# ACADEMIC COUNCIL

TO: UMR FACULTY

Academic Council Meeting
Thursday, February 21, 2002
204 McNutt; 1:30 P.M.

I. Approval of minutes of the January 24, 2002 meeting

II. Reports and Responses

A. President's Report — *Ralph Wilkerson* (5 minutes)

B. Chancellor's Report — *Gary Thomas* (10 minutes)
   1. Questions and Answers (10 minutes)

C. Provost's Report — *Y.T. Shah* (5 minutes)
   1. New Policy Regarding "Freshman and Sophomore Instructors" *
   2. Questions and Answers (5 minutes)

III. Reports of Standing and Special Committees

A. Student Affairs * — *Mark Potrafka* (5 minutes)
B. Budgetary Affairs — *Greg Gelles* (5 minutes)
C. Student Conduct
   Student Scholastic Appeals — *David Oglesby / Steve Raper* (5 minutes)
D. Division of Foundational Studies — *Carol Ann Smith* (5 minutes)
E. Admissions & Academic Standards — *Mariesa Crow* (5 minutes)
F. Curricula * — *Thomas Schuman* (5 minutes)

IV. Old Business

A. Action Items
   1. Resolution of Video Distance Learning

V. New Business and Announcements

A. Staff Council — *Barbara Robertson*
B. Student Council — *Ryan Wilson*
C. Graduate Students Council — *Prem Lobo*
D. Referrals

* Information distributed with agenda.

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UNIVERSITY OF MISSOURI-ROLLA

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JAN 3 1 2002

January 31, 2002

MEMORANDUM TO: Dean Russell Buhite
Dean Robert Mitchell
Dean Lee Saperstein
Dean Arlan DeKock
Vice Provost Harvest Collier

FROM: Y. T. Shah, Provost

SUBJECT: Freshman and Sophomore Instructors

I have been examining the Ds, Ws and Fs for fall semester and discover that in some of the courses graduate students have been in charge of instruction with grading authority. I have discussed this matter with Chancellor Thomas and we both agree that from now on no graduate assistant will be allowed to be in charge of instruction and grading authority in freshman and sophomore classes. This applies to the present semester as well. I request you inform your department chairs to make appropriate changes should they be needed. Vice Provost Harvest Collier will be in charge of monitoring this policy. Thank you for your attention to this matter.

YTS/bjc

cc: Chancellor Thomas
Jay Goff

## Student Affairs Committee

The Student Affairs Committee recommends that the Academic Council approve the scheduling proposal from the Provost's Cabinet.

Furthermore, the committee reaffirms its previous recommendation on the Academic Free Hour. Since the concept was originally proposed in 1998, the Student Affairs Committee has recommended the inclusion of a free period in the class schedule. The original intent of academic free time was to provide time during the day where there would be no classes, laboratories, or tests where faculty and students could meet, socialize, attend and organize activities that contribute to the building of a sense of community on the UMR campus. This intent, while considered idealistic by some, remains a goal and recommendation of the committee. The committee continues to encourage students and faculty to try to use the free hour periods in this manner. The committee recognizes that issues exist regarding scheduling of space and food services and recommends ideas be explored to improve scheduling processes and services.

# Class Meeting Times

**Current**

| M W F | | T TH |
|---|---|---|
| 1. 7:30 – 8:20 | | 1. 8:05 – 9:20 |
| 2. 8:30 – 9:20 | | 2. 9:30 – 10:45 |
| 3. 9:30 – 10:20 | | 3. 11:05 – 12:20 |
| 4. 10:30 – 11:20 | (Academic Free Hour) | 12:30 – 1:30 |
| 5. 11:30 – 12:20 | | 4. 1:30 – 2:45 |
| 12:30 – 1:30 | (Academic Free Hour) | 5. 3:05 – 4:20 |
| 6. 1:30 – 2:20 | | |
| 7. 2:30 – 3:20 | | |
| 8. 3:30 – 4:20 | | |

