UNC CHARLOTTE
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TO: Faculty Council Members

FROM: Alan Freitag, Faculty President

DATE: April 30, 2009

RE: Consent Calendar

Attached is the Consent Calendar (See Article V, Section 3.A (3 & 4), J. (3 & 5) and K.3 of the Standing Rules of the Faculty Council.) consisting of these proposals:

- MBA 9-04-08 Establishment of MBAD 6165 (Negotiation and Conflict Management)
- ET 9-02-08b Establishment of Master of Fire Protection and Administration
- MATH 10-01-08 Establish MAED 5252 (Teaching Mathematics to Secondary School Learners) and MAED 5232 (Teaching Mathematics to Middle School Learners)

Below are the catalog copy descriptions. If you wish to read the full proposals, they are posted on the Academic Affairs website.

If there are any objections regarding these proposals, they must be registered with the Faculty Governance Secretary (Julie Putnam, ext. 5719) by **5 PM on May 14, 2009**. If no objections are registered, the proposals will stand approved.

- **MBA 9-02-08b Establish MBAD 6165: Negotiation and Conflict Management**

MBAD 6165. Negotiation and Conflict Management. (3)
Negotiation is the art and science of securing agreement between two or more independent parties. Conflict management involves resolving situations where the interests of two or more parties differ. This course will involve developing a repertoire of skills and techniques for negotiation and conflict management to develop a systematic and positive approach for negotiating with multiple stakeholders. Case studies, readings and simulations will be used. *(Yearly)*

- **ET 9-02-08a Establishment of Master of Fire Protection and Administration**

MASTER OF FIRE PROTECTION AND ADMINISTRATION

Admission Requirements

- An earned undergraduate degree in engineering, engineering technology, emergency management, or a related technical or scientific discipline. For the Fire Protection concentration, an undergraduate degree in engineering, engineering technology, or a related technical or scientific discipline is acceptable. For the Fire Administration concentration, a degree in engineering, engineering technology, emergency management, or a related discipline is acceptable.
- An undergraduate GPA of 2.75 or better
- Acceptable scores on the verbal, quantitative, and analytical sections of the GRE
- Positive letters of recommendation
- A TOEFL score of 83 (internet based test), 220 (computer-based) or 557 (paper-based) is required if the previous degree was from a country where English is not the common language
- Integral and differential calculus (MATH 1120 or 1121 or ETGR 3171 at UNC Charlotte or equivalent from other institution) is required for students pursuing the fire protection concentration.
- Statistics (STAT 1220 or STAT 3128 at UNC Charlotte or equivalent from other institution) is required for all students.
- An essay detailing the applicant's motivation and career goals, along with any specific research and training interests.
- Other credentials as required by the Graduate School

Acceptability for admission is based upon the applicant's record and background as determined by the department.

Application Deadline

Applications can be received by the Graduate Admission Office any time prior to their published deadlines. In order to be considered for assistantships and tuition grants for the following academic year, students should apply by February 15 because the Department makes the first round of award decisions by March 15. However, the Department will evaluate admission applications at any time that complete applications are received by the Graduate School.

Assistantships

Research and teaching assistantships are available from the Department on a competitive basis to highly qualified applicants/students.

Tuition Grants

Tuition grants including out-of-state tuition differential waivers and in-state tuition support are available on a competitive basis for both out-of-state and in-state students, respectively.

Degree requirements

The minimum requirement for the MFPA degree is 30 credit hours beyond the baccalaureate degree. This includes a minimum of 24 hours of formal course work. Students enrolled will 1) take a common core of 12 credits which includes study in both fire protection and fire administration; 2) choose additional concentrated study of 6 credits in either fire protection or fire administration, and 3) select 12 credits of directed elective. Students who elect the thesis option must complete 6 credits of MFPA 6900 as part of the directed electives. Students who select the non-thesis option will complete 30 credits of coursework and complete a

comprehensive exam. Distance students will be directed toward the nonthesis option while resident students may complete either option.

Admission to Candidacy Requirements
Each student is required to submit a Plan of Study to the Department's Graduate Director before completing 18 hours of graduate credits. Upon completion of a substantial amount of graduate work, each student must file an Admission to Candidacy to the Graduate School by the published deadline for the semester of graduation.

