Dr. Ray M. Bowen
President
Texas A&M University

Dear President Bowen:

At its regular meeting held October 13, 1997 the Faculty Senate approved the following curriculum matters and recommends them for your approval.

**New Graduate Courses:** ANSC 657, ANTH 630, BICH 625, CHEM 684, COSC 666, CVEN 668, EDAD 659, EPSY 641, FSTC 657, HORT 605, MBCH 625, NUEN 684, OCNG 660, PTE 618, POLS 641, SPED 614, SPED 640, SPED 682, VTPP 658, and WFSC 650.

**Graduate Course Withdrawals:** POLS 619, POLS 647, POLS 648, POLS 649, POLS 656, SPED 608, and SPED 611.

**Graduate Course Changes:** AGRO 609, EPSY 637, OCNG 650, POLS 642, and SPED 613.

**New Undergraduate Courses:** AGRO 435, PPHY 201, RENR 405, and RLEM 484.

**Undergraduate Course Withdrawals:** NVSC 202, RLEM 312, VPAT 941, and VTMP 942.

**Undergraduate Course Changes:** AERO 201, AERO 301, AERO 304, AERO 305, AERO 310, AERO 472, MEEN 213, MEEN 310, MEEN 328, MEEN 334, MEEN 335, MEEN 338, MEEN 340, MEEN 344, MEEN 346, MEEN 432, MEEN 455, MEEN 462, MEEN 465, MEEN 475, NVSC 201, NVSC 402, RLEM 314, RLEM 316, RLEM 317, RLEM 401, RLEM 415, SOCI 313, VPAT 409, VTMP 922, and WFSC 421.
Change in prefix for undergraduate and professional courses in Veterinary Pathobiology

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I enclose for your information a copy of the materials sent to Senators on the above items.

Thank you for considering these items. Please inform me of your action on these recommendations.

Sincerely,

Wayne E. Wylie
Speaker, 1997-98

Enclosures
pc: Dr. Ronald G. Douglas, Executive Vice President & Provost
    Dr. Dan H. Robertson, Chair, Graduate Council
    Dr. R. Bruce Simpson, Chair, Curriculum Committee
    Ms. Linda F. Lacey, Director of Academic Support Services

APPROVED | DATE
          | 11/3/97
I. Approved requests for new graduate courses as follows:

ANSC 657. Hazard Analysis and Critical Control Point System. (3-0). Credit 3. Examination of the Hazard Analysis and Critical Control Point (HACCP) principles specifically related to meat and poultry; microbiological and process overviews; good manufacturing practices (GMP) and standard operating procedures (SOP) development; team-building and implementation into industry operations. Cross-listed with FSTC 657.

ANTH 630. Human Evolutionary Ecology. (3-0). Credit 3. Evolutionary ecology of human behavior and culture, including habitat choice and use of space, time allocation, resource acquisition and allocation, sex and reproduction, altruism and cooperation and the coevolution of genes and culture. Prerequisite: Graduate classification.

BICH 625. Nucleic Acid - Protein Interactions. (1-0). Credit 1. Mechanisms of nucleic acid-protein interactions involved in fundamental biochemical processes such as DNA replication and rearrangement, transposition, transcription, RNA splicing and translation; original research articles presented focusing on experimental approaches, interpretation of results and overall significance. Course may be taken 8 times for credit. Cross-listed with MBCH 625. Prerequisites: BICH 431 or GENE 431 or equivalent and approval of instructor.

CHEM 684. Professional Internship. Credit 1 to 4. Supervised practical experience in professional functions appropriate to career goals in chemical education. Students will be required to complete a scholarly report of these activities acceptable to graduate committee. Enrollment is limited to students pursuing a non-thesis M.S. degree, with emphasis on chemical education. Requires approval of committee chair and department head with non-thesis M.S. degree plan filed. Prerequisite: Graduate classification in Chemistry.

COSC 666. Mechanical and Electrical Construction. (3-0). Credit 3. Selection of mechanical and electrical equipment to support construction operations; design, construction and costs of building mechanical/electrical subsystems; energy, operating and maintenance costs. Prerequisite: Graduate Classification.

