered elsewhere in Kentucky and in other states (including programs at benchmark institutions): Food science certificates are offered at Kansas State University, Ohio State University, and Washington State University.

3.6 Relationship of the proposed certificate program to the university mission and objectives: The certificate program is consistent with WKU mission and objectives by creating new programs and strengthening its curriculum to improve the quality of life and economic well- being of the citizens of Kentucky and beyond.

4. Curriculum:

Core Courses (9 credits)	**Credit hours**
AMS 301 Introduction to Food Science and Technology	3
AMS 303 Food Laws and Regulations	3
AMS 352 Food Processing: Unit Operations	3
Elective Courses (choose 9 credits)	
AMS 381 Food Quality Assurance	3
AMS 395 Fundamentals of HACCP	3
AMS 443 Food Packaging	3
AMS 462 Commodity Food Processing	3
AMS 271 Industrial Statistics	3

5. Budget implications: None

6. Proposed term for implementation: Spring 2012

7. Dates of prior committee approvals:

AMS Department/Division: __September 9, 2011_

OCSE Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Proposal Date: 08/18/2011

Ogden College of Science and Engineering
Department of Architectural & Manufacturing Sciences
Proposal to Create a New Minor Program
(Action Item)

Contact Person: Dr. John Khouryieh, Email: hanna.khouryieh@wku.edu, ph: 270-852-6407

1. Identification of program:

1.1 Program title: Minor in Food Processing and Technology

1.2 Required hours in minor program: 18 hr

1.3 Special information: This minor is not available for students with a Food Processing and Technology Concentration in the Advanced Manufacturing Major.

1.4 Catalog description: The Minor in Food Processing & Technology (reference number___) requires completion of at least 18 hours, including 9 hours of required courses and at least 9 hours of elective courses to be selected in consultation with an advisor. The required courses are AMS 301, 303, and 352. Students must choose at least 9 hours from the following electives: ANSC 340; AMS 381, 395, 443, and 462.

2. Rationale:

2.1 Reason for developing the proposed minor program: The minor in Food Processing and Technology will provide students in other majors with the necessary knowledge of food processing principles and concepts, increasing their career opportunities in the food processing industry. The minor should be especially attractive to students in agriculture, animal science, nutrition, chemistry, biological sciences, technology management, and business.

2.2 Projected enrollment in the proposed minor program: 20. Many students in the Technology Management program currently are taking food processing courses and have shown strong interests in the idea of having this minor available to them. There are more than 80 students in the Technology Management program and we are projecting that at least 25% of them will select the Minor.

2.3 Relationship of the proposed minor program to other programs now offered by the department: The AMS Department offers a baccalaureate degree in Advanced Manufacturing with a Concentration in Food Processing and Technology; this minor is not available to students in that concentration. The department is also proposing a non-degree certificate program for professionals employed in the food industry.

2.4 Relationship of the proposed minor program to other university programs: The Department of Consumer and Family Sciences offers a minor in Food Service Management, but it is totally different from the proposed program. The Food Service Management program focuses on the food service industry (restaurants, school and hospital catering, etc.), while the Minor in Food Processing & Technology program will focus on the food manufacturing industry.

2.5 Similar minor programs offered elsewhere in Kentucky and in other states (including programs at benchmark institutions): There are no similar minor programs offered in Kentucky.
In other States:
Michigan State University: Minor in Food Processing and Technology
Kansas State University: Minor in Food Science
University of Tennessee at Knoxville: Minor in Food Science
University of West Virginia: Minor in Food Science Technology
North Carolina State University: Minor in Food Science
California State University-Fresno: Minor in Food & Nutritional Sciences

2.6 Relationship of the proposed minor program to the university mission and objectives: The proposed minor program is consistent with WKU mission and objectives by creating new programs and strengthening its curriculum to improve the quality of life and economic well- being of the citizens of Kentucky and beyond.

3. Objectives of the proposed minor: The objectives of the Minor in Food Processing and Technology are to provide students in other majors with the necessary knowledge in food processing principles and concepts and to broaden their career opportunities in the food industry.

