**Ogden College of Science and Engineering**

**Office of the Dean**

**745-4449**

**REPORT TO THE UNIVERSITY CURRICULUM COMMITTEE**

Date: February 13, 2013

The Ogden College of Science and Engineering submits the following action items for consideration at the February 2013, UCC meeting:

1. New Business

|  |  |
| --- | --- |
| **Type of item** | **Description of Item & Contact Information** |
| Action | **Revise a Program**  Ref. #533, Major in Construction Management  Contact: Ahmed Khalafallah, [ahmed.khalafallah@wku.edu](mailto:ahmed.khalafallah@wku.edu), x55949 |
| Action | **Revise a Program**  Ref. #731, Mathematical Economics  Contact: Melanie Autin, [melanie.autin@wku.edu](mailto:melanie.autin@wku.edu), x56171  Contact: Catherine Carey, [cathy.carey@wku.edu](mailto:cathy.carey@wku.edu), x56401 |

Proposal Date: 01/25/2013

**Ogden College of Science and Engineering**

**Department of Architecture and Manufacturing Sciences**

**Proposal to Revise A Program**

**(Action Item)**

Contact Person: Ahmed Khalafallah, [ahmed.khalafallah@wku.edu](mailto:ahmed.khalafallah@wku.edu) , phone 745-5949

**1. Identification of program:**

* 1. Current program reference number: 533
  2. Current program title: Major in Construction Management
  3. Credit hours: 71

**2. Identification of the proposed program changes:**

* Replace the required course AMS 430 with MGT 210

**3. Detailed program description:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Current Program** | | | **Proposed Program** | | |
| **Program Description**: The following courses are required for the major: | | | **Program Description**: The following courses are required for the major: | | |
| *Major in Construction Management* | | | *Major in Construction Management* | | |
| Course # | Course Title | Hrs | Course # | Course Title | Hrs |
| AMS 140 | Intro to Occupational Safety | 1 | AMS 140 | Intro to Occupational Safety | 1 |
| AMS 163 | Architectural Drafting | 3 | AMS 163 | Architectural Drafting | 3 |
| AMS 261 | Construction Methods & Materials | 3 | AMS 261 | Construction Methods & Materials | 3 |
| AMS 262 | Construction Laboratory | 1 | AMS 262 | Construction Laboratory | 1 |
| AMS 271 | Industrial Statistics | 3 | AMS 271 | Industrial Statistics | 3 |
| AMS 325 | Survey of Building Systems | 3 | AMS 325 | Survey of Building Systems | 3 |
| AMS 398 | Internship I | 1 | AMS 398 | Internship I | 1 |
| AMS 430 | Tech. Mgmt./Supervision/Team Bldg. | 3 |  |  |  |
| AMS 490 | Senior Research | 3 | AMS 490 | Senior Research | 3 |
| AMS 282 | Architectural Structures | 3 | AMS 282 | Architectural Structures | 3 |
| CM 250 | Contract Documents | 3 | CM 250 | Contract Documents | 3 |
| CM 337 | Applied Strength of Materials | 3 | CM 337 | Applied Strength of Materials | 3 |
| CM 346 | Applied Soil Mech. & Foundations | 3 | CM 346 | Applied Soil Mech. & Foundations | 3 |
| CM 363 | Construction Estimating & Bidding I | 3 | CM 363 | Construction Estimating & Bidding I | 3 |
| CM 400 | Construction Administration | 3 | CM 400 | Construction Administration | 3 |
| CM 426 | Construction Law | 3 | CM 426 | Construction Law | 3 |
| CM 462 | Construction Scheduling | 3 | CM 462 | Construction Scheduling | 3 |
| CM 463 | Construction Estimating & Bidding II | 3 | CM 463 | Construction Estimating & Bidding II | 3 |
| CE 160 | Surveying I | 3 | CE 160 | Surveying I | 3 |
| CE 161 | Surveying I Lab | 1 | CE 161 | Surveying I Lab | 1 |
| CE 303 | Construction Management | 3 | CE 303 | Construction Management | 3 |
| CE 304 | Construction Management Lab | 1 | CE 304 | Construction Management Lab | 1 |
| CE 316 | Equipment & Methods | 3 | CE 316 | Equipment & Methods | 3 |
| ACCT 200 | Introductory Accounting Financial | 3 | ACCT 200 | Introductory Accounting Financial | 3 |
| ACCT 201 | Introductory Accounting Managerial | 3 | ACCT 201 | Introductory Accounting Managerial | 3 |
|  |  |  | **MGT 210** | **Organization and Management** | **3** |
| MGT 301 | Business Law | 3 | MGT 301 | Business Law | 3 |
| MGT 311 | Human Resources Management | 3 | MGT 311 | Human Resources Management | 3 |
|  |  |  |  | |  |
| Total Hours in Major | | 71 | Total Hours in Major | | 71 |
|  |  |  |  |  |  |
| Students are also required to take the following additional courses outside of the major: | | | Students are also required to take the following additional courses outside of the major: | | |
| AMS 175 | University Experience | 2 | AMS 175 | University Experience | 2 |
| CIS 141 | Basic Computer Literacy | 3 | CIS 141 | Basic Computer Literacy | 3 |
| ENG 100 | Freshman English | 3 | ENG 100 | Freshman English | 3 |
| ENG 200 | Introduction to Literature | 3 | ENG 200 | Introduction to Literature | 3 |
| ENG 300 | Junior English | 3 | ENG 300 | Junior English | 3 |
| COMM 161 | Public Speaking Elective | 3 | COMM 161 | Public Speaking Elective | 3 |
| PHIL 320 | Ethics | 3 | PHIL 320 | Ethics | 3 |
| HIST 119 (120) | Western Civ. to (since) 1648 | 3 | HIST 119 (120) | Western Civ. to (since) 1648 | 3 |
| ECON 150 (202) | Introduction to Economics (Principles of Economics - Micro) | 3 | ECON 150 (202) | Introduction to Economics (Principles of Economics - Micro) | 3 |
| CHEM 106 | Fund of Gen Chem Lab | 1 | CHEM 106 | Fund of Gen Chem Lab | 1 |
| CHEM 116 | Intro to College Chemistry | 3 | CHEM 116 | Intro to College Chemistry | 3 |
| PHYS 201 | College Physics I | 4 | PHYS 201 | College Physics I | 4 |
| SFTY 171 | Safety and First Aid | 1 | SFTY 171 | Safety and First Aid | 1 |
| **and 6 hours of advisor approved electives; these courses may fulfill general education requirements.** | | **6** | **and 3 hours of advisor approved electives; these courses may fulfill general education requirements.** | | **6** |
| Total Other Additional Hours | | 41 | Total Other Additional Hours | | 41 |

