

Course and GPA exclusionary language.

APPROVED NOV 17 2010

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In an attempt to clarify and standardize exclusionary language in the course descriptions of courses not available for credit for NSM majors and minors, the following changes have been recommended for the 24 courses included in this memo. Using the course descriptions from the 2010 – 2011 catalog, a strikeout line has been drawn through the language to be deleted – in its place will be the following statement – **“May not apply to course or gpa requirements for a major or minor in natural sciences and mathematics.”** In the cases of BIOL 1309; PHYS 1305 & 1306 there was no existing language to delete, and the change simply involved the addition of the exclusionary language. Note also PHYS 2340 – the exclusionary language is to be added just before the statement - or as natural science core curriculum course.

BIOL

BIOL 1134: Human Anatomy and Physiology Laboratory I

Cr. 1. (0-3). Prerequisite: credit for or concurrent enrollment in BIOL 1334. ~~May not apply toward a major in natural sciences and mathematics.~~ Laboratory studies of the structure and functions of the human body.

BIOL 1144: Human Anatomy and Physiology Laboratory II

Cr. 1. (0-3). Prerequisite: credit for or concurrent enrollment in BIOL 1344. ~~May not apply toward a major in natural sciences and mathematics.~~ Laboratory studies of the structure and functions of the human body.

BIOL 1153: Prenursing Microbiology Laboratory

Cr. 1. (0-3). May not receive credit until BIOL 1353 is successfully completed. ~~May not apply toward a major in natural sciences and mathematics.~~ Fundamental principles of microbiology; survey of pathogenic microorganisms and the diseases they cause.

BIOL 1309: Human Genetics and Society

Cr. 3. (3-0). Prerequisite: MATH 1310 or 1311 or equivalent. Introduction to modern principles of human genetics and the impact of their application on society. Includes fetal development and prenatal screening, mutations, cloning, human origins, gene therapy, and biotechnology. **May not apply to course or gpa requirements for a major or minor in natural sciences and mathematics.**

BIOL 1334;1344: Human Anatomy and Physiology

[TCCN—BIOL 2301:2302]

Cr. 3 per semester. (3-0). ~~May not apply toward a major in natural sciences and mathematics.~~ Structure and function of the human body.

BIOL 1353: Prenursing Microbiology

Cr. 3. (3-0). May not apply to a degree until BIOL 1153 is successfully completed. ~~May not apply toward a major in natural sciences and mathematics.~~ Fundamental principles of microbiology; survey of pathogenic microorganisms and the diseases they cause.

CHEM

None

COSC

None

EAS

None

MATH

MATH 1311: Elementary Mathematical Modeling (formerly MATH 1315)

Cr. 3. (3-0). Prerequisites: two credits of high school algebra, one credit of geometry and satisfactory score on the placement examination. ~~May not be applied to a major or minor in Mathematics.~~ Students may not receive credit for both MATH 1310 and MATH 1311. Functions, graphs, differences and rates of change, mathematical models, mathematics of finance, optimization, and mathematics of decision-making.

MATH 1312: Introduction to Mathematical Reasoning

Cr. 3. (3-0). Prerequisite: credit for or placement out of MATH 1310 or MATH 1311, ~~May not apply toward a degree from the College of Natural Sciences and Mathematics.~~ Principles of logic and proof, set theory, formal and informal geometry.

MATH 1313: Finite Mathematics with Applications

[TCCN—MATH 1324]

Cr. 3. (3-0). Prerequisite: credit for or placement out of MATH 1310. Students with prior credit for MATH 2331 will not receive credit for MATH 1313. ~~May not apply to a major or minor in mathematics.~~ Systems of linear equations, introduction to linear programming, mathematics of finance, topics in probability and statistics.

MATH 2303: Concepts in Algebra

Cr. 3. (3-0). Prerequisite: MATH 1312 or MATH 1313. ~~May not apply toward a major or minor in mathematics.~~ Mathematical systems: classical and abstract algebra, systems of numeration, and basic number theory.

MATH 2311: Introduction to Probability and Statistics

[TCCN—MATH 1342]

Cr. 3. (3-0). Prerequisite: MATH 1310 or MATH 1311. ~~May not apply toward a degree in mathematics.~~ Students with credit for MATH 3338 or MATH 3339 may not enroll in or receive credit for MATH 2311. Probability, correct probabilistic reasoning, distributions, graphical and descriptive methods, sampling estimation, hypotheses and statistical inference.

MATH 3303: Elements of Algebra and Number Theory

Cr. 3. (3-0). Prerequisite: MATH 1312 or MATH 1313 or consent of instructor. May not apply toward a major or minor in mathematics. ~~May not satisfy mathematics requirements in the College of Natural Sciences and Mathematics.~~ Topics in number theory and abstract algebra.