CVEN 668. Advanced EPC Project Development. (3-0). Credit 3. Examines the advanced project development process-business planning and pre-project planning for engineering, procurement and construction (EPC); a process approach is followed. Issues covered are project technical and economic feasibility; scope definition; project risks; preliminary budgeting; scheduling and parametric estimating; execution strategies; negotiations; organizational design and development. Prerequisite: Graduate classification in engineering or approval of instructor.
EDAD 659. Advanced Interdisciplinary Seminar on Leadership in Interprofessional Education. (3-0). Credit 3. This course will study programs, policies and issues related to collaborative, family-centered, community-based education, health and human service systems and new Interprofessional training and research programs to support them. Prerequisite: Permission of instructor.

EPSY 641. Experimental Design in Education II. (3-0). Credit 3. Preparation in research design in educational studies; application of statistical methods in these designs. Prerequisite: EPSY 640, approval of instructor.

FSTC 657. Hazard Analysis and Critical Control Point System. (3-0). Credit 3. Examination of the Hazard Analysis and Critical Control Point (HACCP) principles specifically related to meat and poultry, microbiological and process overviews; good manufacturing practices (GMP) and standard operating procedures (SOP) development; team-building and implementation into industry operations. Cross-listed with ANSC 657.

HORT 605. Internet Applications for Horticulture. (2-2). Credit 3. Internet applications for horticulture presents the theory and practice of computer networks and networking so that the information and educational content (not the hardware) is the key; the focus is on the World Wide Web and creating Web materials for teaching, research and extension applications. Prerequisite: Graduate classification.

MBCH 625. Nucleic Acid - Protein Interactions. (1-0). Credit 1. Mechanisms of nucleic acid-protein interactions involved in fundamental biochemical processes such as DNA replication and rearrangement, transposition, transcription, RNA splicing and translation; original research articles presented focusing on experimental approaches, interpretation of results and overall significance. Course may be taken 8 times for credit. Cross-listed with BICH 625. Prerequisites: BICH 431 or GENE 431 or equivalent and approval of instructor.

NUEN 684. Professional Internship. (6-0). Credit 1 to 6. Training under the supervision of practicing engineers in settings appropriate to the student's professional objectives. Prerequisites: Approval of chair of student's advisory committee and chair of department.

OCNG 660. Implementing Marine Ecosystem Models. (3-0). Credit 3. Examination of examples of implementations of models of marine ecosystems in the most influential papers; students expected to code the simpler examples and analyze them; review of important nutrient-phytoplankton-zooplankton (NPZ) models as well as other approaches to studying aquatic ecosystems. Prerequisite: OCNG 610.

PETE 618. Modern Petroleum Production. (3-0). Credit 3. An advanced treatment of modern petroleum production engineering encompassing well deliverability from vertical, horizontal and multilateral/multibranch wells; diagnosis of well performance includes elements of well testing and production logging; in this course the function of the production engineer is envisioned in the context of well design, stimulation and artificial lift. Prerequisite: Graduate classification.
POLS 641. Seminar in Public Administration. (3-0). Credit 3. Literature and research problems of a selected aspect of public administration. May be taken 3 times.

SPED 614. Issues in Moderate and Severe Disabilities. (3-0). Credit 3. Psychological, social, physical and cognitive aspects of moderate to severe disabilities; service delivery systems; biomedical issues community programming; transition programming; adult service program, programs for the elderly; all in relation to individuals with moderate to severe disabilities. Prerequisite: Graduate Status.

SPED 640. Practicum in Consultation. (3-0). Credit 3. Supervised practice in the application of consultation strategies and techniques for solving students' academic and behavioral problems; off-campus consultation with school administrators, teachers and parents. Prerequisite: Approval of instructor.

SPED 682. Seminar in Special Education. (1-0). Credit 1. Knowledge, skills and attitudes in special education. Specific topics are announced for each seminar offered. May be taken more than once but not to exceed 6 hours of credit. Prerequisite: Graduate Status.