**4. Rationale for the proposed program change:**

* The curriculum of the Construction Management program lacks coverage of important Business Management topics, including organizational theory and behavior. MGT 210 has been identified as an essential course to address this weakness in the program. The course focuses on managing people and material resources to enhance organizational efficiency and productivity.
* The above weakness has also been pointed out through a program review by ACCE and this should address their concern.

**5. Proposed term for implementation and special provisions (if applicable):** 201330

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

AMS Department: \_\_01/31/2013\_\_\_\_\_\_\_\_

Ogden College Curriculum Committee \_\_02/07/13\_\_\_\_\_\_\_\_\_\_

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

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

Proposal Date: 12/01/2012

**Gordon Ford College of Business**

**Ogden College of Science and Engineering**

**Department of Economics**

**Department of Mathematics**

**Proposal to Revise A Program**

**(Action Item)**

Contact Person for Economics: Catherine Carey, [cathy.carey@wku.edu](mailto:cathy.carey@wku.edu), 5-6401

Contact Person for Mathematics: Melanie Autin, [melanie.autin@wku.edu](mailto:melanie.autin@wku.edu), 5-6171

**1. Identification of program:**

* 1. Current program reference number: 731
  2. Current program title: Mathematical Economics
  3. Credit hours: 49-62

**2. Identification of the proposed program changes:**

The program has been altered to include two concentrations: General Mathematical Economics and Actuarial Science.

* The General Mathematical Economics Concentration is identical to the current program.
* The Actuarial Science Concentration is a package of courses chosen to prepare students to take (at least) the first two actuary exams and to pursue a career as an actuary.
* Neither concentration will require a second major or minor.