**Proposed**

| M W F | | T TH |
|---|---|---|
| 1. 8:00 – 8:50 | | 1. 8:00 – 9:15 |
| 2. 9:00 – 9:50 | | 2. 9:30 – 10:45 |
| 3. 10:00 – 10:50 | | 3. 11:00 – 12:15 |
| 4. 11:00 – 11:50 | | 4. 12:30 – 1:30 |
| 12:00 – 1:00 | (Academic Free Hour) | 5. 1:30 – 2:45 |
| 5. 1:00 – 1:50 | | 6. 3:00 – 4:15 |
| 6. 2:00 – 2:50 | | 7. 4:30 – 5:45 |
| 7. 3:00 – 3:50 | | 6:00 – 7:15 (T, TH) |
| 8. 4:00 – 4:50 | | 7:30 – 8:45 (T, TH) |
| 9. 5:00 – 5:50 | | No Academic Free Hour on Tuesdays & Thursdays |
| 6:00 – 7:15 (M, W) | | |
| 7:30 – 8:45 (M, W) | | |

* 6:00 – 8:45 (Evening classes meeting only one night per week)

# UNIVERSITY OF MISSOURI-ROLLA

OFFICE of the REGISTRAR
103 Parker Hall
1870 Miner Circle
Rolla, MO 65409-0930


Memo To: Academic Council
From: UMR Campus Curricula Committee
RE: February 4, 2002, Meeting

The UMR Campus Curricula Committee recommends to the Academic Council that the current EC1 and CC1 forms be discontinued and replaced by three forms as follows:

Experimental Course Form (EC form) - For introducing new experimental courses. This form is largely the same as the existing EC1 form, but allowing for co-listed courses all on one form.

Course Change Form (CC form) - For modifications to existing courses and for new permanent courses. This form is a simpler version of the existing CC1 form, since it will no longer include information from curriculum changes. It also allows for co-listed courses all on one form.

Program Change Form (PC form) - For new or modified degree programs, emphasis areas, and minors. This is a new form for curriculum changes, which is much simpler than the existing CC1 currently being used for this purpose.

These forms will be made available in electronic format.

**The UMR Campus Curricula Committee recommends to the Academic Council that the curricula changes on the following CC1s be approved.**

CC1 5174, Computer Science 053, Introduction to Programming. Approved for FS2002. Change in credit hours from 2 hours lecture and 1 hour lab "TO" 3 hours lecture. Change in prerequisites from entry requirements "TO" accompanied by Cmp Sc 054. Change in description to: Emphasis placed on problem solving methods using good programming practices and algorithm design and development. Topics included are syntax/semantics, logical, relational and arithmetic operators, decision branching, loops, functions, file I/O, arrays output formatting, C-strings, and an introduction to Object-Oriented Programming including the development and use of classes.

CC1 5175, Computer Science 074, Introduction to Programming Methodology, FS2002. Approved for FS2002. Change in catalog description to: Basic structured programming and problem solving techniques using C++. Development, debugging, and testing of programs, data representation. Topics to include syntax/semantics, operators, loops, decision branching, arrays, file I/O. This course is a terminal course for non-majors and is not sufficient for entry into computer Science 153.

CC1 5176, Computer Science 054, Introduction to Programming Laboratory, FS2002. Approved new course for FS2002. 1 hour lab. Prerequisite: Cmp Sc 053. Description: Practical applications of concepts learned in Cmp Sc 053. Hands-on instruction in C++ developing, debugging, and testing programming projects.

CC1 5228, Computer Science, curriculum changes. Approved changes for FS2002. This CC1 reflects the changes made in CC1s 5174, 5175 and 5176.

CC1 5177, Information Science & Technology 301, Special Topics. Approved new course for SS2002. Variable hours. This course is designed to give the department an opportunity to test a new course. Variable title. The term approved was changed from WS2002 "TO" SS2002.

CC1 5178, Nuclear Engineering 105, Introduction to Nuclear Engineering. Approved for FS2002. Change in prerequisite from Sophomore standing "TO" Math 008.

CC1 5179, Nuclear Engineering 315, Space Nuclear Power & Propulsion. Approved for FS2002. Change in prerequisite from Math 204 "TO" Math 204, Mc Eng 219.

CC1 5180, English 000, curriculum change. Approved for FS2002. Additions and changes for the Bachelor of Arts (Preparation for Teacher Certification) English. Editorial changes were made by the committee for clarification.

CC1 5181, Civil Engineering 242, Introduction to Building Systems. Approved new course for FS2002. Co-listed with ArchE 242. 3 hours credit. Prerequisites: Physics 24, Math 204 and junior standing. Description: An introduction to life support systems and technology of interest to civil and architectural engineers in the planning and operation of large buildings. Topics include building climate and human comfort; awareness of national building code requirements; fundamentals of building HVAC systems and interior air quality; the principles of plumbing and waste systems; fundamentals of electric power distribution, equipment, and wiring systems; principles of building illumination; building transportation equipment; and the fundamentals of architectural acoustics.

