

MEMORANDUM TO: Ogden College of Science and Engineering Curriculum Committee

Dr. Martin Stone
Dr. Doug Chelson
Dr. Phil Lienesch
Dr. Darwin Dahl
Dr. Huanjing Wang
Dr. Warren Campbell

Dr. Xingang Fan
Dr. Melanie Autin
Dr. Doug Harper
Dr. Andy Mienaltowski
Dr. Les Pesterfield

FROM: Kenneth Crawford, Chair

SUBJECT: Agenda for Thursday, November 3, 2016 4:00 p.m. in COHH 4123

A. OLD BUSINESS:

- I. Consideration of the minutes of the September 29, 2016 meeting.

B. NEW BUSINESS:

Consent Items

Department of Mathematics

- I. Proposal to Revise Course Prerequisites/Corequisites
 - a. MATH 240, Geometry in Art and Architecture, 3 hrs.

Action Items

Department of Architectural and Manufacturing Sciences

- I. Proposal to Create a New Course
 - a. AMS 268 M1, Problem Solving Module One, 1 hr.
 - b. AMS 268 M2, Problem Solving Module Two, 1 hr.
 - c. AMS 268 M3, Problem Solving Module Three, 1 hr.

Department of Computer Science

- I. Proposal to Revise Course Credit Hours
 - a. CS 175, University Experience, 2 hrs.
- II. Proposal to Revise a Program
 - a. Ref. 629/629P, Major in Computer Science, 44-50 hrs.

C. OTHER BUSINESS

MEMBERS PRESENT:

Dr. Martin Stone
Dr. Doug Chelson
Dr. Phil Lienesch
Dr. Darwin Dahl
Dr. Huanjing Wang
Dr. Warren Campbell

Dr. Xingang Fan
Dr. Melanie Autin
Dr. Doug Harper
Dr. Andy Mienaltowski
Dr. Les Pesterfield

FROM: Ken Crawford, Chair

OLD BUSINESS:

Campbell/Dahl moved for approval of the minutes of the September 1st meeting. Motion passed.

NEW BUSINESS:

Consent Agenda

Campbell/Autin moved to approve the consent agenda items. Motion passed.

Action Agenda

Department of Architectural and Manufacturing Sciences

Campbell/Dahl moved to bundle Proposals to Create a New Course, items A-C. Motion passed.
Dahl/Campbell moved to approve Proposals to Create a New Course, items A-C: AMS 271, Industrial Statistics Modules 1, 2, and 3. Motion passed.

Department of Geography & Geology

Campbell/Autin moved to approve Proposal to Revise a Program: Ref. 366. Motion Passed.
Campbell/Dahl moved to approve Proposal to Revise a Program: Ref. 576. Motion Passed.

OTHER BUSINESS:

Meeting adjourned at 4:12pm.

Proposal Date: 10.11.2016

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

Contact Person: Molly Dunkum, molly.dunkum@wku.edu, 5.6235

1. Identification of course:

- 1.1 Course prefix (subject area) and number: MATH 240
(This course is equivalent to HUM 240)
- 1.2 Course title: Geometry in Art and Architecture

2. Current prerequisites: Any Colonnade MATH course with a B or better or a MATH ACT of at least 24 or an MPE of 20; 21 hours of Foundations and Explorations courses, or junior status.

3. Proposed prerequisites: Any Colonnade Foundations MATH course with a B or better; 21 hours of Foundations and Explorations courses, or junior status.

4. Rationale for the revision of prerequisites/corequisites/special requirements: Colonnade courses must be open to ALL students, and any prerequisites for Connections courses must fall within the Colonnade Plan. An MPE score (which has an expiration date) may preclude some students from taking the course. Additionally, any future Connections courses with a MATH prefix should not serve as a prerequisite for MATH 240.

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

6. Proposed term for implementation: Fall 2017.

7. Dates of prior committee approvals:

Mathematics Department

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate

10.21.2016

Proposal Date: Sept. 13, 2016

**Ogden College of Science and Engineering
Architectural and Manufacturing Sciences
Proposal to Create a New Course
(Action Item)**

Contact Person: Dr. Mark Doggett, mark.doggett@wku.edu, (270) 745-6951

1. Identification of proposed course:

- 1.1 Course prefix (subject area) and number: AMS 368 M1
- 1.2 Course title: Problem Solving Module One
- 1.3 Abbreviated course title: Prob Solv Mod 1
(maximum of 30 characters or spaces)
- 1.4 Credit hours: 1 Variable credit No
- 1.5 Grade type: Standard letter grades.
- 1.6 Prerequisites: Junior status
- 1.7 Course description: An application oriented introduction to basic research of practical industrial problems. Development, information gathering, data collection, and literature review on real technological problems.

