

The University of Arizona
Proceedings of the Faculty Senate

Meeting of Monday

April 1, 1968

PRESENT: Anthony, Ares, Armstrong, Blitzler, Brewer, Browning, Chadwick, Cole, Damon, Davis, Dees, Delaplaine, DuVal, Gegenheimer, Hull, Johnson, Kassander, Kemmerer, Kruttsch, Leonard, Massengale, McMillan, Mees, Patrick, Paulsen, Paylore, Quinn, Rhodes, Shields, Sorensen, Spicer, Thompson, Voris, Wilson, and Windsor. Dr. Richard K. Frevert was also present.

ABSENT: Allen, Bingham, Blecha, Carlson, Cockrum, Forrester, Gaines, Hall, Harvill, Joyner, Little, Lynn, Marcoux, Martin, McDonald, Murphy, Myers, Resnick, Robinson, Roy, Steelink, and Svob.

CATALOGUE MATERIAL: The following catalogue material was accepted:

The statement on SPECIAL GRADES on Page 132 of the catalogue was revised to read as follows:

SPECIAL GRADES - The grades S (superior) or P (passing) are used in place of grades 1 or 2 for (1) Individual Studies courses as follows: 199 (Independent Study), 299 (Special Problems), 400 (Research), 405 (Internship), 410 (Thesis), 420 (Dissertation); (2) Honors 50 (Sophomore Colloquium), Honors 250 (Honors Seminar); (3) Microbiology 101a-101b (Medical Technology).

The only grades available in courses numbered 199, 299, and 400, Honors 50 and 250, and Microbiology 101a-101b are S, P, 3, 4, 5, 6, 7, 8.

For courses numbered 399, the instructor may use these special grades or the regular number grades as his own or departmental policy dictates; but all registrants in a given instance must be graded by the same system.

The only grades available for all other courses in the 400 series (405, 410, 420) are S, P, 5, 6, 7, 8.

New Courses

The proposed new degrees Master of Science and Doctor of Philosophy in Anatomy were approved.

Anatomy 299, Special Problems (1-6) I, II Staff
Anatomy 302, Comparative Vertebrate Neuroanatomy (3) I 1968-69 Angevine, Jr. and Staff
Anatomy 305, Special Topics in Microscopic Structure (3) II Horst and Staff
Anatomy 309, Selected Topics in Gross Human Anatomy (2-6) II Kruttsch and Staff
Anatomy 310a-310b, Anatomical Techniques (3-3) Yr. 1968-69 Staff
Anatomy 313, Experimental Cytology (3) II 1968-69 Staff
Anatomy 400, Research (1-6) I, II Staff
Anatomy 401, Extended Registration (0 - No Credit) I, II Staff
Anatomy 410, Thesis (1-8) I, II Staff
Anatomy 411, Extended Registration, Thesis (0 - No Credit) I, II Staff
Anatomy 420, Dissertation (1-9) I, II Staff
Anatomy 421, Extended Registration, Dissertation (0 - No Credit) I, II Staff

Anthropology 241, Methods in Physical Anthropology (3) I Fee \$5.00 Bleibtreu
Anthropology 247, Foundations of Physical Anthropology (3) I Bleibtreu
Astronomy 71, Astronomy (3) I Staff
Art 51, Pre-Classical Art (3) I Cahn
Art 52, Classical Art (3) II Cahn
Art 87, Introduction to Photography: the Negative (3) I Fee \$20.00 Staff (For Continuing
Education Only)
Art 88, Introduction to Photography: the Print (3) II Fee \$20.00 Staff (For Continuing
Education Only)
Art 201, Early Medieval Art and Architecture (3) I Cahn
Art 202, Later Medieval Art and Architecture (3) II Cahn

The proposed new degrees Master of Science and Doctor of Philosophy in Biochemistry were approved.