CC1 5182, Architectural Engineering 242, Introduction to Building Systems. Approved new course for FS2002. Co-listed with Cv Eng 242. 3 hours credit. Prerequisites: Physics 24, Math 204 and junior standing. Description: An introduction to life support systems and technology of interest to civil and architectural engineers in the planning and operation of large buildings. Topics include building climate and human comfort; awareness of national building code requirements; fundamentals of building HVAC systems and interior air quality; the principles of plumbing and waste systems; fundamentals of electric power distribution, equipment, and wiring systems; principles of building illumination; building transportation equipment; and the fundamentals of architectural acoustics.

CC1 5183, Civil Engineering, Curriculum change. Approved for FS2002. Co-listing of Cv Eng 319 with ArchE 319 and Cv Eng 374 with ArchE 374.

CC1 5184, Architectural Engineering 319, Applied Mechanics in Structural Engineering. Approved new course for FS2002. Co-listed with Cv Eng 319. 3 hours lecture. Prerequisites: Cv Eng 217. Description: A study of basic relationships involved in the mechanics of structures. Topic include basic elasticity, failure criteria,

fundamental theories of bending and buckling of plates and cylindrical shells for practical application in analysis and design of bridge building floors and shell roofs.

CC1 5185, Architectural Engineering 374, Infrastructure Strengthening with Composites. Approved new course for FS2002. Co-listed with Cv Eng 374. 2hours lecture and 1 hour lab. Prerequisites: Cv Eng 217 and Cv Eng 223. Description: This course presents composites materials and includes principles of reinforcing and strengthening for flexure, shear and ductility enhancement. It covers the design of new concrete members reinforced with composites as well as existing members strengthened with externally bonded laminates or near surface mounted composite. Case studies are discussed and substantial laboratory exposure is provided.

CC1 5186, Military Science 108, Advanced Military Leadership and Management. Approved for FS2002. Change in course number from 108 "TO" 208. Change in prerequisites from None "TO" Mil Sc 207. Change in description to: Transition from college student/cadet to army officer (2nd Lieutenant); legal aspects of decision making and leadership; organization of the army and organization for operations from the tactical to strategic levels; administrative and logistical management, reporting to first duty station and change of station entitlements; platoon leader actions and experiences.

CC1 5187, Information Science & Technology 354, Multimedia Development and Design. Approved new course for FS2002. 3 hours credit. Prerequisites: IST 51, Cmp Sc 53 or Cmp Sc 73. Description: Students will learn current practices for development and design of interactive multimedia. The course covers tools for development of 2-D and 3-d graphics, video, audio, animation, and integrated multimedia environments. (Editorial changes, form was submitted with course # 334 but corrected to 354 and the word "Multi" was added to the title per Richard Hall.)

CC1 5188, Ceramic Engineering 000. Approved new emphasis area in MS Ceramic Engineering Degree, Ceramic Engineering/Biomaterials for FS2002.

CC1 5189, Mining Engineering 215, Materials Handling in Mines. Approved new course for FS2002. 2 hours lecture and 1 hour lab. Prerequisite: Mi Eng 003. Description: Mining applications of material transport and handling. Truck haulage and haulroads. Conveyors: belt, armored, and others; feeders; bins and bunkers; material stockpiling and homogenization; rail transport; water transport; slurry transport; mine hoists and hoisting. (This cc1 was approved at the 1/07/02 meeting. It was circulated for informational purposes.)

CC1 5190, Mining Engineering 318, Mine Atmospheric Control II. Approved for FS2002. Change in course number from 318 "TO" 418. Change in prerequisites from Mi Eng 218 "TO" Mi Eng 318. (This CC1 was approved at the 1/07/02 meeting. It was circulated for informational purposes.)

CC1 5191, Architectural Engineering 103, Architectural Materials and Methods of Construction, FS2002. Approved new course. 2 hours credit. Prerequisite: Chem 1, Chem 2 and sophomore standing. Description: A study of the origin and properties of construction materials, methods of construction, and installation. Materials include mineral based, wood, steel, concrete, masonry, asphalt, and gypsum as components of architectural engineering.