4. Curriculum:

Required Core Courses (9 credits)	**Credit hours**
AMS 301 Introduction to Food Science and Technology	3
AMS 352 Food Processing: Unit Operations	3
AMS 303 Food Laws and Regulations	3
Elective Courses (choose 9 credits)	
AMS 381 Food Quality Assurance	3
AMS 395 Fundamentals of HACCP	3
AMS 443 Food Packaging	3
AMS 462 Commodity Food Processing	3
ANSC 340 Meats and Meat Products	3

5. Budget implications: None

6. Proposed term for implementation: Spring 2012

7. Dates of prior committee approvals:

AMS Department September 9, 2011___

OCSE Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Proposal Date: August 30, 2011

Odgen College of Science and Engineering
Department of Mathematics and Computer Science
Proposal to Create a New Course
(Action Item)

Contact Person: Huanjing Wang, huanjing.wang@wku.edu, 745-2672
Zhonghang Xia, zhonghang.xia@wku.edu, 745-6459

1. Identification of proposed course:

1.1 Course prefix (subject area) and number: INFO 336
1.2 Course title: Database and Information Retrieval
1.3 Abbreviated course title: Database & Info Retrieval
1.4 Credit hours and contact hours: 3 credit hours and 3 contact hours
1.5 Type of course: L
1.6 Prerequisites: CS 180 with a grade of C or better
1.7 Course catalog listing:

Theory, models and practical design issues of information retrieval and database management, including relational database design, development, implementation and security, information retrieval from unstructured data (text), and web search engine. May not be counted toward a computer science major or minor.

2. Rationale:

2.1 Reason for developing the proposed course:
This course is proposed for the informatics program. Students will gain experience in the design and implementation of database and information retrieval systems.

2.2 Projected enrollment in the proposed course:
One session per year; 15-20 students per year based upon projected enrollment in the informatics program.

2.3 Relationship of the proposed course to courses now offered by the department:
The department currently offers CS 251, Introduction to Database. CS 251 is intended for computer science majors and focuses on the theory of databases, while INFO 336 is intended for students in the informatics program and introduces the foundation of database and information retrieval from unstructured data. No other comparable undergraduate course is offered by the department.

2.4 Relationship of the proposed course to courses offered in other departments:
The Department of Computer Information Systems offers Database Administration I (CIT 350) and Database Administration II (CIT 352), focusing on database applications for business use. The Department of Geography and Geology offers GIS Databases (GEOG 443). This course focuses on the ESRI

Geodatabase model in ArcGIS desktop software along with spatial database engines used with database management systems software. INFO 336 is for the informatics program and requires unique programming skills.

2.5 Relationship of the proposed course to courses offered in other institutions:
Some universities offer a similar course at the junior level, such as the University of Washington (INFO-340: Database Management and Information Retrieval) and University of Wisconsin–Milwaukee (L&I Sci 410: Database Information Retrieval systems).

3. Discussion of proposed course:

3.1 Course objectives:
By completing this course, students will

- Understand basic database concepts and theories
- Learn the standard database language SQL to retrieve and process data in databases
- Learn database design principles and processes
- Learn the function and organization of an information retrieval (IR) system, including documents, document collections, terms, queries, matching, ranking, and results
- Understand the concepts for evaluating information systems
- Understand how the search engine works

3.2 Content outline:

- Fundamental concepts in database and information system
- Relational model and query languages
- Conceptual and logical database design
- Programmatic SQL
- Database security
- Basic IR models
- Experimental evaluation of IR
- Query operations and languages
- Text representation
- Web search

3.3 Student expectations and requirements:
Course grades will be determined by student performance on class activities, projects, assignments and examinations.