Biochemistry 299, Special Problems (1-5) I, II Staff
Biochemistry 361, Advanced Topics in Biochemistry (1) I Staff
Biochemistry 368, Biological Regulatory Mechanisms (2) I 1968-69 Jensen and Mathews
Biochemistry 369, Biochemistry of Simple and Complex Lipids (2) II 1968-69 Hanahan, Wells,
and Adams
Biochemistry 398, Special Topics (1-5) I, II Staff
Biochemistry 399, Biochemistry Seminar (1-3) I, II Staff
Biochemistry 400, Research (1-5) I, II Staff
Biochemistry 401, Extended Registration (0 - No Credit) I, II Staff
Biochemistry 410, Thesis (1-5) I, II Staff
Biochemistry 411, Extended Registration, Thesis (0 - No Credit) I, II Staff
Biochemistry 420, Dissertation (1-9) I, II Staff
Biochemistry 421, Extended Registration, Dissertation (0 - No Credit) I, II Staff
Drama 210, Creative Dramatics (3) I Gipson
Drama 212, Theatre for Children (3) I, II Gipson
Economics 284a-284b, Economics of Science and Technology (3-3) Yr. Perlman
Educational Psychology 251, Programed Instruction (3) I, II Fee \$1.50 Jay

The degree Master of Arts with a major in English as a Second Language was approved.

English 207, English Grammar for ESL (3) I Staff
English 213, Applied ESL (3) II Staff
Health, Physical Education, and Recreation 49, Baseball (1) I Fee \$5.00 Sancet
Health, Physical Education, and Recreation 50, Basketball (1) I Fee \$3.50 Larson
Health, Physical Education, and Recreation 51, Football (1) II Fee \$5.00 Tatum
Health, Physical Education, and Recreation 270, Sex Education (3) I Rees
History 236a-236b, History of Rome (3-3) Yr. Breslow
Home Economics 22a-22b, Dietetics (1-1) Yr. Kight
Law 200, International Law (3) II Reynolds
Mathematics 212i, Modern Secondary Mathematics (4) Summer Ferguson
Mathematics 378, Approximation Theory (3) I Staff

A proposed new degree Doctor of Philosophy with a major in Mining Engineering was approved.

Mining Engineering 322a-322b, Advanced Design of Mining Systems (3-3) Yr. Fee \$5.00 Staff
Mining Engineering 420, Dissertation (1-9) I, II Staff
Mining Engineering 421, Extended Registration, Dissertation (0 - No Credit) I, II Staff

A proposed new Master of Arts degree in Russian was approved.

Russian 401, Extended Registration (0 - No Credit) I, II Staff
Russian 410, Thesis (1-6) I, II Staff
Russian 411, Extended Registration, Thesis (0 - No Credit) I, II Staff

Sociology 89, World Population Problems (3) II Kalbach
Sociology 183, Technology and Social Development (3) II Bennett
Speech 247s, Studies in Group Reading (3) Summer Floyd

Changes

Anthropology 140b, Physical Anthropology, Delete \$5.00 Fee
Anthropology 240, Heredity and Environment, change unit value from 2 to 3
Anthropology 246, Primatology (3) II 1967-68 change to 246a-246b (3-3) Yr. 1968-69

Biological Sciences

The proposed new degrees Master of Science and Doctor of Philosophy in Biology were approved.

The Senate also approved the recommendation of the College of Liberal Arts that in the Department of Biological Sciences separate designations of courses in Biology, Botany, and Zoology be discontinued. Effective in 1968-69, courses will be renumbered under one listing for the department with all courses designated as Biological Sciences.

Electrical Engineering 72, Introduction to Analog Computer Techniques, Add \$5.00 Fee
Engineering 170, Introduction to Engineering Analysis I, Add \$5.00 Fee
Engineering 171, Introduction to Engineering Analysis II, Add \$5.00 Fee
English 5a-5b, English Composition for Foreign Students, Add \$1.00 Fee to 5a Only
English 10, Narrative Writing (3) I, II change to 10a-10b, Introduction to Creative Writing (2-2) Yr.

English 399k, Linguistics Seminar (3) Add this topic to periods and subjects already listed
Italian 275a-275b, Advanced Composition and Conversation, change unit value from 2-2 to 3-3
Mathematics 308, Tensor Analysis (3) I change to 308a-308b, Tensor Analysis Theory and Applications (3-3) Yr.

Mathematics 321, Complex Analysis (3) I change to 321a-321b (3-3) Yr.

Mathematics 390, Advanced Probability Theory (3) II change to 390a-390b (3-3) Yr.

Military Science 103a-103b, First Year GMS, change listing of class meeting requirements in course description from 4R, 1L to 3R, 1L.