CC1 5192, Architectural Engineering 203, Introduction to Architectural Design I. Approved new course for FS2002. 1 hour lecture and 2 hours lab. Prerequisite;

Sophomore standing. Description: Introduction to the interaction between architecture and the engineering disciplines. Theories of building and site design, technology as an integral component of design, plan and spatial organization, structural clarity, formal composition, and environmental context are considered as principle form determinants.

CC1 5193, Architectural Engineering 210, Seminar. Approved new course FS2002. Seminar. 0 hours credit. Prerequisite: Senior standing. Description: Discussion of current topics.

CC1 5194, Architectural Engineering 217, Structural Analysis I. Approved new course for FS2002. Co-listed with Cv Eng 217. 2 hours lecture and 1 hour lab. Prerequisites: Bas En 50, Bas En 110, each with a grade of "C" or better. Description: Loads on Structures. Analysis of statically determinate and indeterminate beams, frames and trusses. Influence lines and moving loads. Computation of deflections. Development and use of theorems of displacement methods including slope-deflection and moment distribution to analyze statically indeterminate structures. Computer solutions.

CC1 5195, Architectural Engineering 221, Structural Design in Metals. Approved new course for FS2002. Co-listed with Cv Eng 221. 2 hours lecture and 2 hour lab. Prerequisites: ArchE 217 with a grade of "C" or better. Description: The analysis and design of structural elements and connections for buildings, bridges and specialized structures utilizing structural metals. Both elastic and plastic designs are considered.

CC1 5196, Architectural Engineering 223, Reinforced Concrete Design. Approved new course for FS2002. Co-listed with Cv Eng 223. 2 hours lecture and 1 hour lab. Prerequisites: ArchE 217 with a grade of "C" or better. Description: The analysis and design of reinforced concrete beams, slabs, columns, retaining walls and footings by the elastic and ultimate strength methods including and introduction to the design of pre-stressed concrete. Introduction to use of computers as a design aid tool.

CC1 5197, Architectural Engineering 241, Economy of Engineering Design. Approved new course for FS2002. Co-listed with Cv Eng 241. 3 hours credit. Prerequisite: Junior standing. Description: A study of the economic relationships between engineering design alternatives and economic factors such as the time value of money, risk, uncertainty and allowable depreciation methods.

CC1 5198, Architectural Engineering 247, Ethical, Legal and Professional Engineering Practice. Approved new course for FS2002. Co-listed with Cv Eng 247. 2 hours credit. Prerequisite: Junior standing. Description: Discussions of law concerning contracts, torts, agencies, real property, partnerships and corporations. The purposes and implications of the engineering registration law, the effect of legal, ethical and marketing considerations of the practice of Architectural Engineering.

CC1 5199, Architectural Engineering 248, Introduction to Contracts and Construction Engineering. Approved new course for FS2002. Co-listed with Cv Eng 248. 3 hours credit. Prerequisite: Proceeded or accompanied by ArchE 247. Description: Introduction to the concepts and techniques used in large construction projects for the preparation of engineer service contracts, the development of a project manual, detailed and conceptual cost estimating, and construction scheduling analysis.

CC1 5200, Architectural Engineering 298, Architectural Engineering Design Project. Approved new course FS2002.. 1 hour lecture and 1 hour lab. Prerequisites: ArchE 248; to be taken final semester. Description: Open-ended building design project involving one or more areas of architectural engineering. Planning design projects, philosophy of design, and the application of architectural engineering principles to design problems.

CC1 5201 Architectural Engineering 322, Analysis and Design of Wood Structures. Approved new course. FS2002. Co-listed with Cv Eng 322. 3 hours credit. Prerequisites: ArchE 217 with a grade of "C" or better. Description: A critical review of theory and practice in design of modern wood structures. Effect of plant origin and physical structure of wood on its mechanical strength; fasteners and their significance in design; development of design criteria and their application to plane and three dimensional structures.

CC1 5202, Architectural Engineering 323, Classical and Matrix Methods of Structural Analysis. Approved new course for FS2002. Co-listed with Cv Eng 323. 3 hours credit. Prerequisites: ArchE 217 with grade of "C" or better. Description: Classical displacement and force methods applied to structures of advanced design. Displacement matrix methods and computer techniques applied to continuous beams, frames, and trusses, plane grid and three dimensional frames.

CC1 5203, Architectural Engineering 325, Applied Mechanics in Structural Engineering. Approved new coursefor FS2002. Co-listed with Cv Eng 325. 3 hours credit. Prerequisites: ArchE 217 with a grade of "C" or better. Description: A study of basic relationships involved in the mechanics of structures. Topics include basic elasticity. Failure criteria, fundamental theories of bending and buckling of plates and cylindrical shells for practical application in analysis and design of bridge, building floors and shell roofs.

