

The University of Arizona

PROCEEDINGS OF THE FACULTY SENATE

Meeting of Tuesday

February 2, 1965

PRESENT: Bartlett, Blecha, Blitzer, Brewer, Cockrum, Coleman, Coulter, Delaplane, Forrester, Gegenheimer, Gillmor, Gries, Hall, Harris, Harshbarger, Hull, Hillman, Hudson, Johnson, Kassander, Kemmerer, Little, Lynn, Lyons, McMillan, Muir, Myers, Patrick, Paulsen, Picard, Powell, Rappeport, Rhodes, Roy, Sorensen, Stanislawski, Svob, Vavich, Wilson, Wallraff, Windsor.

ABSENT: Beattie, Carlson, Chadwick, DuVal, Edwin Gaines, F.P. Gaines, Harvill, Kurtz, Paylore, Quinn, Siegel, Simonian, Voris.

PROPOSED CATALOGUE MATERIAL, REVIEW OF: The Senate approved a proposed new course to be given the second semester of the present academic year, History 273 - History of Modern Turkey, taught by Professor Enver Ziya Karal, NATO Visiting Professor on the University of Arizona campus. It was understood that this course would be taught the spring semester of 1964-65 only.

The Senate next considered the proposed calendar for the next biennium. Dr. Blitzer moved that the academic holiday listed for the day of the rodeo parade, La Fiesta de los Vaqueros, be discontinued and that the University return to the practice of observing an academic holiday on February 22, Washington's Birthday. Dr. Gegenheimer pointed out that several years ago Washington's Birthday was dropped as an academic holiday and the day of the rodeo parade established as a holiday instead because so many students and faculty members missed classes to attend the rodeo parade. Thus two holidays were being taken rather than one. Dr. Blitzer's motion died for lack of a second.

The Senate then adopted the biennial calendar as presented.

The Senate next considered a list of courses proposed for the summer session, as well as one off-campus Continuing Education proposal for the second semester of 1964-65 - Anthropology 7207, Papago Linguistics (3) Hale (to be offered at Sells, Ariz.)

The Summer courses presented were as follows: Agriculture 180s, Travel-Study Program (6) Selke; Art 275s, Design and Visual Aids for Classroom (3) Heldt; Education 118s, Civil Defense Instructor Training (3) Wilkie; English 262s, The Novel and Victorian Society (2) McCarthy; Government 292s, European Integration (6) Rasmussen; Home Economics 6397s, Changing Concepts in Child Development (2) Carter; Health, Physical Education and Recreation 6278s, Workshop in Traffic Safety Education and Accident Prevention (3) King; Oriental Studies 270as-270bs, Oriental History and Civilization (3-3) Silberman-Mahar; Public Administration 250s, Youth Adjustment Problems (2) Rivera; Speech 275s, Problems of the Hard of Hearing Child (2) Skinner; Zoology 223s, Marine Invertebrate Zoology (5) Pickens; Zoology 236s, Field Mammalogy (5) Cockrum; and three National Science Foundation Summer Institute courses - Anthropology 201i, General Anthropology: The Origin and Antiquity of Man (3) Chilcott; Anthropology 202i, General Anthropology: The Development of Culture (3) Chilcott; and Mathematics 296i, Foundations of Mathematics (4) Steinbrenner.

The Senate approved all of these courses.

The Senate then turned its attention to a two-page statement prepared by Mr. Windsor which listed the significant adjustments made by various review groups after the summaries of catalogue proposals had originally been prepared by the respective colleges and independent departments. Mr. Windsor's two-page report also included a statement of the highlights of the various catalogue proposals, including all proposed new majors and degrees.

Mr. Windsor called attention to the fact that objection had been raised by several persons to the proposed change in name of the Department of Air Science to Department of Aerospace Studies. He explained that some persons felt that this name would cause confusion between the Air Force ROTC department and the Department of Aerospace and Mechanical Engineering.

Dean Coleman suggested that the word "military" be inserted in front of the word "Aerospace" so that the department would be called "Department of Military Aerospace Studies". Dean Coleman said he made this suggestion with the understanding that nothing be done which would jeopardize the University's relationship with the Department of the Air Force. It was understood that the directive to change the name of the Department of Air Science to Department of Aerospace Studies had originated in Washington with the Department of the Air Force.

Dr. Harris then moved, with a second by Dean Brewer, that the new name of the Department of Air Science be "Department of Military Aerospace Studies" and the motion carried.

At Dean Little's suggestion, the Senate then considered the proposed catalogue changes college by college.