VTPP 658. Anatomy and Physiology of the Equine Foot. (3-0). Credit 3. This course is designed as an in-depth study of the anatomy and physiology of the foot of the horse. The presented material will include both gross and histologic anatomy, metabolic and nutrition and biomechanics of the equine foot. Prerequisites: VTPP 323 and VTPP 423.

WFSC 650. Aquatic Microbial Ecology. (3-0). Credit 3. Microbes in natural environments, including both water and sediment habitats in marine, fresh and ground water systems; process studies of microbial foodwebs and biogeochemical cycling; current methods and research directions. Prerequisite: OCNG 620, WFSC 414 or approval of instructor. Cross-listed with OCNG 650.

II. Approved requests for graduate courses to be withdrawn:

POLS 619. Urban Government and Administration.

POLS 647. Public Policy Design and Evaluation.

POLS 648. Public Personnel Administration.


POLS 656. Due Process of Law and Administrative Procedures.

SPED 608. Psychosocial Variables in Special Education.

SPED 611. Learning Characteristics of Exceptional Children.
III. Approved requests for graduate course changes as follows:

AGRO 609. Integrated Farming Systems.

Course description
from: Provide a framework for better application of ecological principles to agricultural production systems worldwide; assess ecosystem structure, function and energy/material flows at field, farm and community levels; evaluation modeling as a tool to better understand agroecosystem functions and processes.

to: A system-oriented course that stimulates critical thinking and debate regarding the strength and weakness of modern crop and livestock production systems within the context of ecological and economic sustainability; evaluates conservation tillage, integrated nutrient and pest management and multiple cropping systems.

EPSY 637. Experimental Design in Education.

Course number
from: EPSY 637.
to: EPSY 640.

Course title
from: Experimental Design in Education.
to: Experimental Design in Education I.

OCNG 650. Aquatic Microbial Ecology.

Course cross-listing
from: No cross-listing.
to: Cross-listed with WFSC 650.

POLG 642. Seminar in Public Policy and Administration.

Course title
from: Seminar in Public Policy and Administration.
to: Seminar in Public Policy.

Course description
from: Literature and research problems of a selected aspect of public policy and administration. May be taken for credit up to 3 times as content varies.
SPED 613. Individualized Teaching of Exceptional Children.

Course title
from: Individualized Teaching of Exceptional Children.
to: Issues in Educating Students with Disabilities.

Course description
from: Teaching strategies for exceptional children; management of educational data on individual pupils; collection, analysis, teacher interpretation of data and formulation of recommendations for educational change.
to: Provides an overview of research and issues related to referral, assessment and educational interventions with exceptional children and youth; information on cross-categorical approach to special education; addresses implications for future practices in special education.

Prerequisites
from: SPEC 610, 611, or approval of department head.
to: None.
The University Curriculum Committee recommends approval of the following:

1. **New Courses**

   **AGRO 435. Ecology of Agrichemicals in Field Crops and Turf. (3-0). Credit 3.**
   History, rationale, and ecological consequences of irrigation, fertilization, and pesticide applications in crop production; methods to determine the fate of agrichemicals in water, soil, and food; assessment of the risks and benefits of agrichemical use to human health, farm economy and natural habitats. Prerequisite: CHEM 101.

   **PPHY 201. Social and Environmental Aspects of Plant Physiology. (3-0). Credit 3.**
   Environmental and social issues related to plants and their impact on human populations, such as nutrition, sustainability, biotechnology landscape, medicine, clothing and building. A wide array of information will be linked in such a way that the information is usable to students in business, political science, education, liberal arts and biology.

   **RENR 405. GIS for Environmental Problem Solving. (2-2). Credit 3.**
   Interdisciplinary approach to train students to integrate GIS and relevant technologies for environmental problem solving; helps students relate learning to real world situations; students conceptualize, develop and manage projects using real data; one term project required. Prerequisite: RENR 201 or equivalent or approval of instructor.

   **RLEM 484. Internship. Credit 1 to 4.**
   Supervised experience program conducted in the student's area of specialization. Prerequisite: Approval of department head.