CC1 5204 Architectural Engineering 326, Advanced Steel Structures Design. Approved new course. FS2002. Co-listed with Cv Eng 326. 2 hours lecture and 1 hour lab. Prerequisites: ArchE 221 with a grade of "C" or better. Description: The design of structural steel systems into a final integrated structure. Plate girders, composite systems, stability, connections, rigid frames, single and multistory buildings, and similar type problems of interest to the student. Use of the computer as a tool aid in the design will be emphasized.

CC1 5205, Architectural Engineering 327, Advanced Concrete Structures Design. Approved new course for FS2002. Co-listed with Cv Eng 327. 3 hours credit. Prerequisites: ArchE 223 with a grade of "C" or better. Description: The design of structural concrete systems into a final integrated structure. Two-way slabs, long columns, connections, and discontinuity regions, deflections and cracking of beams and slabs, ACI design criteria, and similar type problems of interest to the student. Use of the computer as a tool to aid in the design will be emphasized.

CC1 5206, Architectural Engineering 328, Pre-stressed Concrete Design. Approved new course for FS2002. Co-listed with Cv Eng 328. 3 hours credit. Prerequisites: ArchE 223 with a grade of "C" or better. Description: Behavior of steel and concrete under sustained load. Analysis and design of pre-tensioned and post-tensioned reinforced concrete members and the combining of such members into an integral structure.

CC1 5207, Architectural Engineering 329, Foundation Engineering II. Approved new course for FS2002. Co-listed with Cv Eng 329. 3 hours credit. Prerequisites: ArchE 229 with a grade of "C" or better. Description: classical earth pressure theories. Analysis of shallow and deep foundations to include bearing capacity and settlement of footings, rafts, piles and drilled piers. Analysis of stability and design of retaining walls and anchored bulkheads.

CC1 5208, Architectural Engineering 345, Construction Methods. Approved new course for FS2002. Co-listed with Cv Eng 345. 3 hours total. Prerequisites: ArchE 248 with a grade of "C" or better. Description: Introduction to construction planning selection of equipment and familiarization with standard methods for horizontal and vertical construction. Application of network analysis and schedules to project control.

CC1 5209, Architectural Engineering 346, Construction Methods. Approved new course for FS2002. Co-listed with Cv Eng 346. 3 hours credit. Prerequisites: ArchE 248 with a grade of "C" or better. Description: Management of construction projects from inception to completion: estimates, role of network preplanning, project monitoring and control.

CC1 5210, Architectural Engineering 349, Engineering and Construction Contract Specifications. Approved new course for FS2002. Co-listed with Cv Eng 349. 3 hours credit. Prerequisites: ArchE 248 with a grade of "C" or better. Description: Legal and business aspects of contracts and contracting procedure in the construction industry to include contracts for engineering services and for construction. Analysis, study of precedents, and application of the more important provisions, including changes, differing site conditions, liability, arbitration, termination, disputes, appeal procedure, payments, insurance, inspection, liquidated damages, and technical provisions.

CC1 5211, Civil Engineering 000, curriculum change. Approved for FS2002. This CC1 shows a summary of all co-listed Cv Eng courses with ArchE courses. (Editorial change: The second listing of Cv Eng 247 and ArchE 247 should be Cv Eng 248 and ArchE 248. Cv Eng 301 co-listed with ArchE 301 was deleted. ArchE 301 is a new course and should be submitted on a CC1 form. Also, experimental courses may only be co-listed on a case by case basis.)

CC1 5212, Civil Engineering 221, Structural Design in Metals. Approved for FS2002. Change in prerequisites from Cv Eng 218 with grade of "C" or better "TO" Cv Eng 217 with grade of "C" or better. (Editorial change of effective term from WS2002 "TO" FS2002.)

CC1 5213, Civil Engineering 223, Reinforced Concrete Design. Approved for FS2002. Change in prerequisites from Cv Eng 218 with grade of "C" or better "TO" Cv Eng 217 with grade of "C" or better. (Editorial change of effective term from WS2002 "TO" FS2002.)

CC1 5214, Civil Engineering 319, Applied Mechanics in Structural Engineering. Approved for FS2002. Change in prerequisites from Cv Eng 218 with grade of "C" or better "TO" Cv Eng 217 with grade of "C" or better. (Editorial change of effective term from WS2002 "TO" FS2002.)