MATH 3304: Elements of Mathematical Analysis

Cr. 3. (3-0). Prerequisite: MATH 1312 or MATH 1313 or consent of instructor. May not apply toward a major or minor in mathematics. ~~May not satisfy mathematics requirements in the College of Natural Sciences and Mathematics.~~ Basic concepts of calculus including limits, derivatives, and integrals; selected applications.

MATH 3305: Formal and Informal Geometry

Cr. 3. (3-0). Prerequisite: MATH 1312 or MATH 1313 or consent of the instructor. May not apply toward a major or minor in mathematics. ~~May not satisfy mathematics requirements in the College of Natural Sciences and Mathematics.~~ Review of ruler and compass construction, formal axiomatic systems, finite geometries. Euclid's Elements, non-Euclidean geometry, analytic and transformational geometry.

MATH 3306: Problem Solving in Mathematics

Cr. 3. (3-0). Prerequisite: MATH 1312 or MATH 1313 or consent of instructor. May not apply toward a major or minor in mathematics. ~~May not satisfy mathematics requirements in the College of Natural Sciences and Mathematics.~~ Strategies for solving problems in mathematics: reduction to smaller problems; analogy in mathematics; conjecture and proof; the processes of abstraction, generalization, and specialization.

MATH 3307: Statistical Applications

Cr. 3. (3-0). Prerequisite: MATH 1312 or MATH 1313 or consent of instructor. May not apply toward a major or minor in mathematics. ~~May not satisfy mathematics requirements in the College of Natural Sciences and Mathematics.~~ Basic probability, sampling, statistical prediction, and process control.

MATH 3310: History of Mathematics

Cr. 3. (3-0). Prerequisite: MATH 1431. May not apply toward a major or minor in mathematics. ~~May not satisfy mathematics requirements in the College of Natural Sciences and Mathematics.~~ A survey of the history of mathematics from Euclid to Dedekind focusing on the development of the real number system and its relation to the Euclidean line.

PHYS**PHYS 1100: Physics Problem Solving Techniques**

Cr. 1. (0-3). Designed for students with weak problem-solving skills. ~~Cannot be used to satisfy physics course degree requirements.~~ Techniques for solving physics problems.

PHYS 1305: Introductory Astronomy - The Solar System

Cr. 3. (3-0). Prerequisite: credit for or concurrent enrollment in MATH 1310 or 1311. Introduction to history and development of astronomy from pre-Greek times through the modern eras. Keller's laws, Newton's laws, recent experimental results from planetary and interplanetary probes, origin and evolution theories for the solar system. **May not apply to course or gpa requirements for a major or minor in natural sciences and mathematics.**

PHYS 1306: Introductory Astronomy - Stellar and Galactic Systems

Cr. 3. (3-0). Prerequisite: credit for or concurrent enrollment in MATH 1310 or 1311. Introduction to optics, atomic physics, nuclear physics, and current astrophysical measurement techniques; stellar structure and evolution; galactic structure and evolution; cosmology. **May not apply to course or gpa requirements for a major or minor in natural sciences and mathematics.**

PHYS 2340: Science of Sound

Cr. 3. (3-0). Prerequisite: MATH 1310 or consent of instructor. ~~May not apply to a degree in Natural Sciences and Mathematics~~ or as natural science core curriculum course. Sound wave propagation relevant to the dynamics of normal speech and hearing.

PHYS 5311: Physics for High School Teachers I

Cr. 3. (2-2). Prerequisite: certification in physics or physical science. ~~May not apply toward a degree in the College of Natural Sciences and Mathematics.~~ Kinematics and dynamics of motion in one and two dimensions, rotational motion, energy and heat.

PHYS 5312: Physics for High School Teachers II

Cr. 3. (2-2). Prerequisite: PHYS 5311. ~~May not apply toward a degree in the College of Natural Sciences and Mathematics.~~ Electricity, magnetism, waves, and optics.

PHYS 5397: Selected Topics in Physics for High School Teachers

Cr. 3. (3-0). Prerequisites: consent of instructor and certification in physics or physical science. ~~May not be applied toward a degree in the College of Natural Sciences and Mathematics.~~ Modern topics in atomic, nuclear, solid state or space physics. Application

of modern technology to teaching high school physics. May be repeated for credit when topics vary.

Memorandum

To: Jeannette Morales

From: Ian Evans

Subject: Catalog changes for the 2011 – 2012 catalog

Date: 6 October 2010

The NS&M Curriculum Committee has approved the following catalog changes:

- I. Degree program deletion (BISC and BioMedTech degree)
- II. Exclusionary language for 24 courses via memo