2. Rationale:

- 2.1 Reason for developing the proposed course: The AMS department wishes to offer the existing AMS 368 within a three modular, competency-based sequence, offered off-load through distance learning. This three-module format will make AMS 368 similar to, and compatible with, other three-module competency-based courses already existing in the department. These modules are to be taken sequentially. Success in all three will be equivalent to the existing AMS 368. AMS 368 M1 is the first of the three modules.
- 2.2 Projected enrollment in the proposed course: As this course is offered off-load, a maximum of 20 students will be allowed.
- 2.3 Relationship of the proposed course to courses now offered by the department: Content is approximately the same as the first third of AMS 368: Problem Solving.
- 2.4 Relationship of the proposed course to courses offered in other departments: There is some similarity with undergraduate research methods courses offered in the curriculum; however, this course concentrates on the selection and data collection for problems found in technological and industrial settings.
- 2.5 Relationship of the proposed course to courses offered in other institutions: Most universities offer basic research methods and some offer problem solving strategies, but few offer it using a competency-based, online format.

3. Discussion of proposed course:

- 3.1 Schedule type: L
- 3.2 Learning Outcomes: Upon completion, a student will be able to:
 - Perform basic research and data collection using library resources
 - Gather scholarly and non-scholarly articles and written resources from a range of diverse viewpoints
 - Draft review of literature on the selected problem
- 3.3 Content outline:

- Introduction to basic research and data collection
 - Library resources
 - Databases
 - Reference librarian
 - Preliminary reference list
 - Bibliographies
 - Gathering scholarly and non-scholarly resources
 - Source materials
 - Core idea maps
 - Tables, charts, and graphs
 - Reviews of literature on a selected program
 - Prelim topic or problem statement
 - Knowledge of current local/regional technological issues
 - Annotated bibliography
 - Literature map
- 3.4 Student expectations and requirements: Complete a prescribed series of tasks, assignments, and tests to satisfy the required level of competency with course material. Student must earn a B or better to pass the course.
- 3.5 Tentative texts and course materials:
Lawrence, L. A., Machi, A., & NcEvoy, B. T. (2012). The literature review: Six steps to success (2nd ed.). Thousand Oaks, CA

4. Resources:

- 4.1 Library resources: None required.
- 4.2 Computer resources: Standard PC or Mac with Word and Excel.

5. Budget implications:

- 5.1 Proposed method of staffing: No additional staff would be required.
- 5.2 Special equipment needed: None.
- 5.3 Expendable materials needed: None.
- 5.4 Laboratory materials needed: None.

6. Proposed term for implementation: January 2017.

7. Dates of prior committee approvals:

AMS Department	9/16/16
OCSE Curriculum Committee	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

Proposal Date: Sept. 13, 2016

**Ogden College of Science and Engineering
Architectural and Manufacturing Sciences
Proposal to Create a New Course
(Action Item)**

Contact Person: Dr. Mark Doggett, mark.doggett@wku.edu, (270) 745-6951

1. Identification of proposed course:

- 1.1 Course prefix (subject area) and number: AMS 368 M2
- 1.2 Course title: Problem Solving Module Two
- 1.3 Abbreviated course title: Prob Solv Mod 2
(maximum of 30 characters or spaces)
- 1.4 Credit hours: 1 Variable credit No
- 1.5 Grade type: Standard letter grades.
- 1.6 Prerequisites: AMS 368 M1 with a grade of B or better.
- 1.7 Course description: Introduction to basic analytical tools applied to practical industrial problems. Critical evaluation, assessment, scientific analysis, graphical representation and root cause exploration of real technological problems.

2. Rationale:

- 2.1 Reason for developing the proposed course: The AMS department wishes to offer the existing AMS 368 within a three modular, competency-based sequence, offered off-load through distance learning. This three-module format will make AMS 368 similar to, and compatible with, other three-module competency-based courses already existing in the department. These modules are to be taken sequentially. Success in all three will be equivalent to the existing AMS 368. AMS 368 M2 is the second of the three modules.
- 2.2 Projected enrollment in the proposed course: As this course is offered off-load, a maximum of 20 students will be allowed.
- 2.3 Relationship of the proposed course to courses now offered by the department: Content is approximately the same as the middle third of AMS 368: Problem Solving.
- 2.4 Relationship of the proposed course to courses offered in other departments: There is some similarity with data analysis and evaluation courses in the university's curriculum. However, this course concentrates on those problem-solving approaches applied in industrial settings.
- 2.5 Relationship of the proposed course to courses offered in other institutions: Most universities offer some form of problem solving. Similar departments at other institutions typically cover this content, but few offer it using a competency-based, online format.