CC1 5215, Civil Engineering 322, Analysis and Design of Wood Structures. Approved for FS2002. Change in prerequisites from Cv Eng 218 with grade of "C" or better

"TO" Cv Eng 217 with grade of "C" or better. (Editorial change of effective term from WS2002 "TO" FS2002.)

CC1 5216, Civil Engineering 323, Classical and Matrix Methods of Structural Analysis. Approved for FS2002. Change in prerequisites from Cv Eng 218 with grade of "C" or better "TO" Cv Eng 217 with grade of "C" or better. (Editorial change of effective term from WS2002 "TO" FS2002.)

CC1 5217, Civil Engineering 324, Numerical Methods of Structural Analysis. Approved for FS2002. Change in prerequisites from Cv Eng 218 with grade of "C" or better "TO" Cv Eng 217 with grade of "C" or better. (Editorial change of effective term from WS2002 "TO" FS2002.)

CC1 5218, Civil Engineering 327, Advanced Concrete Structures Design. Approved for FS2002. Change in credit hours from 2 hours lecture 1 hour lab "TO" 3 hours lecture.

CC1 5219, Electrical Engineering 377, Microwave Circuit Design. Approved for SS2002. Change in course title "TO" Microwave and Millimeter Wave Engineering and Design. Change in description to: Introduce senior and graduate students to the concept microwave an millimeter wave engineering and component design such as waveguide, couplers, detectors, mixers, etc., including network theory and scattering matrix. Finally, their application in various microwave circuits will be discussed. (Editorial change of effective term from WS2002 "TO" SS2002.)

CC1 5220, Mechanical Engineering 355, Automation in Manufacturing. Approved for FS2002. Change in prerequisites from Mc Eng 253 "TO" Mc Eng 253 and Mc En 279. Change in description to: Manufacturing automation at the workstation level. Topics include kinematic and geometric error modeling of manufacturing workstations, control system hardware, servomechanism modeling and control, CNC programming, dynamic simulation, PLCs and PCs, industrial robotics modeling and control, and manufacturing systems analysis.

CC1 5221, Mechanical Engineering 363. Computer Applications in Mechanical Engineering Design. Approved for FS2002. Change in course title "TO" Principles and Practice of Computer Aided Design. Change in description to: Fundamentals of computer-aided design including geometric modeling, CAD data exchange, graphics concepts, and finite element analysis. Projects include basic graphics, matrix algebra, automated drafting, freeform curve and surface modeling, solid modeling, assembly modeling, and finite element modeling, using educational and commercial software packages including Unigraphics and Matlab. Editorial change: "or consent of instructor" was omitted from the prerequisite.

CC1 5222, Mechanical Engineering 457, Laser Aided Manufacturing and Materials Processing. Approved new course for FS2002. 3 hours credit. Prerequisite: Mc Eng 325. Description: Fundamental studies in laser aided manufacturing and materials processing including laser principles and optics, physics of laser-materials interaction, interface responses for rapid solidification, theories on non-equilibrium synthesis, modeling of transport phenomena, optical sensing techniques, current topics and considerations for lasers in manufacturing.

CC1 5223, Ceramic Engineering 111, Ceramic Materials Lab I, Characterization of Materials. Approved for FS2002. Change in catalog description to: Laboratory

experience in collection, benefaction, and characterization of ceramic raw materials; granulation, compaction, and sintering of particulate materials; and characterization at an introductory level. Standard laboratory practice including safety, report writing, and error analysis are also emphasized.

CC1 5224, Ceramic Engineering 122, Ceramic Materials Lab II, Rheology & Plastic Behavior. Approved for WS2003. Change in course title "TO" Ceramic Materials Laboratory II, glass and Traditional Ceramics. Change in description to: Laboratory experience in design, processing, and characterization of glasses and ceramics. Glasses are formulated, melted and characterized to correlate composition and properties. Clay-based ceramics are formulated to meet performance specifications, prepared by slip casting/extrusion, and fired.

CC1 5225, Architectural Engineering 000. Approved curriculum change for FS2002. Adding two new ArchE courses, ArchE 103 and ArchE 203 to the curriculum. These courses were previously listed as ArchE 1xx and ArchE 2xx.