Application for Degree
Each student should submit an Application for Degree prior to graduation. If a student does not graduate in the semester identified on the Application, the student must complete a new form and repay the application fee to be considered for graduation in a subsequent semester.

Transfer Credit
The Department may accept the transfer of graduate courses (6 credits maximum) taken at another institution or from UNC Charlotte prior to admission to the program. Only courses with grades of B or better will be considered.

Additional Information
Additional requirements may be listed as per the requirements of the UNC Charlotte graduate catalog of the year of the applicant's admission into the program.

Core Courses
All students must complete the following 12 credit common core:
MFPA 5123 Human Behavior in Fire
MFPA 5132 Fire and Building Codes, Standards and Practices
MFPA 5223 Industrial Safety and Facilities Management
MFPA 6144 Fire Protection Systems

Students select one of the following concentration cores:
Fire Administration Concentration Core (6-credit hours):
MFPA 6120 Public and Private Sector Interoperability
MFPA 6124 Fire Service and the Community

Fire Protection Concentration Core (6-credit hours):
MFPA 6103 Fire Dynamics
MFPA 6203 Fire Modeling

Students may select 12 credits from the following directed electives to complete credit hour requirements for the degree:
MFPA 5150 Human Resource Management in Emergency Services
MFPA 6113 Fire Failure Analysis
MFPA 6126 Arson
MFPA 6164 Fire Science Laboratory
MFPA 6232 Structural Fire Safety
MFPA 6233 Performance-Based Design
MFPA 6243 Research Investigation

MFPA 6244 Fire Detection and Smoke Management
MFPA 6252 Law and Fire Safety
MFPA 6255 Leadership/Conflict Management in Public Emergency Services
MFPA 6260 Organization and Management of Public Fire Protection
MFPA 6270 Budgeting, Grants, Contracts and Finance in Emergency Services
MFPA 6800 Independent Study
MFPA 6900 Thesis (6 credits for thesis option)
CMET 5240 Safety & Risk Management
CMET 5270 Operation of Constructed Facilities
CMET 6130 Building Information Modeling
CMET 6140 Building Energy Management

Capstone Experiences
Students pursuing a master's degree in fire protection and administration have two options to complete the 30-credit hour program.
a) 24 hours of course work plus 6 hours of thesis project (MFPA 6900), or
b) 30 hours of course work and a comprehensive examination.

Both options require the formation of a program committee.
The thesis option is reserved for students who are attending the on-campus program and are performing research under formal graduate research or teaching assistantships. Students receiving such assistantships may be required to pursue the thesis option. The thesis option requires students to submit a written thesis and orally defend their work before their program committee.
All non-thesis students must complete 30 credits of coursework and successfully complete a formal comprehensive examination. The comprehensive examination is a written exam.
A student's exam will be scheduled when he/she has at least 24 hours of course credit completed or in progress. The student's graduate advisor and the examining committee will coordinate the examination (to be offered once in the fall and once in the spring semesters), preparing the exam with the assistance of members of the student's program committee. The exam will measure the student's mastery of theories and applications in the selected area of specialization within the discipline. Students will have only two opportunities to receive passing marks on the examination.

Advising
Each student is supervised by his/her graduate advisor and a program committee.

Program Committee
The Program Committee shall consist of at least three graduate faculty members. A graduate faculty from outside the ET department or from outside the student's major area-of-study may serve as a member of the Program Committee. The student's ET graduate advisor shall chair the committee.

Research Opportunity/Experience
Students in the fire protection and administration enjoy a curriculum with opportunities for interdisciplinary research, study abroad, and active participation in a growing research program. Programs of study can be tailored to suit individual needs and interests. The ET web site (www.et.uncc.edu) provides current areas of research conducted by the program faculty.