Dr. Kassander asked for an explanation of the difference between master's degrees called Master of Science or Master of Arts in a given subject and a degree Master of a specific discipline. Dean Rhodes pointed out that one distinction heretofore has been that a Master of Science or Master of Arts degree normally has required a thesis. The Master of a specific discipline has been considered to be a more professional degree and often has not required a thesis. Further, the number of units required for the professional degree has been slightly greater than the number required for the Master of Science or Master of Arts in a given field.

Dean Rhodes pointed out that usually a professional degree requires some special effort such as a special research problem, a musical composition, direction of a play, etc. He said that presentation of a thesis is optional now in many departments and it is likely that within a few years the number of special professional degrees, Master of specific disciplines, will disappear.

The catalogue proposals of the College of Agriculture, including those of the School of Home Economics, were next approved.

Mr. Windsor pointed out that there were no changes proposed by the College of Architecture, with the exception of changing the identification of the former Architecture 390, Design Projects in Planning, to Urban Planning, 390, Projects in Planning, the primary listing to be in Urban Planning with cross-listing in Architecture. This change was approved.

The proposals of the College of Business and Public Administration were approved.

Likewise, the proposals of the College of Education were approved.

The Senate then turned its attention to consideration of the material proposed by the College of Engineering. Dean Roy called attention to two proposed courses, Engineering 170, Introduction to Engineering Analysis I (3), and Engineering 171, Introduction to Engineering Analysis II (4). Both of these courses, Dean Roy stated, were part of the core curriculum in the College of Engineering and would be prerequisite to other courses. He pointed out that up to the present time the mathematics requirement in the College of Engineering has been completion of Mathematics 79a,b - Analytical Geometry and Calculus (5-5), and Mathematics 180, Calculus and Differential Equations (5). It is proposed by the faculty of the College of Engineering that in the new catalogue the requirement in advanced calculus and differential equations be replaced by a requirement in Engineering 170 and Engineering 171.

Dean Roy said he was aware that the College of Engineering felt its curriculum needed revision in order to avoid losing students who would not choose to attend this College of Engineering if its curriculum remained constructed as it has been in recent years. He said he appreciated the fact that the swing of a few years ago to requiring more advanced mathematics in the engineering curriculum had proved to be inappropriate. Obviously, he said, professional engineers today must solve many of their problems on computers. He said that the point at issue in his judgment was whether or not the University should terminate the required course work in mathematics for engineering students after only ten units of credit beyond college algebra and trigonometry.

Dean Roy said he thought it was regrettable that the development of the proposed two engineering courses to be substituted for previously required mathematics courses had proceeded with the Department of Mathematics being left unaware of the proposal. As a matter of fact the Department of Mathematics had proposed for the new catalogue, in order to accommodate the needs of engineering students, a revision of the present Mathematics 180 (5) to Mathematics 80, Calculus (2) and Mathematics 181, Ordinary Differential Equations (3).

Dean Roy said that Engineering 170 and Engineering 171 would to a considerable extent teach mathematics, that is, differential equations, and possibly teach it effectively. He said that some question had been raised about the competence of the Mathematics Department properly to teach Differential Equations. While the Department of Mathematics does not have computers to use in its instructional program, members of the mathematics faculty are competent to teach the computer applications of Differential Equations, he said. Dr. Cohn is a consultant on computers to the Argonne National Laboratory.

Dean Roy referred to the fact that this proposal, which had been developed by the faculty of the College of Engineering before the present dean of that college arrived on the campus, was considered by some persons to be a package-deal, involving also the transfer of certain instructional work from the Department of Electrical Engineering to the Department of Physics. Dean Roy said that he had heard it said that if the substitution of Engineering 170 and 171 for the former mathematics courses was not approved, the College of Engineering would rescind its decision to transfer certain course work from the Department of Electrical Engineering to the Department of Physics. This seems a poor way to handle administrative matters of this sort, Dean Roy said.

Dr. Muir said he wished to support Dean Roy's position, as a matter of principle, and for implications for the future.

The question was asked if the Coordinating Committee had approved the new courses. Dr. Muir (who is Chairman of the Coordinating Committee) answered "Yes, but not unanimously".

Dr. Blitzer asked what approval by the Coordinating Committee means. It was explained that Coordinating Committee approval means that proposals of new courses or changes in curriculum have been granted approval by that review group.

Dean Paulsen asked if discussion at this point was to any motion. Dean Roy explained that no motion was under discussion at this time.