2. **Courses to be Withdrawn**

   **NVSC 202. Naval Ship Systems I.**

   **RLEM 312. Vegetation Responses to Herbivory.**

   **VPAT 941. Diagnostic and Clinical Pathology II.**

   **VTMP 942. Clinical Microbiology and Parasitology.**

3. **Changes in Courses**

   **AERO 201. Introduction of Aerospace Engineering.**

   Prerequisites

   from: MATH 122 or 152 or 161; MEEN 212 or ENGR 201 or registration therein.
to: MATH 152, ENGR 211 or registration therein.

**AERO 301. Theoretical Aerodynamics.**

Prerequisites  
from: AERO 201, 320; ENGR 203, 204; MATH 308.  
to: AERO 201, 320; ENGR 212, 214; MATH 308.

**AERO 304. Structural Analysis I.**

Prerequisites  
from: AERO 320, CVEN 205 or ENGR 203, 204; MATH 308.  
to: AERO 320, CVEN 205 or ENGR 212, 214; MATH 308.

**AERO 305. Aerospace Engineering Laboratory II.**

Prerequisites  
from: AERO 303, 306, 351 and 421 or registration therein; AERO 302, ELEN 306.  
to: AERO 303, 306, 351 and 421 or registration therein; AERO 302, ENGR 215.

**AERO 310. Aerospace Dynamics.**

Prerequisites  
from: MATH 308, MEEN 213 or ENGR 203, 204; AERO 320.  
to: MATH 308, MEEN 213 or ENGR 212, 214; AERO 320.

**AERO 472. Advanced Compressible Flow I.**

Course title  
from: Advanced Compressible Flow I.  
to: Airfoil and Wing Design.

Course description  
from: Subsonic and supersonic inviscid flows, high-speed similarity theory, swept wings, vortex lattice and relaxation techniques, vortex lift and delta wings, finite wings in supersonic flow.

to: Subsonic airfoil design and analysis, subsonic wing design and analysis, swept and delta wings, vortex lift, transonic flow methods, viscous transonic phenomena, transonic airfoil and wing design, supersonic panel methods, supersonic wing design, optimization.
MEEN 213. Engineering Mechanics II.

Prerequisites
from: MATH 308 or registration therein; MEEN 212.
to: MATH 308 or registration therein; ENGR 211 or MEEN 212.


Prerequisites
from: MEEN 222, 340.
to: MEEN 340; ENGR 213 or MEEN 222.

MEEN 328. Thermodynamics.

Prerequisite
from: MEEN 327.
to: ENGR 212 or MEEN 327.

MEEN 334. Mechanical Systems I.

Prerequisites
from: CVEN 205, MEEN 213, MATH 308, PHYS 208; Corequisite: MEEN 357.
to: ENGR 214 or CVEN 205; MEEN 213, MATH 308, PHYS 208; Corequisite: MEEN 357.

MEEN 335. Mechanical Systems II.

Prerequisites
from: MEEN 334, 357; ELEN 306 or registration therein.
to: MEEN 334, 357; ENGR 215 or ELEN 306 or registration therein.

MEEN 338. Mechanical Engineering Design I.

Prerequisites
from: CVEN 205; MEEN 213, 340, 357.
to: ENGR 214 or CVEN 205; MEEN 213, 340, 357.


Prerequisite
from: MEEN 222.
to: ENGR 213 or MEEN 222.
MEEN 344. Fluid Mechanics.

Prerequisites
from: MEEN 213 and 327 or 329.
to: MEEN 213; ENGR 212 or MEEN 327 or 329.


Prerequisites
from: MEEN 213 and 329.
to: MEEN 213; ENGR 212 or MEEN 329.

MEEN 432. Automotive Engineering.

Prerequisites
from: MEEN 213 and 327.
to: MEEN 213; ENGR 212 or MEEN 327.

MEEN 455. Engineering with Plastics.

Prerequisites
from: MEEN 222 or approval of instructor.
to: ENGR 213 or MEEN 222 or approval of instructor.


Prerequisite
from: MEEN 327.
to: ENGR 212 or MEEN 327.


Prerequisites
from: CVEN 205 or equivalent, MEEN 222 or 340, MEEN 213.
to: ENGR 214 or CVEN 205; ENGR 213 or MEEN 340; MEEN 213.