CC1 5227, Biological Sciences 401, Special Topics. Approved new course for FS2002. Variable hours. Variable title. Description: This course is designed to give the department an opportunity to test a new course.

**For the information of the Academic Council, the following EC1s have been submitted by the University departments for an experimental course that will be offered in the near future.**

EC1 1293, Economics 301, Network Economy. Approved for FS2002. 3 hours credit. Prerequisites: Econ 221. Instructor's Permission omitted.

EC1 1294, Information Science & Technology 301, Web Design & Development. Approved for FS2002. 1.5 lecture hours and 1.5 lab hours. Prerequisite. None.

EC1 1295, Ceramic Engineering 401, Introduction to Biomaterials. Approved for FS2002. Co-listed with Mt Eng 401 and Bio Sci 401. Approved. 3 hours credit. Prerequisites: Senior undergraduate or graduate standing. (Denied as a co-listed 301/401 course.)

EC1 1296, Metallurgical Engineering 401, Introduction to Biomaterials. Approved for FS2002. Co-listed with Cr Eng 401 and Bio Sci 401. Approved. 3 hours credit. Prerequisites: Senior undergraduate or graduate standing. (Denied as a co-listed 301/401 course.)

EC1 1298, Computer Science 401, Image and Video Compression. Approved for SS2002. 3 hours lecture. Prerequisites: Cmp Sc 253.

EC1 1299, Computer Science 301, Great Ideas in Computer Science. Approved for FS2002. 3 hours credit. Prerequisites: Cmp Sc 158, Cmp Sc 153.

EC1 1300, Economics 301, Sports Economics. Approved for FS2002. 3 hours credit. Prerequisite: Econ 221. Instructor's Permission omitted.

EC1 1301, Education 301, Current Issues in Professional Development. Approved for WS2002. 2 hours credit. Prerequisites: Graduate standing.

EC1 1303, Civil Engineering 401, Contract Formulation and Project Delivery System. Approved for WS2002. 3 hours credit. Prerequisite: Cv Eng 345.

EC1 1304, Civil Engineering 301, Teaching Engineering. Approved for SS2002. Co-listed with Cp Eng, Eng Mg, Env En, and El Eng. Prerequisite: Graduate standing.

EC1 1305, Computer Engineering 401, Trustworthy, Survivable Computer Networks. Approved for FS2002. 3 hours credit. Prerequisite: Cmp Sc 319 or Cmp Sc 385. Co-listed with Cmp Sc 401.

EC1 1306, Computer Engineering 401, Systems and Software. Approved for FS2002. Prerequisites: Cp Eng 313 or Cp Eng 315 or Cp Eng 317 or Cp Eng 319 or graduate standing.

EC1 1307, Computer Engineering 401, High-Speed Networks: Design and Simulation. Approved for FS2002. 3 hours credit. Prerequisites: Cp Eng 319 or hardware competence for ECE students; Cmp Sc 285 for Cmp Sc students. (Editorial changes were made: "Consent of instructor" was omitted. A semi colon was placed after "ECE students" plus omitting the word "and" after students.

EC1 1308, Environmental Engineering 301, Teaching Engineering. Approved for SS2002. Co-listed with Cp Eng, Eng Mg, Cv Eng and El Eng. 3 hours credit. Prerequisite: Graduate student.

EC1 1309, Electrical Engineering 301, Fundamentals of Nondestructive Testing Techniques. Approved for FS2002. 3 hours credit. Prerequisite: Senior standing.
EC1 1310, Engineering Management 301, Teaching Engineering. Approved for SS2002. Co-listed with Cp Eng, Cv Eng, Env En, and El Eng. Prerequisite: Graduate standing.

EC1 1311, Mechanical Engineering 401, Modeling and Control of Manufacturing Processes. Approved for FS2002. 3 hours credit. Prerequisites: Mc Eng 355, Mc Eng 381.

EC1 1316, Mechanical Engineering 301, Introduction to Nanoscience and Engineering. Approved for FS2002. 3 hours credit. Prerequisites: Senior or graduate standing. Co-listed with Bio Sc 301, Chem 301, Ch Eng 301, Mt Eng 301, and Pe Eng 301.

EC1 1319, CpE and El Eng, Teaching Engineering 301. Approved for both CpE and El Eng for SS2002. 3 hours credit. Prerequisites: Graduate standing. Co-listed with Eng Mg 301, Env Eng 301 and Cv Eng 301.

J. Keith Nisbett, Chair
UMR Campus Curricula Committee