3.4 Tentative texts and course materials:
Connolly, T. M. & Begg, C. E. (2010). *Database Systems: A Practical Approach to Design, Implementation, and Management* (5th Edition) New York: Addison-Wesley Publishing.
ISBN-10: 0321523067

Belew, R. K. (2001). Finding Out About: A Cognitive Perspective on Search Engine Technology and the WWW. New York: Cambridge University Press. ISBN: 0521630282

"Introduction to Information Retrieval" by C. Manning, P. Raghavan, and H. Schutze, Cambridge University Press
ISBN-10: 0521865719

4. Resources:

4.1 Library resources:
None

4.2 Computer resources:
Existing computer lab

5. Budget implications:

5.1 Proposed method of staffing:
Existing faculty

5.2 Special equipment needed:
None

5.3 Expendable materials needed:
None

5.4 Laboratory materials needed:
None

6. Proposed term for implementation: Fall 2012

7. Dates of prior committee approvals:

Math and CS Department: _____Sept. 22, 2011__

OCSE Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Proposal Date: 4/8/11

Ogden College of Science and Engineering
Department of Mathematics and Computer Science
Proposal to Create a New Certificate Program
(Action Item)

Contact Person: Rong Yang, rong.yang@wku.edu, 745-2940
James Gary, james.gary@wku.edu, 745-6373

1. Identification of program:

1.1 Program title:
CNSS 4011 Information Assurance Certificate

1.2 Required hours in program:
6 hours

1.3 Special information:
The Information Assurance Courseware Evaluation (IACE) Program has evaluated WKU's CS 157 and CS 257 courses and verified that they meet all of the requirements of the Committee on National Security Systems (CNSS) National Training Standard for Information Systems Security (INFOSEC) Professionals, NSTISSI No. 4011.

As a result, WKU is entitled to issue a 4011 information assurance certificate to any student who successfully completes that sequence of two courses with a grade of C or better in each course.

1.4 Catalog description:
CNSS 4011 Information Assurance Certificate requires a minimum of 6 semester hours. It is designed for students wishing to gain knowledge in the information assurance area. The student pursuing the certificate must complete the following course sequence with a grade of C or better in each course:

CS 157, Information Security I, (3 hours)
CS 257, Information Security II, (3 hours)

2. Objectives of the proposed certificate program:

The purpose of offering this certificate is to provide students with nationally recognized documentary evidence of their information assurance training.

3. Rationale:

3.1 Reason for developing the proposed certificate program:

Satisfying the 4011 standard is the first step in the process of obtaining a CAE (Center of Academic Excellence in Information Assurance) designation for Western Kentucky University.

3.2 Relationship of the proposed certificate program to other programs now offered by the department:
None

3.3 Relationship of the proposed certificate program to certificate programs offered in other departments:
None

3.4 Projected enrollment in the proposed certificate program:
20 to 30 students annually based upon the enrollment of CS 157 and CS 257.

3.5 Similar certificate programs offered elsewhere in Kentucky and in other states (including programs at benchmark institutions):
Many universities that have satisfied the 4011 standard offer their students a certificate for completing the required coursework. Examples include: Florida State University, New Jersey City University, the National Defense University, Villanova University, Indiana University of Pennsylvania, and the University of Maryland University College. To the best of our knowledge, no university in Kentucky is currently offering a 4011 certificate.

3.6 Relationship of the proposed certificate program to the university mission and objectives:
The training provided in the courses leading up to 4011 certification certainly provides tools for students at WKU to be both productive and socially responsible members of the global society as stated in the mission statement.

4. Curriculum:

CS 157, Information Security I, (3 hours)
CS 257, Information Security II, (3 hours)

Both of these courses have already been approved and are being offered on a regular schedule.

5. Budget implications:

Existing faculty will continue to teach the courses in the program.

6. Proposed term for implementation:

Ideally, we would like to be able to issue certificates to students who complete the training in May 2012.

7. Dates of prior committee approvals:

Math and CS Department/Division:	____Sept. 22, 2011___
OCSE Curriculum Committee	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

9/30/2011

Ogden College of Science and Engineering
Department of Mathematics and Computer Science
Proposal to Revise Course Credit Hours
(Action Item)

Contact Person: Name, Nezam Iraniparast, email, nezam.iraniparast@wku.edu phone:56218