3. Discussion of proposed course:

- 3.1 Schedule type: L
- 3.2 Learning Outcomes: Upon completion, a student will be able to:
 - Critically assess gathered information and determine its quality and validity
 - Perform rudimentary analysis on a problem using the scientific approach with justification
 - Develop critical thinking skills using a variety of structured methods

- 3.3 Content outline:
 - Critical assessment and evaluation
 - Interpretation of sources
 - Claims, premises, and conclusions
 - Scientific analysis and justification
 - Patterning and reasoning analysis
 - Data collection and root cause analysis tools
 - Knowledge of discovery statements
 - Argument of advocacy statements
- 3.4 Student expectations and requirements: Complete a prescribed series of tasks, assignments, and tests to satisfy the required level of competency with course material. Students must earn a B or better to pass the course.
- 3.5 Tentative texts and course materials:

Machi, L. A., & McEvoy, B. T. (2012). The literature review: Six steps to success. Thousand Oaks, CA: Corwin Press. ISBN 9781452240886/ 1452240884

GOAL/QPC. (2011). The problem solving memory jogger: 7 steps to improved processes. Salem, NH: GOAL (Growth Opportunity Alliance of Lawrence) QPC. ISBN 9781576811351/ 1576811352

4. Resources:

- 4.1 Library resources: None required.
- 4.2 Computer resources: Standard PC or Mac with Word and Excel.

5. Budget implications:

- 5.1 Proposed method of staffing: No additional staff required.
- 5.2 Special equipment needed: None.
- 5.3 Expendable materials needed: None.
- 5.4 Laboratory materials needed: None.

6. Proposed term for implementation: January 2017.

7. Dates of prior committee approvals:

AMS Department	9/16/16 _____
OCSE Curriculum Committee	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

Proposal Date: Sept. 13, 2016

**Ogden College of Science and Engineering
Architectural and Manufacturing Sciences
Proposal to Create a New Course
(Action Item)**

Contact Person: Dr. Mark Doggett, mark.doggett@wku.edu, (270) 745-6951

1. Identification of proposed course:

- 1.1 Course prefix (subject area) and number: AMS 368 M3
- 1.2 Course title: Problem Solving Module Three
- 1.3 Abbreviated course title: Prob Solv Mod 3
(maximum of 30 characters or spaces)
- 1.4 Credit hours: 1 Variable credit No
- 1.5 Grade type: Standard letter grades.
- 1.6 Prerequisites: AMS 368 M2 with a grade of B or better.
- 1.7 Course description: Presentation of solutions for practical industrial problems. Comprehensive reporting and presentation of multiple approaches to real technological problems using scientific justification.

2. Rationale:

- 2.1 Reason for developing the proposed course: The AMS department wishes to offer the existing AMS 368 within a three modular, competency-based sequence, offered off-load through distance learning. This three-module format will make AMS 368 similar to, and compatible with, other three-module competency-based courses already existing in the department. These modules are to be taken sequentially. Success in all three will be equivalent to the existing AMS 368. AMS 368 M3 is the third of the three modules.
- 2.2 Projected enrollment in the proposed course: As this course is offered off-load, a maximum of 20 students will be allowed.
- 2.3 Relationship of the proposed course to courses now offered by the department: Content is approximately the same as the final third of AMS 368: Problem Solving.
- 2.4 Relationship of the proposed course to courses offered in other departments: There is some similarity with other courses offered throughout the university's curriculum. However, this course concentrates on presenting information and recommendations for problems found in industrial settings.
- 2.5 Relationship of the proposed course to courses offered in other institutions: Most universities offer similar content, but few offer it using a competency-based, online format.

3. Discussion of proposed course:

- 3.1 Schedule type: L
- 3.2 Learning Outcomes: Upon completion, students will be able to:
 - Demonstrate competency in developing solutions using multiple problem solving approaches
 - Refine and polish their professional presentation skills
- 3.3 Content outline:
 - Inductive and deductive techniques

- Morphological box
- Tree diagram
- Brainstorming
- Solution tables
 - Matrix Diagram
 - Prioritization Matrices
 - PDPC Chart
- Action plans and storyboards
- Comprehensive final report
 - Introduction
 - Updated review of literature
 - Analysis of the problem or issue using the visual tools
 - Recommended solutions and actions using the tools
 - Summary results
 - Conclusion
- Professional presentation

3.4 Student expectations and requirements: Complete a prescribed series of tasks, assignments, and tests to satisfy the required level of competency with course material. Students must earn a B or better to pass the course.