MEEN 475. Materials in Design.

Prerequisites
from: MEEN 340, CVEN 205.
to: MEEN 340; ENGR 214 or CVEN 205.
NVSC 201. Naval Ship Systems II.

Course number
from: NVSC 201.
to: NVSC 401.

Course title
from: Naval Ship Systems II.
to: Naval Systems.

Course description
from: Theory and principle of operation of naval weapon systems; types of weapons and fire control systems, capabilities and limitations, theory of target acquisition, identification and tracking, trajectory principles, and basics of naval ordnance.
to: Types and purpose of naval ships and aircraft; propulsion systems, damage control, and elements of design and stability characteristics; theory and operational principles of Naval Weapon systems, types of weapons and platforms, capabilities and limitations, and basics of naval ordnance. This course should be completed the second semester prior to graduation.

Prerequisite
from: NVSC 101 or approval of department head.
to: NVSC 302 or approval of department head.

NVSC 402. Leadership and Management II.

Course title
from: Leadership and Management II.
to: Leadership and Management III.

Credit hours
from: (2-0). Credit 2.
to: (3-1). Credit 3.

Course description
from: Naval junior officer responsibilities, division management and administration, current Naval policies and their application.
to: Naval junior officer ethics and responsibilities; small unit management and administration; current Navy/Marine Corps policies and their application within the Navy and Marine Corps. This course must be taken the semester of graduation.

Course title
from: Principles of Range Management.
to: Principles of Rangeland Ecology and Management.

Course description
from: Technical course in range management for students interested in basic knowledge of range management; principles of forage plant properties, ecology and management of rangelands for sustained production.
to: Technical course in basic knowledge of rangeland ecology and management; principles will be addressed within the context of contemporary natural resource management; sustainable use of rangelands through ecosystem management, coordinated resource management and conflict resolution encompassing multiple scales.

RLEM 316. Rangeland Communities and Ecosystems.

Credit hours
from: (2-0). Credit 2.
to: (2-2). Credit 3.

Prerequisites
from: RENR 205, 215; RLEM 203 or 204; RLEM 315.
to: RENR 205, 215; RLEM 203 or 204, RLEM 314.

RLEM 317. Rangeland Vegetation Manipulation.

Credit hours
from: (3-0). Credit 3.
to: (2-0). Credit 2.

RLEM 401. Grazing Dynamics of Domestic and Wild Animals.

Course title
from: Grazing Dynamics of Domestic and Wild Animals.
to: Plant-Herbivore Dynamics.

Credit hours
from: (1-3). Credit 2.
to: (2-2). Credit 3.
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Course description
from: Physio-morphical basis of foraging strategies of major domestic and wild herbivores as related to landscape/plant attributes and nutritional needs of the animal; manipulation of the grazing process to meet management objectives.

to: Evaluates the effects of herbivory at the plant population and community levels; developmental plant morphology and plant resistance to grazing; foraging strategies of herbivores relating to landscape/plant attributes along with animal nutritional needs; manipulation of the grazing process to meet management objectives.

Prerequisite
from: RLEM 316.
to: RLEM 314.

RLEM 415. Range Analysis and Management.

Prerequisites
from: RLEM 317, 401; AGEC 325.
to: RLEM 314.

SOCI 313. Sociology of the Military.

Course title
from: Sociology of the Military.
to: Military, War and Society.

Course description
from: Internal social organization of the military, especially basic roles and career styles, relations with society, manpower recruitment, role of women and minorities and factors affecting combat effectiveness.

to: Major trends and current topics in military organization; the experience and conduct of war; civil-military relations.

VPAT 409. Introduction to Diseases.

Course prefix and number
from: VPAT 409.
to: VTPB 410.
VTMP 922.  Parasitology.

Course prefix and number
from:   VTMP 922.
to:     VTPB 920.

WFSC 421.  Museums and Their Functions.

Credit hours
from:   (3-0). Credit 3.
to:     (2-3). Credit 3.

Change in prefix for undergraduate and professional courses in Veterinary Pathobiology

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