1. Identification of course:

1.1 Current course prefix (subject area) and number: MATH 498
1.2 Course title: Senior Seminar
1.3 Credit hours: 3

2. Proposed course credit hours: 1-3

3. Rationale for the revision of course credit hours:

MATH 498 was originally 1 credit hour. Effective Spring 2012, the number of credit hours for MATH 498 increased to 3 at the same time that the number of hours in the each of the mathematics major programs that require it was increased as part of the program revision process. However, for students entering prior to this year, students were required to have at least six hours at the 400-level. Since MATH 498 was only one credit hour, students had to take two other MATH 400 courses. With the change from one to three credit hours, students entering prior to this year can now graduate with MATH 498 plus just one more course at 400 - level, because this will give them the 6 hours they need. This was not the original intent of the program. Furthermore, some of these students were planning on taking the course as a one-credit class. By changing it to three credits, some of these students will be over the maximum allowable credit hours in a semester potentially affecting their graduation date. Allowing MATH 498 to be a variable credit-hour course will ensure that the students entering prior to fall 2011 can graduate with their intended program without affecting their date of graduation. If the catalog year is 2010 or earlier the student will receive one credit hour and students with the catalog year 2011 and after will receive 3 credit hours.

4. Proposed term for implementation: Spring 2012

5. Dates of prior committee approvals:

Mathematics and Computer Science Department: Sept. 30, 2011

OCSE Curriculum Committee _____

Professional Education Council _____

Undergraduate Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

Proposal Date: 20 September 2011

Ogden College of Science and Engineering
SKyTeach
Proposal to Revise A Program
(Action Item)

Contact Person: David Erbach, david.erbach@wku.edu, 745-4455

1. Identification of program:

1.1 Current program reference number: 734
1.2 Current program title: Middle School Science Education ("MSSE")
1.3 Credit hours: 51

2. Identification of the proposed program changes:

Reduction in the number of hours in the major from 51 to 43
Inclusion of new courses: SMED 300 and SMED 400
Removal of several courses from core requirements and restricted electives
Reduction in the number of "exception hours" requested.

3. Detailed program descriptions:

Current program	**Proposed program**
General: 1. **30 hours** of science core courses are required 2. **15 hours** of restricted electives are required, including courses in **three** disciplines 3. 6 hours of MATH 117 **or 118** or **126**, and SMED 360 are required 4. All courses must be completed with a grade of C or better. All science courses must be completed with an average of 2.5 or better.	General: 1. **28 hours** of science core courses are required, including **SMED 300 and 400** 2. **9 hours** of restricted electives are required including courses in **two** disciplines 3. 6 hours of MATH 117 or **136**, and SMED 360 are required 4. All courses must be completed with a grade of C or better. All science courses must be completed with an average of 2.5 or better.
Core ASTR 104 Astronomy of the Solar System (3) **or ASTR 106 Astronomy of Stellar Systems** (3) BIOL 120/121 Biological Concepts: Cells, Metabolism, and Genetics (4) BIOL 122/123 Biological Concepts: Evolution, Diversity & Ecology (4)	Core 28 – 30 hours ASTR 104 Astronomy of the Solar System (3) BIOL 120/121 Biological Concepts: Cells, Metabolism, and Genetics (4) BIOL 122/123 Biological Concepts: Evolution, Diversity & Ecology (4)

