MEMORANDUM TO: Ogden College of Science and Engineering Curriculum Committee

Dr. Jack Rudolph	Dr. James Gary	Dr. Greg Arbuckle
Dr. Martin Stone	Dr. Rong Yang	Dr. John Khouryieh
Dr. Bruce Schulte	Dr. Julie Ellis	Dr. Bruce Kessler
Dr. Phil Lienesch	Dr. Warren Campbell	Dr. Richard Schugart
Dr. Cathleen Webb	Dr. David Keeling	Dr. Keith Andrew
Dr. Hemali Rathnayake	Dr. Xingang Fan	
Dr. Les Pesterfield		

FROM: Kenneth Crawford, Chair

SUBJECT: Agenda for <u>Thursday, December 5, 2013</u>, 4:00 p.m. in COHH 4123

A. OLD BUSINESS:

    I. Consideration of the minutes of the November 7, 2013 meeting.

B. NEW BUSINESS:

Consent Items

Department of Architectural and Manufacturing Sciences

    I. Proposal to Delete a Course

        a. AMS 320, Architectural Documentation, 4 hrs.

    II. Proposal to Revise Course Prerequisites

        a. AMS 273, Architectural Detailing, 3 hrs.

        b. AMS 325, Survey of Building Systems, 3 hrs.

        c. AMS 363, Architectural Documentation II, 3 hrs.

        d. AMS 372, Commercial Architectural Floor Planning, 3 hrs.

        e. AMS 375, Special Architectural Problems, 3hrs.

        f. AMS 378, Architectural/Professions Presentation, 3 hrs.

        g. AMS 470, Land Development, 4 hrs.

        h. AMS 488, Comprehensive Design, 3 hrs.

Department of Mathematics

    I. Proposal to Delete a Course

        a. MATH 432, Introduction to Measure Theory

    II. Proposal to Revise Course Prerequisites

        a. MATH 307, Introduction to Linear Algebra

Action Items

Department of Mathematics

    I. Proposal to Revise a Program

        a. Ref. #728 and 528, Major in Mathematics, 39 or 36 hrs (728), 51 hrs. (528).

C. **OTHER BUSINESS**
     I. Announcement regarding special January meeting to discuss Engineering program proposal.

MEMBERS PRESENT:

Dr. Martin Stone   Dr. Warren Campbell
Dr. Phil Linesch   Dr. David Keeling
Dr. Hemali Rathnayake   Dr. Dan Jackson for Dr. Greg Arbuckle
Dr. Dr. Les Pesterfield   Dr. John Khouryieh
Dr. James Gary   Dr. Richard Schugart
Dr. Rong Yang   Dr. Keith Andrew
Dr. Julie Ellis   Dr. Mark Cambron, Guest

FROM: Ken Crawford, Chair

OLD BUSINESS:

Approval of the minutes from the September 5, 2013 meeting. Motion passed.

NEW BUSINESS:

Information Agenda

All information items were passed.

Consent Agenda

All consent items were passed.

Action Agenda

Department of Architectural and Manufacturing Sciences

Keeling/Campbell moved approval of the proposal to revise a program, Ref. #575, Technology Management. Motion passed.

Department of Engineering

Keeling/Khouryieh moved approval of the proposal to create a new course, CE 305, Risk Analysis. Motion Passed.

Keeling/Campbell moved to bundle proposals to revise course credit hours, EE 180, EE 200, EE 431, and EE 460. Motion passed with a friendly amendment to add department approval date to EE 180 proposal, add "EE 200" to the end of item 3 in the EE 180 proposal, and add a space between EE and 200 in the EE 200 proposal.

Keeling/Campbell moved approval of the proposal to revise a program, Ref. # 537, Electrical Engineering. Motion Passed.

OTHER BUSINESS:

No other business. Meeting was adjourned at 4:21p.m.

College Name
Department Name
Proposal to Delete a Course
(Consent Item)

Contact Person: Neal Downing; neal.downing@wku.edu; 745-6302

1. **Identification of course:**
   1.1   Current course prefix (subject area) and number: AMS 320
   1.2   Course title: ARCHITECTURAL DOCUMENTATION

2. **Rationale for the course deletion:**
   AMS 320 is no longer being offered in the department and is being deleted from the catalog. It has been replaced by AMS 263.

3. **Effect of course deletion on programs or other departments, if known:**
   none

4. **Proposed term for implementation:**
   201430

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

Department/ Unit	11/18/2013
College Curriculum Committee	
Professional Education Council (if applicable)	
General Education Committee (if applicable)	
Undergraduate Curriculum Committee	
University Senate	

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

Contact Person: Neal Downing, neal.downing@wku.edu, 270-745 -6302

1.   **Identification of course:**
        1.1   Course prefix (subject area) and number: AMS 273
        1.2   Course title: Architectural Detailing

2.   **Current prerequisites:** AMS 320

3.   **Proposed prerequisites/ special requirements:** AMS 263 with a Grade of 'C' or better

4.   **Rationale for the revision of prerequisites:** AMS 320 is no longer being offered in the department and is being deleted from the catalog. It has been replaced by AMS 263.

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

6.   **Proposed term for implementation:** Fall 2014

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

        Department: Architectural & Manufacturing Sciences   11/18/2013
        _____

        Ogden College Curriculum Committee
        _____

        Undergraduate Curriculum Committee
        _____

        University Senate
        _____

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

Contact Person: Neal Downing, neal.downing@wku.edu, 270-745 -6302

1. **Identification of course:**
   1.1   Course prefix (subject area) and number: AMS 325
   1.2   Course title: Survey of Building Systems

2. **Current prerequisites:** AMS 163, 261 and Math 118 or equivalent

3. **Proposed prerequisites:** AMS 163, 261 and Math 117 or equivalent

4. **Rationale for the revision of prerequisites:** Math 118 is not being offered and hence Math 117 has been made the requirement.

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

6. **Proposed term for implementation:** Fall 2014

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

   Department: Architectural & Manufacturing Sciences   11/18/2013

   Ogden College Curriculum Committee   _____

   Undergraduate Curriculum Committee   _____

   University Senate   _____

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

Contact Person: Neal Downing, neal.downing@wku.edu, 270-745 -6302

1. **Identification of course:**
   1.1   Course prefix (subject area) and number: AMS 363
   1.2   Course title: Architectural Documentation II

2. **Current prerequisites:** AMS 263 with a grade of 'C' or better, 273 (formerly AMS 373)

3. **Proposed prerequisites:** AMS 263 with a grade of 'C' or better, AMS 273 with a grade of 'C' or better, AMS 305

4. **Rationale for the revision of prerequisites:** Students are required to know the principles from AMS 305 and apply them in AMS 363. A grade of 'C' or better in AMS 273 will better prepare students for AMS 363.

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

6. **Proposed term for implementation:** Fall 2014

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

   Department: Architectural & Manufacturing Sciences   11/18/2013 _____

   Ogden College Curriculum Committee   _____

   Undergraduate Curriculum Committee   _____

   University Senate   _____

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

Contact Person: Neal Downing, neal.downing@wku.edu, 270-745 -6302

1. **Identification of course:**
   1.1   Course prefix (subject area) and number: AMS 372
   1.2   Course title: Commercial Architectural Floor Planning

2. **Current prerequisites:** AMS 320

3. **Proposed prerequisites:** AMS 263

4. **Rationale for the revision of prerequisites:** AMS 320 is not being offered in the department and is being deleted from the catalog. AMS 320 has been replaced by AMS 263.

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

6. **Proposed term for implementation:** Fall 2014

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

   Department: Architectural & Manufacturing Sciences   11/18/2013 _____

   Ogden College Curriculum Committee   _____

   Undergraduate Curriculum Committee   _____

   University Senate   _____

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

Contact Person: Neal Downing, neal.downing@wku.edu, 270-745 -6302

1. **Identification of course:**
    1.1   Course prefix (subject area) and number: AMS 375
    1.2   Course title: Special Architectural Problems

2. **Current prerequisites:** AMS 320

3. **Proposed prerequisites:** None

4. **Rationale for the revision of prerequisites:** AMS 320 is not being offered in the department and is being deleted from the catalog.

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

6. **Proposed term for implementation:** Fall 2014

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

    Department: Architectural & Manufacturing Sciences   11/18/2013

    Ogden College Curriculum Committee   _____

    Undergraduate Curriculum Committee   _____

    University Senate   _____

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

Contact Person: Neal Downing, neal.downing@wku.edu, 270-745 -6302

1. **Identification of course:**
   1.1   Course prefix (subject area) and number: AMS 378
   1.2   Course title: Architectural/ Professional Presentation

2. **Current prerequisites:** AMS 320; AMS 360

3. **Proposed prerequisites:** AMS 369

4. **Rationale for the revision of prerequisites:** AMS 320 and AMS 360 are not being offered in the department. They no longer need to be mentioned in the list of prerequisites. Projects created in AMS 369 are used as the base for creating presentations in AMS 378.

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

6. **Proposed term for implementation:** Fall 2014

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

Department: Architectural & Manufacturing Sciences	11/18/2013
Ogden College Curriculum Committee	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

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

Contact Person: Neal Downing, neal.downing@wku.edu, 270-745 -6302

1.   **Identification of course:**
     1.1   Course prefix (subject area) and number: AMS 470
     1.2   Course title: Land Development

2.   **Current prerequisites:** CE 216, AMS 325, AMS 373

3.   **Proposed prerequisites:** AMS 273

4.   **Rationale for the revision of prerequisites:** AMS 373 is not being offered in the department, it has been replaced with AMS 273. CE 216 is not offered by the Civil Engineering Department. AMS 470 has evolved over time and the content covered in AMS 325 is not required to be successful in AMS 470. AMS 373 is not being offered; it has been replaced by AMS 273.

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

6.   **Proposed term for implementation:** Fall 2014

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

     Department: Architectural & Manufacturing Sciences   11/18/2013 _____

     Ogden College Curriculum Committee   _____

     Undergraduate Curriculum Committee   _____

     University Senate   _____

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

Contact Person: Neal Downing, neal.downing@wku.edu, 270-745 -6302

1. **Identification of course:**
   1.1   Course prefix (subject area) and number: AMS 488
   1.2   Course title: Comprehensive Design

2. **Current prerequisites:** Senior Standing and consent of Instructor

3. **Proposed prerequisites:** AMS 363, AMS 369, Senior Standing and consent of Instructor

4. **Rationale for the revision of prerequisites:** AMS 363 and AMS 369 will better prepare students for the capstone sequence.

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

6. **Proposed term for implementation:** Fall 2014

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

   Department: Architectural & Manufacturing Sciences   11/18/2013 _____

   Ogden College Curriculum Committee   _____

   Undergraduate Curriculum Committee   _____

   University Senate   _____

Ogden College of Science and Engineering
Department of Mathematics
Proposal to Delete a Course
(Consent Item)

Contact Person: John Spraker, john.spraker@wku.edu, 745 - 6220

1.   **Identification of course:**
       1.1   Current course prefix (subject area) and number: MATH 432
       1.2   Course title: Introduction to Measure Theory

2.   **Rationale for the course deletion:**
       This course has not been offered in more than 5 years. Students in the mathematics major now take the new course, MATH 337, followed by MATH 431 for their analysis sequence and no longer need MATH 432.

3.   **Effect of course deletion on programs or other departments, if known:**
       None

4.   **Proposed term for implementation:**
       Fall 2014

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

       Department of Mathematics   November 15, 2013
                                                          _____
       Ogden College Curriculum Committee
                                                          _____
       Undergraduate Curriculum Committee
                                                          _____
       University Senate
                                                          _____

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

Contact Person: John Spraker, john.spraker@wku.edu, 745 - 6220

1. **Identification of course:**
   1.1   Course prefix (subject area) and number: MATH 307
   1.2   Course title: Introduction to Linear Algebra

2. **Current prerequisites:**
   MATH 136 and either EE 180 or PHIL 215 with a grade of C or better.
3. **Proposed prerequisites:**
   MATH 136 with an A or MATH 142 with an A or MATH 137 with a C or better.
4. **Rationale for the revision of prerequisites:**
   The new requirement better reflects the required preparation and provides the opportunity for some students to progress more rapidly in the major.
5. **Effect on completion of major/minor sequence:**
   As stated above, some students will be able to complete the major more rapidly with the new prerequisites.
6. **Proposed term for implementation:**
   Fall 2014
7. **Dates of prior committee approvals:**

Department of Mathematics	November 15, 2013
Ogden College Curriculum Committee	
Professional Education Council	
University Senate	

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

Contact Person: John Spraker, john.spraker@wku.edu, 745 - 6220

1. **Identification of program:**
   1.1   Current program reference numbers: 728 and 528
   1.2   Current program title: Major in Mathematics
   1.3   Credit hours: 39 or 36 hours (728), 51 hours (528)

2. **Identification of the proposed program changes:**
   o   Removal of the PHIL 215 or EE 180 requirement from the 728 major.
   o   Reduction of the computer science requirement from 8 hours to 4 hours in the 728 major.
   o   Removal of the 12-hour supporting course requirement from the 728 major.
   o   Removal of the deleted course MATH 432.
   o   Inclusion of MATH 371 as an elective in the 528 major and the non-teacher certifiable 728 major.
   o   Inclusion of MATH 371 as an option in the computational requirement of the 528 major.

3. **Detailed program description:**

Program Description	New Program Description
Major in Mathematics	Major in Mathematics
A major in mathematics provides a Bachelor of Arts degree an requires either a minimum of 36 -39 semester hours for a general major with a minor or second major or a minimum of 51 semester hours for an extended major . Note: All mathematics courses listed as prerequisites for other courses must have been completed with a grade of C or better. Students who wish to declare a 728 or 528 mathematics major will initially be designated as "seeking admission" until the following requirements have been satisfied:	A major in mathematics provides a Bachelor of Arts degree and requires either a minimum of 36 -39 semester hours for a general major with a minor or second major or a minimum of 51 semester hours for an extended major . Note: All mathematics courses listed as prerequisites for other courses must have been completed with a grade of C or better. Students who wish to declare a 728 or 528 mathematics major will initially be designated as "seeking admission" until the following

- Complete MATH 136, MATH 137, and MATH 307 or MATH 310 with a grade of "C" or better in each course.
- Have an overall GPA of at least 2.4 in mathematics program courses (MATH 136 and above) completed prior to admission.

The general major (728) offers two options: (1) Non-teacher certifiable Major in Mathematics; (2) Major Certifiable for Teaching Secondary Level Mathematics. The extended major (528) offers only the first option. **Option 1 students are required to complete both CS 180 and 181.** Option 2 students are required to complete either CS 170 or 180.

Option 1:Non-Teacher Certifiable Major in Mathematics.
(A) General Major(728): **To prepare for employment in industry,** the student must complete a minimum of 39 hours of mathematics

requirements have been satisfied:
- Complete MATH 136, MATH 137, and MATH 307 or MATH 310 with a grade of "C" or better in each course.
- Have an overall GPA of at least 2.4 in mathematics program courses (MATH 136 and above) completed prior to admission.

The general major (728) offers two options: (1) Non-teacher certifiable Major in Mathematics; (2) Major Certifiable for Teaching Secondary Level Mathematics. The extended major (528) offers only the first option. **Option 1 students in the general major (728) are required to satisfy a computational requirement by completing either CS 180 or 181, while those in the extended major (528) are required to satisfy a computational requirement by completing both CS 180 and either CS 181 or MATH 371. (If MATH 371 is selected to fulfill this requirement, it cannot also be used as an elective in the extended major (528).)** Option 2 students are required to complete either CS 170 or 180.

Option 1: Non-Teacher Certifiable Major in Mathematics.
(A) General Major (728): The student must complete a minimum of 39 hours of mathematics with a minor or second major giving a

with a minor or second major, giving a total of at least 59 hours (53 unduplicated) with the following requirements:

1. MATH 136, 137, 237, 307, 310, 317, 337, 498.

2. Two courses from MATH 405, 406, 415, 417, 423, 431, 435, 439, 450, 470, 473, 482.

3. Six elective hours from MATH 275 (up to 3 hours), STAT 301, MATH 305, 315, 323, 331, 370, 382, 398 (up to 3 hours), 405, 406, 415, 417, 423, **432,** 435, 439, 450, 470, 475 (up to 6 hours), 482.

4. Students may take certain 500-level mathematics courses for undergraduate credit with the approval of the Dept. Head in place of courses listed in items 2 or 3.

5. **In addition, 12 credit hours of supporting courses from the Ogden College of Science and Engineering or Gordon Ford College of Business (courses such as mathematics, statistics, sciences, engineering, economics, finance, and accounting) are required. These courses must be approved by the**

total of at least 59 hours (53 unduplicated) with the following requirements.

1. MATH 136, 137, 237, 307, 310, 317, 337, 498.

2. Two courses from MATH 405, 406, 415, 417, 423, 431, 435, 439, 450, 470, 473, 482.

3. Six elective hours from MATH 275 (up to 3 hours), STAT 301, MATH 305, 315, 323, 331, 370, **371 ,** 382, 398 (up to 3 hours), 405, 406, 415, 417, 423, 435, 439, 450, 470, 475 (up to 6 hours), 482.

4. Students may take certain 500-level mathematics courses for undergraduate credit with the approval of the Dept. Head in place of courses listed in items 2 or 3.

5. Note: This major is not intended to prepare students adequately for graduate mathematics. Students intending to seek a graduate degree should pursue major 528.

mathematics and computer science department head. These hours will not count toward a first minor nor usually toward a second major. 6. **Also required is PHIL 215, or EE 180.** 7. Note: This major is not intended to prepare students adequately for graduate mathematics. Students intending to seek a graduate degree should pursue major 528.	

(B) Extended Major (528): To prepare for graduate study in mathematics, the student must complete a minimum of 51 hours of mathematics with the following requirements:
1. MATH 136, 137, 237, 307, 310, 317, 337, 431, 498.
2. Have a concentration in one of the following areas B1, B2, or B3.
B1. Fundamentals of Analysis and Discrete Mathematics.
  i. MATH 417, 439, 450.
  ii. Two courses from MATH 315, 323, 415, 423, **432**, 473.
  iii. Six additional elective hours
	(B) Extended Major (528): To prepare for graduate study in mathematics, the student must complete a minimum of 51 hours of mathematics with the following requirements:
	1. MATH 136, 137, 237, 307, 310, 317, 337, 431, 498.
	2. Have a concentration in one of the following areas B1, B2, or B3.
	B1. Fundamentals of Analysis and Discrete Mathematics.
	  i. MATH 417, 439, 450.
	  ii. Two courses from MATH 315, 323, 415, 423, 473.
	  iii. Six additional elective hours