Dr. Delaplane stated that this question was one which had been thoroughly reviewed in the Coordinating Committee, by the deans concerned and himself, and by the Advisory Council. He said that he felt a vote by the Senate at this time on whether or not Engineering 170 and Engineering 171 should be approved would be a vote not based upon adequate understanding on the part of most of the members of the Senate. He felt that the difference of viewpoints of the College of Engineering and the College of Liberal Arts on the matter demanded careful study of what the engineering sciences require in the way of mathematics course work and which courses properly should be taught in the College of Liberal Arts. Dr. Delaplane then made the following motion:

That the President appoint a committee to report to the Senate, consisting of Dean Coleman and Dean Roy, the department heads - Dr. Wymore, Dr. Cohn, and any others who the President thinks should be on that committee, to review the needs of the engineering sciences that are not being met and to assure that mathematics will be taught by the Department of Mathematics in the way it is needed by the engineers, maintaining for the present - for the next year - the status quo so that the publication of the catalogue will not be delayed and postponing consequently the decision on the proposed courses Engineering 170 and Engineering 171 until the problem can be more clearly explored and a report made to the Senate.

Dr. Muir seconded the motion.

In answer to a question from Dr. Gegenheimer, Dr. Delaplane said that his motion would provide that the proposed change in Mathematics 180 to Mathematics 80 and Mathematics 181 would be made.

Dean Coleman asked if Dr. Delaplane was making his motion on instruction from the President. Dr. Delaplane said "No, this is my own motion". He said that if his motion were approved this action would amount to instruction from the Senate to the President.

Dean Myers said that he thought a committee had earlier been appointed to review this matter. Mr. McMillan said he believed Dean Myers referred to the committee he (Mr. McMillan as presiding officer of the Advisory Council) had appointed at the time this matter was under consideration in the Advisory Council,

when Mr. McMillan had appointed Dr. Delaplane, Dean Coleman, and Dean Roy as a special committee to review this matter. However, this group had been unable to reach agreement. The Advisory Council then had approved the two proposed courses.

Dr. Muir asked if he was correct in the assumption that the proposed committee would deliberate over a period of time. Dr. Delaplane said that was his intention.

Dean Coleman said he would like to point out to the Senate that all due processes had been followed in arriving at the decision to reduce the mathematics content of the curriculum of the first two years in the College of Engineering, including faculty study and approval, action by the Coordinating Committee, review by special consultants called in by the Coordinating Committee, and approval by the Advisory Council.

Dean Coleman said he felt the question was far more grave than most of the Senators realized. He said he would not object to a committee's reviewing the matter, but would insist that the committee reach its conclusions by proper analysis. He said he wondered why the Senate would regard approval by the prior groups that had reviewed this matter as having been improper, inept, or poor.

He pointed out that the former Dean of the College of Engineering, Dr. Thomas L. Martin, is now developing similar curriculum adjustments at the institution where he is now serving, the University of Florida at Gainesville, even though he does not have the advantage of having computers immediately available. What is being proposed is in line with what is being done at most leading engineering schools. Dean Coleman said he could see no reason why the College of Engineering at the University of Arizona should not take a progressive step forward at this time. It would be to the advantage of the entire institution. He said he could not see the need of appointing such a committee as was being proposed. To continue to maintain the present curriculum as regards its mathematics content would be to continue to buck the trend in modern engineering education. This is one of the reasons, he said, that enrollment in the College of Engineering at the University of Arizona has been decreasing. He said he could not take the responsibility for any action which might result within the College of Engineering if the Mathematics Department is successful in preventing the College of Engineering from implementing the proposed adjustments. "This is my position," he stated, "and the position of the college." He reiterated the fact that this was no small matter.

Dean Rhodes commented that by saying that everything done so far in this matter has been done by due process does not imply that it now would be improper for the Senate to take whatever action it saw fit, for Senate action is also part of the due process established for consideration of curricula matters at this University. He stated further that the Senate by voting on Dr. Delaplane's motion would not be taking final action. Rather the Senate if it adopted the proposed motion would simply be saying that the group was not yet knowledgeable enough about the matter to vote Yea or Nay.

The question was asked if this matter could be investigated in time to have the matter settled before the publication deadline for the new catalogue.

Mr. Windsor and Vice President Johnson explained that the deadline for copy for the new catalogue is not more than one week away and any delay beyond

that point would cause a critical delay in the delivery date of the catalogue later in the spring. Mr. Windsor commented that it would be unfortunate if any development at this date resulted in a delay in the publication of the catalogue after the time-table of preparation for publication has been so well followed by all elements of the institution up to the present time.

Dean Hull said it seemed to him the fundamental matter here was in what area of the University it should be the responsibility for certain subject-matter to be taught. Dean Coleman replied that this matter has been examined at several levels and that it had been determined that the two proposed courses would not teach mathematics.

Mr. Windsor said he understood that the Coordinating Committee had held several special meetings to deal with this subject and that at one such meeting three outside consultants had been called in to advise the committee. He said he had been asked to permit his secretary, Miss Della Phillips, to attend this meeting to take minutes and she had done so. However, she had not reported to him any information about what had transpired at this meeting. He said he, therefore, would like to know who the three consultants were and what their counsel had been after hearing the case debated by representatives from both the Department of Mathematics and the College of Engineering.