CHEM 105/106 Fund. of Gen. Chemistry (4) or CHEM 120/121 College Chemistry I (5) GEOL 111/113 The Earth (4) **GEOL 112/114 Earth History** (4) PHYS 105 Concepts of the Physical World (3) PHYS 201 College Physics I (4) **or PHYS 231/232 College Physics and Biophysics I** (4)	CHEM 105/106 Fund. of Gen. Chemistry (4) or CHEM 120/121 College Chemistry I (5) GEOL 111/113 The Earth (4) PHYS 105 Concepts of the Physical World (3) **or** PHYS 201 College Physics I (4) **SMED 300 Teaching Science Skills and Methods** (3) **SMED 400 Applying Science Across Disciplines** (3)
Restricted electives: **15 hours** including **three** sciences from among ASTR 405 Astronomy for Teachers (3) BIOL 319/322 Molecular and Cell Biology (4) **BIOL 325 Insect Biodiversity** (3) **BIOL 326 Ornithology** (3) BIOL 327 Genetics (4) BIOL 334 Animal Behavior (3) BIOL 348 Plant Taxonomy (3) **BIOL 350 Intro Recombinant Genetics** (3) **BIOL 407 Virology** (3) **BIOL 411/412 Cell Biology** (4) **BIOL 430 Evolution: Theory and Process** (3) **GEOG 427 Water Resources** (3) GEOG 471 Natural Resource Mgt. (3) GEOL 308 Structural Geology (3) **GEOL 310 General Hydrology** (3) **GEOL 311 Oceanography** (3) GEOL 325 Intro to Minerals and Rocks (3) **GEOL 380 Intro Field Techniques** (3) GEOL 405 Paleontology (3) PHYS 410 Physics for Teachers (3)	Restricted electives: **9 hours** including **two** sciences from among ASTR 405 Astronomy for Teachers (3) BIOL 319/322 Molecular and Cell Biology (4) BIOL 327 Genetics (4) BIOL 334 Animal Behavior (3) BIOL 348 Plant Taxonomy (3) GEOG 420 Geomorphology (4) GEOG 471 Natural Resource Mgt. (3) GEOL 308 Structural Geology (3) GEOL 325 Intro to Minerals and Rocks (3) GEOL 405 Paleontology (3) PHYS 410 Physics for Teachers (3)
Other requirements: 6 hours MATH 117 Trigonometry (3) or **MATH 118 College Alg/Trig (5)** or **MATH 126 Calc/Anal Geo I (4.5**) SMED 360 Research Methods for	Other requirements: 6 hours MATH 117 Trigonometry (3) or **MATH 136 Calculus I (4)** SMED 360 Research Methods for

Mathematics and Science Teachers (3)	Mathematics and Science Teachers (3)

4. Rationale for the proposed program change:

Prior to SKyTeach, there was a single major for prospective middle school science teachers, which included both science and education courses. These students needed a broad perspective, which was met through first and second year survey courses in several sciences, courses which were widely available on regional campuses, where about 3/4 of the students were located. The required upper level / lower level credit hour balance was established with upper level education courses. An influencing factor of that approach was WKU's long-standing agreement to make the middle school science degree available on the regional campuses.

Under the UTeach agreement and model, the education and science degrees have been separated. All SKyTeach students are now required to complete double majors. The education courses are no longer part of the science major. The current MSSE major, designed in the early days of SKyTeach, requires a minimum of 51 hours, including at least 15 upper level science hours across three disciplines. These restricted option science courses frequently come with their own prerequisites, which may add additional hours to the program. The courses and their prerequisites are rarely available at regional campuses.

In aggregate, the current program requirements are difficult for students to meet. As a result, enrollment in the Middle School Science program is currently about 10% of what it formerly was. The few students who presently complete the degree are ones who transfer in a significant number of courses. As a practical matter, the degree program no longer exists.

The middle school science program is important because it aspires to prepare better teachers for precisely the age group at which students are known to be most likely to lose interest in the sciences. The proposed changes are an effort to revitalize the preparation of middle school science teachers by making the program more accessible, especially on regional campuses. At the same time, they align the coursework and restricted electives to match more closely the ACT college readiness standards and the new Kentucky State Science Core requirements.

5. Proposed term for implementation and special provisions (if applicable):

Spring semester 2012

6. Dates of prior committee approvals:

SKyTeach Steering Committee: 20 September 2011

Ogden College Curriculum Committee _____

Professional Education Council (if applicable) _____

General Education Committee (if applicable) _____

Undergraduate Curriculum Committee _____

University Senate _____

Proposal Date: 29 September 2011

Ogden College of Science and Engineering
Department of Biology
Proposal to Create a Temporary Course
(Information Item)

Contact Person: Albert Meier, albert.meier@wku.edu, 745-3696

1. Identification of proposed course

1.1 Course prefix (subject area) and number: BIOL 345
1.2 Course title: Fire Ecology and Management
1.3 Abbreviated course title: Fire Management
1.4 Credit hours: 1
1.5 Schedule type: A
1.6 Prerequisites: BIOL 120/121 and 122/123 or consent of instructor
1.7 Course description: The behavior and management of prescribed fires and wildland fires.