COURSES IN FIRE PROTECTION & ADMINISTRATION

MFPA 5123 Human Behavior in Fire (3)
Prerequisite: ETFS 3103 and ETFS 3113 or permission of department. Individual decision processes and behavior, modeling of people movement, calculation methods for egress prediction, egress design, and fire safety signs and alarm systems. (Fall) (Alternate years)

MFPA 5132 Fire and Building Codes, Standards and Practices (3)
Prerequisite: ETFS 3103 or permission of department. History of fire safety regulation development; building fire characteristics, fire test methods, and fire safety of buildings and structures; contemporary building and fire codes, practices, and their enforcement. (Fall) (Alternate years)

MFPA 5150 Human Resources Management in Emergency Services (3)
Cross-listed as MPAD 6134. *Prerequisite: permission of department.* A study of the context of public personnel fire/emergency services related administration; basic functions of job evaluation and compensation, employee rights and responsibilities; the legal constraints including equal opportunity, health and safety, collective bargaining; government productivity. (On demand)

MFPA 5223 Industrial Safety and Facilities Management (3)
Prerequisite: ETFS 3123 or permission of department. Investigation and analysis of hazard control principles relating to the management of personnel, facilities, and equipment, including control procedures, work-task analysis, risk identification and countermeasures, safety training, and pertinent safety management techniques. (Spring) (Alternate years)

MFPA 6103 Fire Dynamics (3)
Prerequisite: ETME 3143 and ETME 3244 or permission from the department. This course introduces students to fundamentals of fire and combustion and is intended to serve as the first exposure to fire dynamics phenomena. The course includes fundamental topics in fire and combustion such as thermodynamics of combustion, fire chemistry, premixed and diffusion flames, solid burning, ignition, plumes, heat release rate curves, and flame spread. (Fall) (Alternate years)

MFPA 6113 Fire Failure Analysis (3)
Prerequisite: MFPA 6103 or permission of department. This course provides knowledge for the development of fire investigation and reconstruction as a basis for determining fire cause and origin and evaluating and improving fire safety design. Accident investigation theory and failure analysis techniques such as fire re-creation testing and modeling are presented. (On demand)

MFPA 6120 Public and Private Sector Interoperability (3)
Cross-listed as MPAD 6290. Prerequisite: permission of department. A study of multi-agency interoperability and the effective organization and management of emergency resources at various fire and large-scale emergency incidents. Includes a review of national standards and federal regulations impacting emergency incident management. Case studies of actual and theoretical incidents will be used to reinforce command and control concepts. (Spring) (Alternate years)

MFPA 6124 Fire Service and the Community
(3) *Prerequisite: permission of department.* Theoretical concepts of public service to build an

understanding of how the fire service fits within the community. (Spring) (Alternate years)

MFPA 6126 Arson (3)
Prerequisite: permission of department. This course utilizes lecture and case studies of arson fires that were started for various reasons, including financial gain, revenge and to conceal other crimes. The criminal intent and the psychological aspects of the fire setter are discussed. (On demand)

MFPA 6144 Fire Protection Systems (3)
Prerequisite: ETFS 3103, ETFS 3113 or permission of department. An advanced study of various fire protection systems in regard to contemporary fire and life safety problems. Topics include: process of fire and smoke development, principles of active fire suppression and detection systems, hydraulics, automatic sprinkler systems, passive fire protection systems, structural fire resistance, installation and maintenance of fire protection systems. (Fall) (alternate years)

MFPA 6164 Fire Science Laboratory (3)
Prerequisite: MFPA 6103 or permission of department. This course provides overall instruction and hands-on experience with fire-science-related experimental measurement techniques. The objective is to expose students to laboratory-scale fire experiments, standard fire tests and state-of-the-art measurement techniques. (On demand)

MFPA 6203 Fire Modeling (3)
Prerequisite: MFPA 6103 or permission from the department. Modeling of compartment fire behavior is studied through the use and application of two types of models: zone and field. The zone model studied is CFAST. The field model studied is FDS. Focus on the understanding of each of these models is the primary objective in terms of needed input, interpretation of output and limitations. (Spring) (Alternate years)

MFPA 6232 Structural Fire Safety (3)
Prerequisite: ETGR 2102 or ETME 3123, ETME 3244 or permission of department. This course provides the knowledge needed for structural fire safety design and analysis. Course topics include design philosophies and methods in fire safety engineering, principles of and approaches for structural design for fire safety, behavior of compartment fires, behavior of structural materials in fire, and structural fire safety of typical materials and their components. (On demand)