3.5 Tentative texts and course materials:
Machi, L. A., & McEvoy, B. T. (2012). The literature review: Six steps to success. Thousand Oaks, CA: Corwin Press. ISBN 9781452240886/ 1452240884

GOAL/QPC. (2011). The problem solving memory jogger: 7 steps to improved processes. Salem, NH: GOAL (Growth Opportunity Alliance of Lawrence) QPC. ISBN 9781576811351/ 1576811352

4. Resources:

- 4.1 Library resources: None required.
- 4.2 Computer resources: Standard PC or Mac with Word and Excel.

5. Budget implications:

- 5.1 Proposed method of staffing: No additional staff required
- 5.2 Special equipment needed: None.
- 5.3 Expendable materials needed: None.
- 5.4 Laboratory materials needed: None.

6. Proposed term for implementation: January 2017.

7. Dates of prior committee approvals:

AMS Department	9/16/16
OCSE Curriculum Committee	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

Proposal Date: August 29, 2016

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

Contact Person: Huanjing Wang, Huanjing.wang@wku.edu, 745-2672

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: CS 175
- 1.2 Course title: University Experience - CS
- 1.3 Credit hours: 2

2. Proposed course credit hours:

3 credit hours

3. Rationale for the revision of course credit hours:

The CS Department has determined that the current two-hour course is not thorough enough to prepare students to be successful at the university and as CS majors. Moreover, the WKU university experience course (UC 175) also has been changed to a three-hour course.

4. Proposed term for implementation:

Fall 2017

5. Dates of prior committee approvals:

Department of Computer Science
Ogden College Curriculum Committee
Undergraduate Curriculum Committee
University Senate

September 27, 2016

**Ogden College of Science and Engineering
Department of Computer Science
Proposal to Revise A Program
(Action Item)**

Contact Person: Huanjing Wang, huanjing.wang@wku.edu, 745-2672

1. Identification of program:

- 1.1 Current program reference number:
629P (seeking admission)
629 (officially admitted)
- 1.2 Current program title:
Major in Computer Science
- 1.3 Credit hours: 44-50

2. Identification of the proposed program changes:

- Update general description of the 200-level hours requirement to make it consistent with current degree requirements.

3. Detailed program description:

<p>The major in computer science requires a minimum of 44 semester hours. To be admitted to the computer science major, students must complete CS 180, 221, and CS 339 with grades of C or better. In addition, all CS courses counting toward the CS program major must be completed with a grade of “C” or better. Computer Science electives may include from 0-6 hours of 200-level courses. Students must adhere to all University Policies as indicated in the WKU catalog section “Academic Information.” Additional requirements are as follows:</p>	<p>The major in computer science requires a minimum of 44 semester hours. To be admitted to the computer science major, students must complete CS 180, 221, and CS 339 with grades of C or better. In addition, all CS courses counting toward the CS program major must be completed with a grade of “C” or better. Computer Science electives may include from 0-3 hours of 200-level courses. Students must adhere to all University Policies as indicated in the WKU catalog section “Academic Information.” Additional requirements are as follows:</p>
<p>Systems/Scientific Applications Concentration</p> <ul style="list-style-type: none"> 1. 50 hours are required including 47 hours of computer science courses and 3 hours of STAT 301. 2. ENG 307, MATH 136, and PHIL 215 are required. 3. Completion of these 11 CS core courses (35 credit hours): CS 180, 221, 339, 325, 351, 360, 382, 396, 421, 425, and 496. 	<p>Systems/Scientific Applications Concentration</p> <ul style="list-style-type: none"> 1. 50 hours are required including 47 hours of computer science courses and 3 hours of STAT 301. 2. ENG 307, MATH 136, and PHIL 215 are required. 3. Completion of these 11 CS core courses (35 credit hours): CS 180, 221, 339, 325, 351, 360, 382, 396, 421, 425, and 496.