Military Science 104a-104b, Second Year GMS, change listing of class meeting requirements in course description from 4R, 1L to 3R, 1L.

Nursing, College of - the Senate approved the establishment of a Nursing College fee in the amount of \$5.00 a semester, in addition to other fees, for all students registered for 7 or more units of credit.

Physical Education for Women 31 through 38, Intermediate Physical Education, add (s) Social Dance

Physics 202i, Fundamentals of Physics (5) change to 8202a-8202b (3-3) for In-Service Institute Only.

Portuguese 275a-275b, Advanced Composition and Conversation, change unit value from 2-2 to 3-3.

Psychology 101, Human Relations (3) I, II Delete

Psychology 231, Social Philosophical Psychology (2) I Delete

Sociology 289, Population, change title to Population Analysis

Spanish 75a-75b, Intermediate Composition and Conversation, Add \$1.00 Fee

MEMBERS OF SENATE COMMITTEES, ANNOUNCEMENT OF: The Secretary reported that in accordance with recommendations of the Faculty Senate, President Harvill had appointed two special committees.

Members of the committee to study the grading system will be: Professor Diran Akmajian, School of Music; Professor Manfred Bottaccini, Department of Aerospace and Mechanical Engineering; Professor Ray J. Davis, College of Law; Professor Edgar J. McCullough, Department of Geology; and Professor Louis A. Myers, Department of Accounting. Professor Myers will serve as chairman.

Members of the committee to review the University Faculty Constitution and Bylaws will be: Dr. Leon Blitzer, Department of Physics; Dr. Donald J. Hanahan, College of Medicine; Dr. David L. Hetrick, Department of Nuclear Engineering; Vice President Samuel C. McMillan; Dr. G. Kenneth Reiblich, College of Law; Dean Francis A. Roy, College of Liberal Arts; Dr. Currin V. Shields, Department of Government; and Mr. David L. Windsor, Registrar. Dr. Shields will serve as chairman of this committee.

RECOMMENDATION FOR HONORARY DEGREE TO BE CONFERRED AT THE 1968 COMMENCEMENT, APPROVAL OF: The Senate considered and approved a recommendation concerning an honorary degree to be conferred at the 1968 Commencement. (Three other recommendations had been approved at the March Senate meeting.) This recommendation next will be considered by the General Faculty of the University and by the Board of Regents.

REPORT FROM 1967 ELECTIONS COMMITTEE: Mr. Windsor reported to the Senate that in September 1967 Robert C. Burroughs, Chairman of the 1967 Faculty Elections Committee, had furnished him with a report to the faculty setting forth certain experiences of that committee and listing some recommendations for a review of the elections procedure as set forth in Bylaw 10. Mr. Burroughs had explained that the committee was submitting the report in the hope that it could be submitted to the Faculty Senate, and through the minutes and proceedings of the Senate be transmitted to the faculty at large for their information. Mr. Windsor said that unfortunately the report had been lost in his office and had never been submitted to the Senate. Recently, upon inquiry from a member of the committee, he had realized that the report had been misplaced. He had obtained another copy, and he now wished to read it to the Senate with the understanding that it would become part of the minutes of this meeting. He then read the following to the Senate membership:

"Because of the manner in which the Faculty Committee on Elections chose to conduct the 1967 elections, we feel a report to the Faculty, through the Faculty Senate, is not only appropriate but urgent because of the nature of the recommendations made as an outgrowth of our participation in this procedure. We have divided the report into three sections: an explanation of the conduct of the four series of ballots, some description of our experiences, and recommendations for the conduct of future elections.

"I. The conduct of Faculty elections is defined in general terms in Bylaw 10. Memoranda and instructions accompany each series of ballots sent to all eligible faculty voters by the Committee on Elections; return of ballots is directed to a member of that Committee chosen by the members of the Committee. This year, the ballots were stamped with the date of receipt and held unopened until each series was completed, at which time the ballots were opened, counted, and tallied by two or more members of the Committee in the presence of each other. The following ballot was prepared immediately upon knowledge of the outcome of the previous ballot. Preparations began for the 1967 series early in March. Final results were not available until late in May.