2. Rationale

2.1 Reason for offering this course on a temporary basis:
The Biology Department has taught this course previously under a BIOL 475 heading, but now wishes to give this class its own identity for the January 2012 term. This course is taught in collaboration with Mammoth Cave National Park and provides valuable job training and opportunities for students.

2.2 Relationship of the proposed course to courses offered in other academic units:
There are no courses offered at WKU that address wildland fire management.

3. Description of proposed course

3.1 Course content outline:

A. Fire behavior
- Fuel characteristics
- Weather conditions
- Topographical characteristics
- Fire burn patterns

B. Fire ecology

C. Firefighter training
- Preparedness
- Resource types
- Risk management
- Tools
- Suppression
- Investigation

3.2 Tentative text(s):

- Common Denominators of Fire behavior on Tragedy and Near-miss Wildland Fires. 1996. National Wildfire Coordinating Group. PMS 407, NFES 2225. Boise, ID.
- Firefighter Training S-130, Student Workbook. 2003. National Wildfire Coordinating Group. NFES 2730. Boise, ID.
- Fireline Handbook. 2004. National Wildfire Coordinating Group. NWCG Handbook 3, PMS 410-1, NFES 0065. Boise, ID.

4. Term of Implementation: January 2012

5. Dates of review/approvals:

Biology Department Head:	29 September 2011
Ogden College Dean:	_____
Provost:	_____

Attachment: Course Inventory Form

Proposal Date: 22 August 2011

Ogden College of Science and Engineering
Department of Biology
Proposal to Create a Temporary Course
(Information Item)

Contact Person: Jarrett Johnson, jarrett.johnson@wku.edu, 745-6032

Identification of proposed course

1.1 Course prefix (subject area) and number: BIOL 457
1.2 Course title: Herpetology
1.3 Abbreviated course title: Herpetology
1.4 Credit hours: 4
1.5 Schedule type: C
1.6 Prerequisites: BIOL 224/225 with a grade of "C" (or higher) or consent of instructor
1.7 Course description: The diversity, biology, and conservation of reptiles and amphibians.

1. Rationale

2.1 Reason for offering this course on a temporary basis:
A course in herpetology was taught in the WKU Biology Department during the 1970s, and a new faculty member with expertise in the field is anxious to offer such a course during the Spring 2012 semester. To accommodate registration, there is insufficient time to complete the new course approval process. Hence, the department seeks one-time approval for the temporary course. This course is intended to be later developed as a new, regular offering.

2.2 Relationship of the proposed course to courses offered in other academic units:
GEOL 405 (Paleontology) provides a comprehensive overview of the nature of the fossil record with particular emphasis on invertebrates. The proposed course begins with an overview of the evolution of vertebrates (fish, amphibians, mammals, reptiles, and birds) but focus mainly on the diversity, biology, and conservation of reptiles and amphibians

2. Description of proposed course

2.1 Course content outline:
Lecture

- Introduction to herpetology
- Concepts in systematics and evolution of Tetrapoda
- Evolution of Amniotes and major features of living amphibians
- Amphibian diversity
- Major features of living reptiles and reptile diversity
- Problems in phylogeny
- Life histories
- Reproduction and mating systems

- Osmoregulation and thermoregulation
- Locomotion, orientation and movement
- Communication and foraging ecology
- Defense
- Population ecology and phylogeography
- Conservation of amphibians and reptiles

Lab

- Salamander diversity
- Salamanders of Kentucky
- Frog diversity
- Frogs of Kentucky
- Amphibian field trip
- Turtle diversity
- Turtles of Kentucky
- Lizard diversity
- Lizards of Kentucky
- Snake diversity
- Snakes of Kentucky
- Reptile field trip

2.2 Tentative text(s):

- Herpetology by Vitt and Caldwell (2008, 3rd Edition), and
- A Field Guide to Reptiles & Amphibians of Eastern & Central North America by Conant and Collins (1998, 3rd Edition)

3. Term of Implementation: January 2012

4. Dates of review/approvals:

Biology Department Head:	16 September 2011
Ogden College Dean:	_____
Provost:	_____

Attachment: Course Inventory Form