<ol style="list-style-type: none"> 4. Completion of 12 hours of CS electives from the following courses: CS 370, 381, 443, 445, 446, 450, and 456. 5. Completion of 2 courses from the following list: MATH 127, 137, 305, 307, 331, 405, 406, 470 and 473. 6. Completion of one year of a laboratory science (a two semester sequence of the same science) and one additional science course. All must be designed for Science/Engineering majors. 7. One additional course from the above list of Mathematics courses (this course may not be used to satisfy any other CS major degree requirement) or one additional science course designed for science/engineering majors. 	<ol style="list-style-type: none"> 4. Completion of 12 hours of CS electives from the following courses: CS 370, 381, 443, 445, 446, 450, and 456. 5. Completion of 2 courses from the following list: MATH 127, 137, 305, 307, 331, 405, 406, 470 and 473. 6. Completion of one year of a laboratory science (a two semester sequence of the same science) and one additional science course. All must be designed for Science/Engineering majors. 7. One additional course from the above list of Mathematics courses (this course may not be used to satisfy any other CS major degree requirement) or one additional science course designed for science/engineering majors.
<p>Any Minor Option</p> <ol style="list-style-type: none"> 1. 44 hours of computer science courses are required. 2. ENG 307, MATH 136, STAT 301, and PHIL 215 are required. 3. Completion of these 11 CS core courses (35 credit hours): CS 180, 221, 339, 325, 351, 360, 382, 396, 421, 425, and 496. 4. Completion of an additional 9 hours of CS electives at the 200-level or above (excluding CS 226 and 257) including 3 hours at the 400-level and another 3 hours at the 300-level or higher. Note: At most 1.5 hours of credit for CS 239 may count towards the major. At most 3 hours of credit for CS 239 and 245 (only for languages for which credit is not received through another course) may count towards the major. 5. Completion of any additional minor/major. 	<p>Any Minor Option</p> <ol style="list-style-type: none"> 1. 44 hours of computer science courses are required. 2. ENG 307, MATH 136, STAT 301, and PHIL 215 are required. 3. Completion of these 11 CS core courses (35 credit hours): CS 180, 221, 339, 325, 351, 360, 382, 396, 421, 425, and 496. 4. Completion of an additional 9 hours of CS electives at the 200-level or above (excluding CS 226 and 257) including 3 hours at the 400-level and another 3 hours at the 300-level or higher. Note: At most 1.5 hours of credit for CS 239 may count towards the major. At most 3 hours of credit for CS 239 and 245 (only for languages for which credit is not received through another course) may count towards the major. 5. Completion of any additional minor/major.
<p>Specialty Concentration</p> <ol style="list-style-type: none"> 1. 50 hours of computer science courses are required. 2. ENG 307, MATH 136, STAT 301, and PHIL 215 are required. 3. Completion of these 13 CS core courses (41 credit hours): CS 180, 221, 339, 325, 351, 360, 381, 382, 396, 421, 425, 443, and 496. 	<p>Specialty Concentration</p> <ol style="list-style-type: none"> 1. 50 hours of computer science courses are required. 2. ENG 307, MATH 136, STAT 301, and PHIL 215 are required. 3. Completion of these 13 CS core courses (41 credit hours): CS 180, 221, 339, 325, 351, 360, 381, 382, 396, 421, 425, 443, and 496.

<p>4. An additional 18 hours of specialty courses, selected in consultation with a CS advisor, not used to satisfy specific other graduation requirements for the CS major or for the Colonnade Program, including 9 hours of which are at the 300 level or above.</p> <p>5. Completion of an additional 9 hours of CS electives at the 200 level or above (excluding CS 226 and 257) including 3 hours at the 400 level and another 3 hours at the 300 level or higher. Note: At most 1.5 hours of credit for CS 239 may count towards the major. At most 3 hours of credit for CS 239 and 245 (only for languages for which credit is not received through another course) may count towards the major.</p>	<p>4. An additional 18 hours of specialty courses, selected in consultation with a CS advisor, not used to satisfy specific other graduation requirements for the CS major or for the Colonnade Program, including 9 hours of which are at the 300 level or above.</p> <p>5. Completion of an additional 9 hours of CS electives at the 200 level or above (excluding CS 226 and 257) including 3 hours at the 400 level and another 3 hours at the 300 level or higher. Note: At most 1.5 hours of credit for CS 239 may count towards the major. At most 3 hours of credit for CS 239 and 245 (only for languages for which credit is not received through another course) may count towards the major.</p>
---	---

4. Rationale for the proposed program change:

Make the program description consistent with current degree requirements..

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

Fall 2017

6. Dates of prior committee approvals:

Department of Computer Science

September 27, 2016

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate