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December 2, 2005

REPORT FROM THE OFFICE OF THE PROVOST AND VICE PRESIDENT FOR ACADEMIC AFFAIRS

The next three meetings of the University Curriculum Committee are as follows: Monday, December 5, 2005, in UC 215 from 2 – 2:55 pm; Thursday, January 5, 2006, in OC 2027 from 10 am – 12 pm; and Friday, January 6, 2006, in UC 205 from 10 am – 12 pm.

The following Graduate Petitions have been approved:

Graduate New Course Petitions:

EDUC 608 – Thinking in the Classroom

3 Credit Hours

Course Description: Examines perspectives on the nature and processes of thinking and on applications of these perspectives to curriculum development. The course emphasizes the use of educational philosophy in the analysis of critical and creative thinking, and it focuses on the ways in which the fundamental nature of teaching and learning results in educational practices that encourage non-thinking.

Implementation Date: Fall, 2006.

PA 695 – Internship in Public Agency

3 Credit Hours

Course Description: This course provides an internship experience in the public or not-for-profit sector through a minimum of 150 hours of supervised, professional work.

Prerequisites: Successful completion of 12 hours in the MPA program **OR** permission of instructor.

Implementation Date: Spring, 2006.

The following Undergraduate Petitions have been approved:

Undergraduate Experimental Course Petition:

MATH 236 X – Geometry for Middle School/Junior High Teachers **3 Credit Hours**

Course Description: This course is designed to provide the prospective middle school/junior high school math teacher with conceptual foundations for geometric concepts found in the middle-grades math curriculum. This course will include the study of logic, polygons, solids, Euclid's postulates, congruent figures, similarity, rigid motion and symmetry, vectors and transformation, and other geometries; the use of manipulatives and technology will support the teaching and learning of these topics.

Course Prerequisites: Math 226 (grade of C or better).

Rationale: Math 323, College Geometry, has been offered at USI since our beginning as a branch campus in 1965. The course is an elective course for non-teaching majors or minors in mathematics and a requirement for secondary teaching majors and minors. College Geometry has evolved in the last forty years from an advanced study of Euclidean Geometry to a more inclusive geometry including topics from modern geometries - finite geometries, elliptic geometry and hyperbolic geometry. The course is an upper-level course and requires

a significant degree of mathematical maturity. Prior experience in proving mathematical results is highly recommended and some experience with matrix algebra and abstract algebra is most desirable. The major emphasis of this course is to prepare teachers for the teaching of high school geometry.

The National Council of Teachers of Mathematics *Principles and Standards for School Mathematics (2000)* and *Indiana's Academic Standards (2000)* both contain an extensive list of standards for geometry and its connections with other topics within mathematics, as well as with other disciplines. In an effort to better prepare our elementary education majors seeking a middle-school/junior high math minor, the Department of Mathematics has allowed these students to take *College Geometry*.

There are presently (fall 05 semester) 26 students enrolled in Math 323, College Geometry equally divided between secondary and elementary education majors. The elementary education majors often find the course more difficult due to a less extensive background in mathematics. The Department of Mathematics believes that the needs of these students would be better served by offering a course in geometry covering topics related to the content that they will be teaching. (The prerequisites for this course would be a C or better in Math 226, Concepts in Geometry for Elementary, Junior High and Middle School Teachers.) Further, this course would give students the opportunity to develop the conceptual understanding and techniques needed to present these topics at the middle-school/junior high level. It is the opinion of the Department of Mathematics that these students would be much better served by a course designed for their specific needs.

Implementation Date: Fall, 2006.

UNDERGRADUATE NEW COURSE PETITIONS:

ENG 311 – Editing for Writers

1 Credit Hour

Course Description: This course surveys a wide variety of editing techniques for many document styles.

Prerequisites: ENG 301

Implementation Date: Fall, 2006.

MATH 375 – Interest Theory and Mathematical Finance

4 Credit Hours

Course Description: This course is an introduction to interest theory and mathematical finance. Topics include calculation of interest and yield rates; present, future, discounted, and accumulated values; and time intervals involved in cash flow transactions. Both continuous and discrete time models will be considered. This course provides the basic foundation for Exam MF administered jointly by the Society of Actuaries and Casualty Actuarial Society. This course does not satisfy the requirements for a degree in mathematics.

Course Prerequisites: MATH 330 (grade of C or better)

Implementation Date: Fall, 2006.

UNDERGRADUATE COURSE MODIFICATION PETITIONS:

CIS 355 (Note new number) – Introduction to eBusiness

3 Credit Hours

Prerequisite: CIS 261.

Implementation Date: Fall, 2006.

ENGR 104 – Applied Problem Solving

3 Credit Hours

New Prerequisites: ENGR 103, grade “C” or better

Implementation Date: Fall, 2006.

ENGR 108 – Introduction to Design II

2 Credit Hours

New Prerequisites: ENGR 107, grade “C” or better

Implementation Date: Fall, 2006.

UNDERGRADUATE PROGRAM MODIFICATION PETITIONS:

Baccalaureate Degree - Industrial Supervision Program

FIRST YEAR

First Semester		Second Semester	
ENG 101 Rhet & Comp I	3	ENG 201 Rhet & Comp II	3
TECH 101 Materials & Manuf.	3	PHYS 175 General Physics I	4
MATH 118 College Algebra & Trig	5	MATH 215 Survey of Calculus	3
TECH 121 CAD Fundamentals	3	CIS 151 Computer Applications	3
ENGR 103 Prin. of Problem Solving	3	ENGR 104 Applied Problem Solving	3
ENGR 101 Engineering Orient.	<u>0</u>		
	17		16

SECOND YEAR

First Semester		Second Semester	
PHYS 176 General Physics II	4	TECH 272 Robotics	3
TECH 241 Fund. of Instrumentation	2	ENG 210 Technical Writing	3
TECH 275 Safety in Manufacturing	3	ECON 265 Elementary Statistics	3
ECON 208 Microeconomics	3	ECON 209 Macroeconomics	3
ACCT 201 Accounting Principles I	3	CMST 101 Intro. to Public Speaking	3
PSY 201 Intro. to Psychology	<u>3</u>	ACCT 202 Accounting Principles II	<u>3</u>
	18		18

THIRD YEAR

First Semester		Second Semester	
MNGT 305 Mngt of Org. Behavior	3	DSCI 351 Intro. to Operations Res.	3
CHEM 175 Survey of Chem.	4	TECH 331 Q.C. Statistics	3
ENGR 382 Industrial Control Sys.	3	TECH 342 Hydraulics	3
OR		ENGR 335 Engineering Economics	3
TECH 385 Elect. Machines	3	University Core	3
University Core	3	University Core	<u>1</u>
University Core	<u>3</u>		
	16		16

FOURTH YEAR

First Semester		Second Semester	
TECH 351 Thermo & Heat Trans	3	TECH 411 Materials	3
ENGR 362 Manufacturing I	3	TECH 367 Advanced Manufacturing	3
ACCT 315 Cost Accounting	3	TECH 471 Senior Project	3
DSCI 445 Operations Management	3	University Core	3
University Core	3	University Core	<u>3</u>
University Core	<u>1</u>		
	16		15

Degree Title: Mathematics

Description: The curriculum leading to a degree in mathematics is rooted in a foundation of calculus, mathematical logic, probability, linear algebra, abstract algebra, and a study of the history of mathematics. The student's selection of electives from analysis, statistics, discrete mathematics, differential equations, and other topics allows for diversity of specialization. These topics introduce students to a broad range of mathematical

concepts and ideas that challenge their intellectual skills. Experiences from several of these courses provide an entry view into the applicability and power of mathematics to a variety of problems.

Requirements:

Required courses:

MATH 230	Calculus I (4)
MATH 253	Principles of Mathematical Logic (3)
MATH 330	Calculus II (4)
MATH 335	Calculus III (4)
MATH 412	Modern Abstract Algebra I (3)
MATH 413	Linear Algebra (3)
MATH 438	Theory of Probability (3)
MATH 492	History of Mathematics (3)

One course selected from the following:

MATH 410	Introduction to Analysis (3)
MATH 432	Advanced Calculus (3)
MATH 433	Differential Equations (3)

Elective courses:

Nine hours selected from the upper-level course offerings in mathematics as directed by advisor.

Major (Mathematics—Actuarial Track)

The curriculum leading to a degree in mathematics with an actuarial emphasis is designed to prepare students for a career as an applied mathematician in the actuarial field. The validation by educational experiences (VEE) of the Society of Actuaries (SOA) and the Casualty Actuarial Society (CAS) are met by courses in economics, applied statistics and corporate finance. Individuals may apply for the VEE credit after completion of the required coursework, a minimum grade of **B** in each course, and after passing two SOA/CAS actuarial exams. Math 438, Probability, will provide the foundation for Exam P (Probability) and Math 375, Interest Theory and Mathematical Finance, will provide the foundation for Exam MF (Mathematical Finance).

Students following this track should acknowledge the importance of good grades as many employers require a g.p.a. of 3.0 or higher. Information and application materials for the exams are available on the Society of Actuarial's web page (www.soa.org). The title of Associate, and ultimately the title of Fellow, with one of the professional societies requires the completion of additional tests and educational experiences.

Required courses for the degree in mathematics:

MATH 230	Calculus I	4 sh
MATH 253	Principles of Mathematical Logic	3 sh
MATH 330	Calculus II	4 sh
MATH 335	Calculus III	4 sh
MATH 412	Modern Abstract Algebra I	3 sh
MATH 413	Linear Algebra	3 sh
MATH 438	Theory of Probability	3 sh
MATH 441	Mathematical Statistics	3 sh
MATH 492	History of Mathematics	3 sh

Select three courses from the following:

MATH 331	Mathematical Models with Applications	3 sh
MATH 353	Discrete Mathematics	3 sh
MATH 410	Introduction to Analysis	3 sh
MATH 433	Differential Equations	3 sh
MATH 437	Numerical Analysis	3 sh

Courses required for the Actuarial Track:

CS	201	Computer Science I (JAVA)	3 sh
OR			
CS	288	Microcomputer-based Programming (Visual Basic)	3 sh

ECON 208	Principles of Microeconomics	3 sh
ECON 209	Principles of Macroeconomics	3 sh
*FIN 305	Business Finance	3 sh
FIN 461	Financial Management	3 sh
MATH 375	Interest Theory and Mathematical Finance	4 sh

** Course(s) to satisfy the VEE-Applied Statistics 3-6 sh

* ACCT 201 and ACCT 202 are prerequisites for FIN 305.

** ECON 365 or ECON 472 has been approved to satisfy the VEE-Applied Statistics credit, but for the regression topics only. For a candidate to receive full VEE-Applied Statistics credit, it must be combined with another approved course covering time series topics. The Department of Mathematics is currently developing a course that would cover both the regression topics and the time series topics.

Implementation Date: Fall, 2006.