12-15-2000

SR-00-01-(22) 63 (CC)

Marshall University

CURRICULUM COMMITTEE RECOMMENDATION

SR-00-01-(22) 63 (CC)

Recommends approval of the listed **COURSE CHANGES** for the **College of Science:**

1. IST 236 IT Fund 1: Structures
   Change in title to: Data Structures
   Rationale: This title more accurately depicts what should be shown on a student's transcript for having taken this course because of the course's objectives.

2. IST 263 Programming Practicum
   Change in title to: Web and Java Programming
   Rationale: This title more accurately depicts what should be shown on a student's transcript for having taken this course because of the course's objectives.
   -AND-
   Change in content **FROM:** Introduction to Computing and Problem Solving; Data Types and Outputs; Calculation and Inputs; Subprograms and Library Functions; Selection and Repetitive Statements; Strings and character type; Classes and Objects; Classes and Inheritance; Input and output data files; and Array data structures. The specific problems covering these topics will be studied from a software engineering perspective. The programming language JAVA will be used. The above topics are covered in the textbook. Additional material may also be covered in the class. **TO:** Introduction to HTML and web publishing (2 weeks); Setting up and maintaining a web server (2 weeks); Java programming and problem solving, including: data types, inputs, subprograms, selection and repetitive statements, strings, classes and objects. This material should cover 6 weeks. ASP scripting on Microsoft Windows 2000 web servers, including: handling script requests; applications and sessions; active server components; Database connectivity using ActiveX Data Objects. This material should cover 6 weeks. The specific problems covering these topics will be studied from a software engineering perspective. Students will learn HTML. Java, and ASP. Additional material may also be covered in the class.
   Rationale: The new content listing is more appropriate for the goal of the course, which is to provide the students with a multitude of advanced web techniques.
   -AND-
   Change in catalog description **FROM:** This course provides students with skills and experience needed in advanced programming and logic. Students will be introduced to applications using arrays and structures. I/O methods are emphasized. **TO:** Students will learn techniques for creating advanced documents and programs for the web using HTML, XML, Java, and ASP scripting. Students will learn to install and maintain a web server.
   Rationale: The new description is more appropriate for the goal of the course, and that is to provide the student with a multitude of advanced web programming techniques instead of simply one language.

3. IST 322 Environmental Assessment: Terrestrial Systems
   Change in title to: Assessment I: Terrestrial Ecology
   Rationale: Title change more accurately reflects content and meets needs of employers.

4. IST 323 Environmental Assessment: Aquatic Systems
   Change in title to: Assessment II: Aquatic Ecology
   Rationale: Title change more accurately reflects content and meets needs of employers.

5. IST 332 Systems Development I
Change in title to: Software Engineering I
Rationale: This title more accurately depicts what should be shown on a student's transcript for having taken this course because of the courses' content.

6. IST 333 Systems Development II
Change in title to: Software Engineering II
Rationale: This title more accurately depicts what should be shown on a student's transcript for having taken this course because of the courses' content.

7. IST 423 Field Sampling and Modeling
Change in title to: Applied Environmental Statistics and Data Management
Rationale: Title change more accurately reflects content and meets needs of employers.
-AND-
Change in catalog description **FROM:** Students will utilize current methods to gather data from aquatic and terrestrial systems and use computer interfaces to develop predictive models. **TO:** Course integrates current methods in database management, statistical analysis, and hypothesis testing to assess the significance of anthropognenic effects on environmental quality.
Rationale: Changes meet the needs of students who are seeking employment in environmental assessment areas, as indicated by members of our Advisory Board.

8. IST 432 Database Information Management
Change in course number **FROM** IST 432 **TO** IST 365
Rationale: The course is best suited for the junior level and the number change allows for this course to become a pre-req for senior level DB courses.

9. IST 442 Medical Biotechnology
Change in title to: Bioethics
Rationale: This course was created prior to hiring a faculty member to teach it. The program will focus the medical biotechnology on aspects of bioethics.
-AND-
Change in content **FROM:** Lecture class emphasizing social issues in medical biotechnology. This class was modeled after a similar class at James Madison University ISAT program. **TO:** This course content will not appreciably change from that originally intended, but the title will emphasize the importance placed on bio-ethics. The course will emphasize small group discussion and writing about ethics.
Rationale: ISAT students have an ethics requirement that this course will help to fulfill. Students besides Biotechnology area of emphasis may be interested in this class.
-AND-
Change in catalog description **FROM:** Discusses modern achievements of medical biotechnology; genetic testing, gene therapy, cloning, new drugs and vaccines produced via engineered organisms. Includes real case studies and media analysis. **TO:** Discuss ethical issues in scientific research: fraud, informed consent, genetic testing, gene therapy, cloning, new drugs, vaccines and foods produced via engineered organisms. Includes real case studies and media analysis.
Rationale: More accurately describes class, as it will be taught.
-AND-
Change prerequisite **FROM** IST 440 and IST 441 **TO** IST 120 and IST 220.
Rationale: The two Connections classes prepare students for this level of ethics discussion.

10. IST 443 Industrial Biotechnology
Change in title to: Protein Biotechnology
Rationale: This course was created prior to hiring a faculty member to teach it. The term Protein Biotechnology more appropriately describes the information taught in the course.
-AND-
Change in content **FROM:** Lecture class emphasizing the biotechnology industry. This class was modeled after a similar class in James Madison University ISAT program. **TO:** Lecture and lab class emphasizing protein biotechnology. Protein structures, enzyme kinetics and protein purification will be included as well as *in vitro* translation.
Rationale: Students in ISAT need more skills and fact based courses rather than discussion about biotech industry. This would be more appropriate in graduate school program in Biotechnology. This content has been moved to the two connection classes (IST 120 and IST 220).
-AND-
Change in catalog description **FROM:** Discusses Modern Achievements and techniques of industrial (non-medical) biotechnology such as genetically engineered foods and microbes used in food, chemical and environmental industries. Includes real case studies and media analyses. **TO:** Discussion covers basis of protein structure and function, post-translational modification and transport, simple immunology. Laboratories include protein quantitation, enzyme kinetics, protein purification and dialysis, protein gel electrophoresis and staining.
Rationale: More accurately describes class, as it will be taught for the first time.

11. MTH 415 Applied Mathematics – Boundary Value Problems
Change in catalog description **FROM:** Theory of systems of ordinary differential equations of first order. Theory of homogeneous and non-homogenous boundary value problems. **TO:** Differential equations. Heat Equation, Laplace's Equation, separation of variables, Fourier series, vibrating strings, eigenvalue problems, finite differences, Bessel functions, Legendre polynomials.
Rationale: The course is no longer confined to ordinary differential equations. It also contains modern numerical techniques.

FACULTY SENATE PRESIDENT:

APPROVED
BY SENATE: Donna Donathan DATE: 12-15-00

DISAPPROVED
BY SENATE: _____ DATE: _____

UNIVERSITY PRESIDENT:

APPROVED: _____ DATE: 12-18-00

DISAPPROVED: _____ DATE: _____

COMMENTS: _____