MFPA 6233 Performance-Based Design (3)
Prerequisite: ETFS 6203 or permission of department. This course covers practical applications of fire protection engineering principles to the design of buildings. Both compartmented and noncompartmented buildings will be designed for criteria of life safety, property protection, continuity of operations, operational management and cost. (On demand)

MFPA 6243 Research Investigation (3)
Prerequisite: permission of the department. This course provides students with opportunities in conducting research to tackle fire safety related real world problems. With guidance from the instructor, students can work individually or as a team on a one semester project. (On demand)

MFPA 6244 Fire Detection and Smoke Management (3)
Prerequisite: ETFS 3103 or permission of department. This course addresses the fundamentals and practices of fire detection and smoke management. Topics include: principles of fire detection, fire alarm technology, and contemporary fire detection and alarm systems; principles applicable to the design and analysis of smoke management systems; factors affecting smoke movement; smoke hazard assessment; airflow in buildings, performance characteristics of smoke control and management systems. (On demand)

MFPA 6252 Law and Fire Safety (3)
Prerequisite: permission of department. Responding to natural and manufactured building hazards requires a complex legal environment, including regulation and liability. Key topics include the use of model codes, administrative regulation, retrospective codes, federal preemption, arson, performance based codes, risk based regulation, engineering malpractice, product liability and disaster investigation. (On demand)

MFPA 6255 Leadership/Conflict Management in Public Emergency Services (3)
Cross-listed as MPAD 6141. *Prerequisite: permission of department.* The role of the administrator as a focal point in social change and the management of the conflict, which occurs. Perspectives on the negotiation and bargaining process will be reviewed. (On demand)

MFPA 6260 Organization and Management of Public Fire Protection (3)
Cross-listed as MPAD 6104. Prerequisite: permission of department. A presentation of modern management principles and techniques to the organization and delivery of the array of services that communities have come to expect from the fire service. The traditional and evolving roles of the fire service to protection, prevention, risk analysis and community service are also considered. (On demand)

MFPA 6270 Budgeting, Grants, Contracts and Finance in Emergency Services (3)
Prerequisite: permission of department. This course works to develop the understanding of strategic planning, contracting and budgeting practices as well as grant proposal writing with the emphasis on contract administration skills necessary to operation of a functioning governmental entity. (On demand)

MFPA 6800 Independent Study (1-3)
Prerequisite: permission of department. The MFPA program offers independent study and special study courses to allow students to pursue studies in areas for which there are no approved formal courses. Independent study courses can only be taken on a P/F basis. Special study courses can be taken for a grade if the paperwork indicates it will be taken A/F. Each requires a title, justification, and the method of evaluation. Courses taken for A/F grade may be used to satisfy degree requirements. May be repeated for credit. (On demand)

MFPA 6900 Thesis (1-6)
Prerequisite: Consent of graduate committee advisor. Individual investigation culminating in the preparation and presentation of a thesis. May be repeated for credit. *(On demand)*

- **Establish MAED 5252 (Teaching Mathematics to Secondary School Learners) and MAED 5232 (Teaching Mathematics to Middle School Learners)**

MAED 5252. **Teaching Mathematics to Secondary School Learners. (3)**
Prerequisites: Admission to the Master of Arts in Teaching Program (Secondary Grades mathematics emphasis) or consent of the Department. This course is the initial teaching methods course for secondary school mathematics teachers. This course focuses on secondary school mathematics and its relation to the K-12 curriculum. Topics include the development of teaching strategies and activities in secondary school mathematics with an emphasis on problem solving, mathematical connections, communication and assessment, including school-based field experiences. *(Fall)*

MAED 5232. **Teaching Mathematics to Middle School Learners. (3)**
Prerequisites: Admission to the Master of Arts in Teaching Program (Middle Grades mathematics emphasis) or consent of the Department. This course is the initial teaching methods course for middle school mathematics teachers. This course focuses on secondary school mathematics and its relation to the K-12 curriculum. Topics include the development of teaching strategies and activities in middle school mathematics with an emphasis on problem solving, mathematical connections, communication and assessment, including school-based field experiences. *(Spring)*