**3. Detailed program description:**

**Current Program Proposed Program**

|  |  |
| --- | --- |
| Program Description  (page 115 and page 173 of current WKU catalog)  The major in Mathematical Economics (reference number 731) requires **27 hours in Economics, 21 hours in Mathematics, and 1 hour of an interdisciplinary senior seminar course.**  This major leads to a Bachelor of Science degree intended for students interested in graduate studies in economics, public policy, or business, as well as those students seeking analytical careers that will require extensive mathematics backgrounds.  **The program of study requires completion of a second major or a minor. The second major may not be economics, business economics, or mathematics. The minor may not be economics or mathematics.**  **All majors must complete a 40-hour core consisting of ECON 202, 203, 206 (or STAT 301), 302, 303, 306 or 307, 464, 465; MATH 136, 137, 237, 307; and ECON 497 or MATH 497.  Additionally, either MATH 331 or 310 must be completed, and students must take three additional hours from either MATH 331, 310, 305, 382, 435, or 405.  The remaining 3 hours in economics for completion may be selected from other 300 and 400 level economics courses.**  Admission to the mathematical economics major requires (1) the completion of MATH 136, ECON 202 and 203, and ECON 206 or STAT 301 with a minimum GPA of 2.0 in the courses listed; and (2) completion of a minimum of 60 hours with a minimum GPA of 2.0 overall; and (3) completion of a minimum of 12 hours at Western Kentucky University with a minimum WKU GPA of 2.0.  All mathematical economics majors will be required to enroll in an interdisciplinary senior seminar course prior to graduation (ECON 497 or MATH 497, 1 hour) | New Program Description  The major in Mathematical Economics (reference number 731) requires a core of **18 hours in Economics, 15 hours in Mathematics, and 1 hour of an interdisciplinary senior seminar course.  The concentration in General Mathematical Economics requires an additional 9 hours in Economics and 6 hours in Mathematics. The concentration in Actuarial Science requires an additional 3 hours in Economics, 9 hours in Mathematics, 12 hours in Finance, and 3-4 hours in Computer Science.**  This major leads to a Bachelor of Science degree intended for students interested in graduate studies in economics, public policy, or business, as well as those students seeking **a career as an actuary or** analytical careers that will require extensive mathematics backgrounds.  **The program of study does not require completion of a second major or minor.**  **All majors must complete a 34-hour core consisting of ECON 202, 203, 206 (or STAT 301), 302, 303, 465; MATH 136, 137, 237, 307; and ECON 497 or MATH 497.  Additionally, majors must choose a concentration in either General Mathematical Economics or Actuarial Science.**  **Majors in the General Mathematical Economics concentration must complete ECON 306 or 307, and ECON 464. Additionally, either MATH 331 or 310 must be completed, and students must take three additional hours from either MATH 331, 310, 305, 382, 435, or 405.  The remaining 3 hours in economics for completion may be selected from other 300- and 400-level economics courses.**  **Majors in the Actuarial Science concentration must complete ECON 307; MATH 310, 382 and 482; FIN 330, 337, 350, and 437; and CS 170 or 180.**  Admission to the mathematical economics major requires (1) the completion of MATH 136, ECON 202 and 203, and ECON 206 or STAT 301 with a minimum GPA of 2.0 in the courses listed; and (2) completion of a minimum of 60 hours with a minimum GPA of 2.0 overall; and (3) completion of a minimum of 12 hours at Western Kentucky University with a minimum WKU GPA of 2.0.  All mathematical economics majors will be required to enroll in an interdisciplinary senior seminar course prior to graduation (ECON 497 or MATH 497, 1 hour) |