"II. Experiences (only those which have some bearing on our recommendations, below, are cited here):

1. Number of ballots received:
 - 1) Nominating ballot for Senate: 424
 - 2) Election ballot for Senate: 751
 - 3) Nominating ballot for Chairman of the Faculty and Committee of Eleven: 418
 - 4) Election ballot for Chairman of the Faculty and Committee of Eleven: 663
2. Wasted ballots:
 - 1) Ballots cast for deceased persons, faculty wives, persons resigned from University faculty
 - 2) Ballots cast for persons ineligible for re-election
 - 3) Votes cast more than once for the same person on a single ballot
 - 4) Votes cast for persons of identical last names without initials
3. On the series of four ballots, a total of 520 names received a single vote, 184 received two votes only, and 108 received three votes only.
4. On the nominating ballot for Senate, range of votes cast for incumbent Senators eligible for re-election was from 195-108; thereafter, to obtain the required number of additional names to complete a slate of 40, we were obliged to take names for whom votes cast ranged from 27-14.
5. Because this Committee inherited no files or records, we were obliged to spend an inordinate amount of time constructing memoranda and instructions to accompany the series of ballots. Because of the large number of returned ballots (total: 2,256), the Committee chose to ask only one or two other members of the Committee, in addition to the Chairman who was always present, to assist in the tallying. The manhours required for the entire series of 1967 ballots total 65.
6. Gratuitous messages to the Committee on Elections directly on ballots were accepted in good humor, though our Committee's function does not cover the resolution of advice received.

"III. Recommendations:

1. We urgently recommend that the election ballots at least, be computerized as soon as possible, in time for the 1968 elections if feasible. One member of the 1967 Committee on Elections is familiar with computer programming and asserts that it can be programmed. Other members of the Committee belong to organizations whose election ballots are computerized. The growing magnitude of the University of Arizona faculty elections will soon (if not already) preclude the sheer manual manipulations required to process hundreds of ballots. The handling of nominating ballots will pose special problems, but with study those too can surely be improved upon.
2. Extensive revisions to Bylaw 10 will be required to modernize the faculty election procedures, including the computerization noted

under III.1, above, as well as provisions for authorizing the Committee on Faculty Elections to handle certain contingencies that arise in the conduct of the elections (e.g., under what circumstances ballots are voided; how to resolve a tie for the lowest position on a slate; how to handle requests to have a name removed from a ballot). In the absence of a policy, the Committee itself might draw up a set of regulations, subject to annual review, for its guidance. As it is, each Committee has had to deal with its problems on an ad hoc basis.

3. If other revisions to the Constitution, relating to changes in composition of the Senate, are approved, the procedure for the conduct of faculty elections will become even more unwieldy. If such revisions are approved, the Committee on Constitution and Bylaws is urged to be alert to needed revisions in Bylaw 10 as well.
4. From the messages received on many ballots, the Committee on Elections assumes that there is widespread dissatisfaction with the present procedures as set forth in Bylaw 10. The Committee may be sympathetic but is not empowered to redress the grievances so voiced. There are channels through which reforms can be achieved, and the Faculty is urged by this Committee to familiarize itself with these avenues and employ them to the end that an instrument more in keeping with the Faculty's conception of its Government can be devised.

1967 Faculty Elections Committee:

William D. Barnes
Alan E. Craven
Gordon R. Dutt
Patricia Paylore
Alan Raucher
Gladys Sorensen
Robert C. Burroughs, Chairman"

Mr. Windsor said he apologized for this report's reaching the Senate at such a late date. He said he understood the 1968 Elections Committee was already at work. He said he assumed the recommendations concerning Bylaw 10 would be ones that the Constitution and Bylaws Committee would give attention to when it began its deliberations shortly.

Dr. Gegenheimer said that he understood the 1968 Elections Committee was planning to use certain electronic data processing procedures in conducting the 1968 elections this spring. He asked if any member of the Senate saw objection to such a procedure. No objecting voices were heard.