from MATH 275 (up to 3 hours), STAT 301, MATH 305, 315, 323, 331, 370, 382, 398 (up to 3 hours), 405, 406, 409, 415, 423, **432,** 435, 470, 473, 475 (up to 6 hours), 482.	from MATH 275 (up to 3 hours), STAT 301, MATH 305, 315, 323, 331, 370, **371 (provided MATH 371 was not used to satisfy the computational requirement above),** 382, 398 (up to 3 hours), 405, 406, 409, 415, 423, 435, 470, 473, 475 (up to 6 hours), 482.
B2. Fundamentals of Applied Mathematics. i. MATH 331, 370, 382, 405. ii. Two courses from MATH 305, 406, 435, 470, 482. iii. Three credit hours from MATH 275, STAT 301, MATH 305, 315, 323, 398, 406, 409, 415, 417, 423, **432,** 435, 439, 450, 470, 473, 475, 482.	B2. Fundamentals of Applied Mathematics. i. MATH 331, 370, 382, 405. ii. Two courses from MATH 305, 406, 435, 470, 482. iii. Three credit hours from MATH 275, STAT 301, MATH 305, 315, 323, **371 (provided MATH 371 was not used to satisfy the computational requirement above),** 398, 406, 409, 415, 417, 423, 435, 439, 450, 470, 473, 475, 482.
B3. Fundamentals of Mathematical Studies.	B3. Fundamentals of Mathematical Studies.

i.   MATH 450.

ii.   Two courses from MATH 405, 406, 409, 415, 417, 423, 435, 439, 470, 473, 482.

iii.   Twelve additional elective hours from MATH 275 (up to 3 hours), STAT 301, MATH 305, 315, 323, 331, 370, **371 (provided MATH 371 was not used to satisfy the computational requirement above),** 382, 398 (up to 3 hours), 405, 406, 409, 415, 423, 435, 470, 473, 475 (up to 6 hours), 482.

3. Students may take certain 500-level mathematics courses for undergraduate credit in place of courses listed in items B1i, B1ii, B2i, B2ii, B3i, or B3ii with the approval of the Mathematics Department head. No minor or a second major for the extended major is required.

4. Also required is PHIL 215 or EE 180.

Option 2: Major Certifiable for Teaching Secondary Level Mathematics (reference number 728): The student must complete a minimum of 36 hours of mathematics with a second major in Science and Mathematics Education (SMED) and with the following requirements:

1. MATH 136, 137, 237, 304, 307, 310, 317, 323, 498; STAT 301. Before the "professional semester" the student must complete each of these courses with a grade of "C" or better and achieve a GPA of at least 2.5 in required mathematics courses.
2. At least 3 hours of 400-level mathematics from the following list: MATH 405, 406, 409, 415, 417, 421, 423, 431, **432,** 435, 439, 450, 470, 482.
3. **Also required is PHIL 215, or EE 180.**

Students in this option must have a second major in science and mathematics education (SMED). In addition students must attain a grade of "C" or better in each required mathematics course and a 2.5 GPA for all required mathematics courses.

4. Rationale for the proposed program change:

Since WKU's general education program is being revised we are taking the opportunity to review our offerings as well. We believe that the new Colonnade program may substitute for some of the requirements we are deleting. The proposed changes in our 728 program should make this major more attractive to students with an interest in mathematics who would like to major or minor in some other area as well. It is hoped that the new requirements will provide more flexibility in scheduling so that students are able to complete their programs on time. Some of the courses required in the current program were included because they were prerequisites for MATH 307, but that is no longer the case. The inclusion of MATH 371 as an option in the computational requirement for the 528 major and as an elective in the 528 major and the non-teacher certifiable 728 major will provide students the opportunity to use *Mathematica*, which is a powerful tool in problem solving.

5. Proposed term for implementation and special provisions (if applicable):
Fall 2014

6. Dates of prior committee approvals:

Department of Mathematics	11-15-2013
Ogden College Curriculum Committee	
Professional Education Council	
Undergraduate Curriculum Committee	
University Senate	