**Current Program Proposed Program**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Prefix | # | Course Title | | Hrs. | Prefix | # | Course Title | Hrs. |
| ECON | 202 | Principles of Microeconomics | | 3 | ECON | 202 | Principles of Microeconomics | 3 |
| ECON | 203 | Principles of Macroeconomics | | 3 | ECON | 203 | Principles of Macroeconomics | 3 |
| ECON  or  STAT | 206  301 | Introduction to Statistical Analysis  Introductory Probability & Applied Statistics | | 3 | ECON  or  STAT | 206  301 | Introduction to Statistical Analysis  Introductory Probability & Applied Statistics | 3 |
| ECON | 302 | Microeconomic Theory | | 3 | ECON | 302 | Microeconomic Theory | 3 |
| ECON | 303 | Macroeconomic Theory | | 3 | ECON | 303 | Macroeconomic Theory | 3 |
| **ECON**  **or**  **ECON** | **306**  **307** | **Statistical Analysis**  **Financial Data Modeling** | | **3** |  | | | |
| **ECON** | **464** | **Mathematical Economics** | | **3** |  | | | |
| **ECON**  **or**  **ECON** | **465**  **480** | **Regression Econometrics**  **Economic Forecasting** | | **3** | **ECON**  **or**  **ECON**  **or**  **STAT** | **465**  **480**  **401** | **Regression Econometrics**  **Economic Forecasting**  **Regression Analysis** | **3** |
| ECON  or  MATH | 497  497 | Senior Seminar in Mathematical Economics  Senior Seminar in Mathematical Economics | | 1 | ECON  or  MATH | 497  497 | Senior Seminar in Mathematical Economics  Senior Seminar in Mathematical Economics | 1 |
| MATH | 136 | Calculus I | | 4 | MATH | 136 | Calculus I | 4 |
| MATH | 137 | Calculus II | | 4 | MATH | 137 | Calculus II | 4 |
| MATH | 237 | Multivariable Calculus | | 4 | MATH | 237 | Multivariable Calculus | 4 |
| MATH | 307 | Introduction to Linear Algebra | | 3 | MATH | 307 | Introduction to Linear Algebra | 3 |
| **MATH**  **or**  **MATH** | **310**  **331** | **Introduction to Discrete Mathematics**  **Differential Equations** | | **3** |  | | | |
| **ECON** | **3xx/**  **4xx** | **Elective** | | **3** |  | | | |
|  | | | | | **Choose one of the following two concentrations:** | | | |
| 1. **General Mathematical Economics** | | | |
| **ECON**  **or**  **ECON** | **306**  **307** | **Statistical Analysis**  **Financial Data Modeling** | **3** |
| **ECON** | **464** | **Mathematical Economics** | **3** |
| **ECON** | **3xx/**  **4xx** | **Elective** | **3** |
| **MATH**  **or**  **MATH** | **310**  **331** | **Introduction to Discrete Mathematics**  **Differential Equations** | **3** |
| **Three hours from the following:** | | | | | **Three hours from the following:** | | | |
| **MATH** | **305** | | **Introduction to Mathematical Modeling** | **3** | **MATH** | **305** | **Introduction to Mathematical Modeling** | **3** |
| **MATH**  **or**  **MATH** | **310**  **331** | | **Introduction to Discrete Mathematics**  **Differential Equations** | **3** | **MATH**  **or**  **MATH** | **310**  **331** | **Introduction to Discrete Mathematics**  **Differential Equations**  **(whichever was not chosen above)** | **3** |
| **MATH** | **382** | | **Probability and Statistics I** | **3** | **MATH** | **382** | **Probability and Statistics I** | **3** |
| **MATH** | **405** | | **Numerical Analysis I** | **3** | **MATH** | **405** | **Numerical Analysis I** | **3** |
| **MATH** | **435** | | **Partial Differential Equations** | **3** | **MATH** | **435** | **Partial Differential Equations** | **3** |
| **TOTALS** | | | |  | **TOTALS** | | |  |
| **Credit Hours** | | | | **49** | **General Mathematical Economics Credit Hours** | | | **49** |
|  | | | | | 1. **Actuarial Science** | | | |
| **ECON** | **307** | **Financial Data Modeling** | **3** |
| **MATH** | **310** | **Introduction to Discrete Mathematics** | **3** |
| **MATH** | **382** | **Probability & Statistics I** | **3** |
| **MATH** | **482** | **Probability & Statistics II** | **3** |
| **FIN** | **330** | **Principles of Financial Management** | **3** |
| **FIN** | **332** | **Investment Theory** | **3** |
| **FIN** | **350** | **Risk Management and Insurance** | **3** |
| **FIN** | **437** | **Corporate Asset Management** | **3** |
| **CS**  **or**  **CS** | **170**  **180** | **Problem Solving and Programming**  **Computer Science I** | **3-4** |
| **TOTALS** | | |  |
| **Actuarial Science Credit Hours** | | | **61-62** |

**4. Rationale for the proposed program change:**

We often receive requests for a program in Actuarial Science. Actuarial Science is a program that focuses on the mathematical and statistical analysis of risk and its applications to insurance and other business management problems. Bellarmine University has a major in Actuarial Science. The University of Louisville offers a concentration in actuarial science. Eastern Kentucky University offers a minor in actuarial science. According to the BLS Occupational Outlook Handbook, the demand for Actuaries will grow 27% over this decade with a near 0 unemployment rate. While the courses necessary for actuarial preparation are currently offered by the Mathematics, Economics, and Finance Departments, this concentration within the Mathematical Economics major packages the courses specifically for students preparing to become certified actuaries by taking the series of actuarial exams administered by the Society of Actuaries (SOA) or the Casualty Actuarial Society (CAS).

The requirement of a second major or minor is being removed because both concentrations of the Mathematical Economics major require enough hours for it to be a stand-alone major.

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

Fall 2013

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

Economics Department: \_\_\_\_\_1/18/2013\_\_\_\_\_

GFCB Curriculum Committee: \_\_\_\_\_02/06/13\_\_\_\_\_\_

Mathematics Department: \_\_\_\_\_1/18/2013\_\_\_\_\_

OCSE Curriculum Committee \_\_\_\_ 2/07/13\_\_\_\_\_\_\_\_

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

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