Vice President McMillan asked if other members of the 1967 Elections Committee who were members of the Senate had additional comments to make. Miss Paylore pointed out that the committee had been troubled by the fact that all members of some departments had submitted slates of twenty names on Senate nominating ballot made up exclusively of persons from their own department. The committee realized that the reason for this was that some members of the faculty were dissatisfied with the

"same tired old faces" turning up again and again in the membership of the Senate. However, the procedure followed by these departments was hardly the best way to correct the situation. Some persons had suggested that perhaps a primary election should be conducted. Perhaps faculty members should "run for office," or, if nominees did not campaign themselves, perhaps sponsoring groups should conduct their campaigns for them. Any of these procedures, however, would be distasteful to most members of the faculty, the committee had felt. Perhaps there is a basic need, Miss Paylore said, to generate greater genuine interest in the offices of faculty government and in the candidates for election.

REPORT OF UNIVERSITY COMMITTEE ON TELEVISION: The Senate approved the following statement on "Policy of Teaching Through Television" prepared and submitted by the University Committee on Television:

"Education is basically designed to communicate ideas between individuals. Thinking can probably be described as the organization of experience and, therefore, education has as its primary objective to help the individual to think.

"Good teaching depends upon the degree of intimacy that can be developed between teacher and student. The ideal, perhaps, is the old example of Mark Hopkins on one end of a log and the student on the other. The opportunity for the pupil to confer with the teacher on an individual basis is the ideal but it is impossible to realize as the ratio of the number of pupils to the teacher increases.

"Reading the printed page is a compromise with the ideal. This method of teaching has the disadvantage of not being able to question the printed page as a teacher. It has the advantage, however, that if the first impression received by reading the book is not clear the printed page can be re-read as many times as the student desires.

"Compromise with the ideal then becomes the classroom with a teacher and a relatively small group that has had the opportunity to read carefully and then to discuss the subject with the teacher. As the ratio of students to teacher increases further, there develops a situation where the teacher lectures and the lecture then is clarified and augmented in small groups of discussion sections.

"Once the size of the class becomes sufficiently large, teaching by television offers the opportunity of getting closer to the ideal in terms of intimacy since everyone has a front seat, everyone can see, and everyone can hear. It has the disadvantage of not permitting the student to question the instructor and, therefore, this kind of teaching in order to be effective must be fortified by the small discussion sections led by capable and sympathetic instructors. The advent of color television adds enormously to effectiveness in teaching where color is of importance as it is in art, chemistry, botany, etc.

"In and of itself, television teaching is neither good nor bad. The test of the success of the medium is not in the technique but rather in the departmental enthusiasm generated for undergraduate teaching involving relatively small discussion sections. The discussion leader is just as important as the main lecturer.

"In reference to using television to educate large numbers of undergraduate students who would otherwise be subjected to the lecture-hall situation, a few points should be kept in mind. The students involved with the large lecture class are, by the large, young people. Although these young people are fully capable of digesting the subject matter presented, they must also be given an opportunity to question and develop depth of learning through this questioning. It would be ideal if a lecture could be given and the student then pursue the acceptance of its truth on his own, but young students do not always have the wisdom to know how one goes about questioning in order to learn. Consequently, educators must also provide the means for this questioning in the hope that when the student leaves the academic community he will continue to question and will seek satisfactory answers.

"Enthusiasm and interest in the complementary discussion sections are absolutely essential to the success of any educational endeavor. Without this departmental aid, the student's process of learning will disintegrate to one of rote memory and unquestioning digestion of information merely to be regurgitated at some later time on an examination. The student will have thus gained an education of sorts but without the important ingredient of understanding and ability to apply it to real situations on his own.

"Leaders of discussion sections must not be regarded as second-class teachers. Under proper and adequate supervision, selected graduate students can handle discussion sections.

"Educational television can develop into the backbone of large-scale undergraduate training. It can also be expanded to encompass far more than just lecture material. Through widespread use of television facilities, first-hand knowledge that is not available to the classroom situation can be brought directly before the student. Tapes of courses given by teachers of national reputation can bring great opportunity to both students and discussion leaders. Individual tapes can bring people of great renown to the classroom via television, e.g., Fermi, Einstein, Beadle, Nobel Prize winners, etc. Teaching important laboratory techniques can also be done quite effectively by television.

"The potential of television is virtually unlimited. It rests on the acceptance and enthusiasm for its technique that are held by the individual faculty members. Without their support, it loses a great deal of its effectiveness.

Marvin D. Johnson, Chairman
University Committee on Television"

David L. Windsor, Secretary