**Ogden College of Science and Engineering**

**Office of the Dean**

**745-4449**

**REPORT TO THE UNIVERSITY CURRICULUM COMMITTEE**

Date: September 8, 2011

The Ogden College of Science and Engineering submits the following action items for consideration:

1. New Business

|  |  |
| --- | --- |
| **Type of item** | **Description of Item & Contact Information** |
| Action | **Create a New Course**HORT 426, ViticultureContact: Todd Willian, todd.willian@wku.edu, x55969 |
| Action | **Create a New Course**INFO 336, Database and Information RetrievalContact: Huanjing Wang, huanjing.want@wku.edu, x52672 Zhonghang Xia, zhonghang.xia@wku.edu, x56459 |
| Action | **Create a New Certificate Program**Certificate in Food Processing and TechnologyContact: John Khouryieh, hanna.khouryieh@wku.edu, 270-852-6407 |
| Action | **Create a New Certificate Program**CNSS 4011, Information Assurance CertificateContact: Rong Yang, rong.yang@wku.edu, x52940 James Gary, james.gary@wku.edu, x56373 |
| Action | **Create a New Minor Program**Minor in Food Processing and TechnologyContact: John Khouryieh, hanna.khouryieh@wku.edu, 270-852-6407 |

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. Course prefix (subject area) and number: HORT 426
	2. Course title: Viticulture
	3. Abbreviated course title: Viticulture
	4. Credit hours and contact hours: 3
	5. Type of course: Lecture
	6. Prerequisites: AGRO 110 and AGRO 350 or permission of instructor.
	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:**

* 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.

* 1. Projected enrollment in the proposed course:

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

* 1. 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.

* 1. 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.

* 1. 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:**

* 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
	1. 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
	1. 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.

* 1. 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:**

* 1. Library resources: See attached Library Resource Form and Bibliography
	2. Computer resources: Adequate

**5. Budget implications:**

* 1. Proposed method of staffing: Current faculty.
	2. Special equipment needed: None
	3. Expendable materials needed: None
	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:**

AgricultureDepartment: September 22, 2011

OCSE Curriculum Committee October 13, 2011

 Undergraduate Curriculum Committee \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 University Senate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Attachment: Bibliography, Library Resources Form**, **Course Inventory Form**

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. Course prefix (subject area) and number: INFO 336
	2. Course title: Database and Information Retrieval
	3. Abbreviated course title: Database & Info Retrieval
	4. Credit hours and contact hours: 3 credit hours and 3 contact hours
	5. Type of course: L
	6. Prerequisites: CS 180 with a grade of C or better
	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:**

* 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.

* 1. Projected enrollment in the proposed course:

One session per year; 15-20 students per year based upon projected enrollment in the informatics program.

* 1. 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.

* 1. 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.

* 1. 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:**

* 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
	1. 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**
	1. Student expectations and requirements:

Course grades will be determined by student performance on class activities, projects, assignments and examinations.

* 1. 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:**

* 1. Library resources:

None

* 1. Computer resources:

Existing computer lab

**5. Budget implications:**

* 1. Proposed method of staffing:

Existing faculty

* 1. Special equipment needed:

None

* 1. Expendable materials needed:

None

* 1. Laboratory materials needed:

None

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

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

Math and CSDepartment: \_\_\_\_\_Sept. 22, 2011\_\_

 OCSE Curriculum Committee \_\_\_\_\_Oct. 13, 2011\_\_\_

 Undergraduate Curriculum Committee \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 University Senate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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. Program title: Certificate in Food Processing and Technology
	2. Required hours in program: 18
	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.
	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 isto 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:**

* 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.
	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.
	3. Relationship of the proposed certificate program to certificate programs offered in other departments: None
	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.
	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 October 13, 2011

 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. Program title:

CNSS 4011 Information Assurance Certificate

* 1. Required hours in program:

6 hours

* 1. 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. 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:**

* 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.

* 1. Relationship of the proposed certificate program to other programs now offered by the department:

None

* 1. Relationship of the proposed certificate program to certificate programs offered in other departments:

None

* 1. Projected enrollment in the proposed certificate program:

20 to 30 students annually based upon the enrollment of CS 157 and CS 257.

* 1. 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.

* 1. 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 CSDepartment/Division: \_\_\_\_Sept. 22, 2011\_\_\_

 OCSE Curriculum Committee \_\_\_\_Oct. 13, 2011\_\_\_\_

 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. Program title: Minor in Food Processing and Technology
	2. Required hours in minor program: 18 hr
	3. Special information: This minor is not available for students with a Food Processing and Technology Concentration in the Advanced Manufacturing Major.
	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:**

* 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. 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.
	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.
	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.
	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 October 13, 2011\_\_\_\_\_

 Undergraduate Curriculum Committee \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 University Senate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_