Dr. Muir explained that the consultants had been Dr. Donald H. White, Head of the Department of Chemical Engineering; Dr. Walter S. Fitch, Associate Professor of Astronomy, and Dr. Reuben G. Gustavson, Professor of Chemistry and Adviser on Television and Science Education. The three consultants had unanimously recommended that the proposed courses be approved. The three had agreed that the material in the proposed new courses was not strictly mathematics. They further had agreed that engineering students could not at the present time receive in mathematics courses the same sort of training these courses would provide. The Coordinating Committee then had voted its approval of the courses.

Mr. McMillan asked what mathematics courses would be replaced by the new engineering courses.

Dean Coleman explained that nothing was replacing something else. Rather certain previously required mathematics work was being dropped and certain Engineering courses were being substituted for these.

Dr. Muir said that it seemed clear that some instruction in Differential Equations would be included in the material of the new Engineering courses. This is a complex question, he said, and that is one reason which led him to think that adequate time must be provided for a careful, unhurried review of the whole matter. Some people are very concerned about this question. Dean Coleman asked who was concerned. Dr. Muir responded, "The Mathematics Department". Dean Coleman asked "Why?" Dr. Muir said he understood the Mathematics people were concerned because of the implication the College of Engineering might be teaching mathematics. He explained that the consultants had recognized that there is some mathematics in the proposed new courses although instruction is in the techniques of computer application of mathematics rather than in pure mathematics.

Dr. Hillman said that he had previously served on the Coordinating Committee and he had been concerned at times about the entire question of the

responsibility of that committee to coordinate the various curricula of the University as they relate to the total program of the institution. He said he had often wondered why more authority has not been given to the Coordinating Committee. The University then would abide by the decision of that group. The Senate does not have time for this sort of question, he said. He said that he had been alarmed at times by the lobbying activity that went on before the Coordinating Committee by certain departments which were attempting to obtain approval of certain proposals. This was unwholesome, he said. He said he was convinced the Coordinating Committee should be given more authority, with its decisions accepted as final. "As it is, actions they take may later be revoked or adjusted by other groups, and the feeling often seems to be that the decision of the Coordinating Committee is not too worthwhile," he commented.

The question on Dr. Delaplane's motion was then called for and carried by a vote of twenty-one to twelve.

Dr. Hillman said that he sensed a more fundamental issue was involved than the particular issue between Engineering and Mathematics. He then moved that Dr. Harvill be asked to appoint a committee to study the functions of the Coordinating Committee and to report to the Senate. This motion was seconded by Dr. Wilson.

Dr. Patrick asked if there really was doubt about the function of the Coordinating Committee. The Coordinating Committee has a certain function to perform, but so does the Faculty Senate. Dr. Hillman replied that there is no question as to what the function of the Coordinating Committee is now, but is this the function that it might best have?

Dr. Gegenheimer pointed out that for many years he was Chairman of the Coordinating Committee and pointed out that the Committee operated under a grant of authority given originally by the Advisory Council. The Coordinating Committee was created before the Faculty Senate existed. The nature of its activities and responsibilities are well spelled out. He said in the minds of the Coordinating Committee and in the minds of most people on the campus there is no doubt as to what its functions are.

The question was called for and by voice vote Dr. Hillman's motion lost.

Dean Little asked if the consideration of the Mathematics-Engineering question by the committee authorized by the action of the Senate on Dr. Delaplane's motion could not be expedited. He said he felt it would be unfortunate if this matter could not be resolved before the new catalogue is published. So much groundwork has been laid already that he thought members of the committee could be appointed, complete their deliberations, and report back to the Senate in a very short time. He then moved that the committee be asked to act as expeditiously as possible. This motion was seconded by Dr. Gegenheimer and carried unanimously.

The Senate then approved the balance of the catalogue material proposed by the College of Engineering.

The Senate approved the catalogue material proposed by the College of Fine Arts, including the School of Music.

The catalogue proposals of the College of Law were approved.

The material proposed by the College of Liberal Arts was approved.

The material proposed by the College of Mines was approved.

Likewise the material proposed by the College of Nursing was approved.

The material proposed by the College of Pharmacy was approved.

The proposals of the Department of Health, Physical Education and Recreation, and the Department of Physical Education for Women were approved.

The material proposed by the Department of Military Science and the Department of Air Science was approved, with the understanding that the proposed new name - Department of Aerospace Studies would if possible be revised to be Department of Military Aerospace Studies.

The catalogue material proposed by the Graduate College was approved.

ELECTION OF ADDITIONAL SENATORS-AT-LARGE, RECOMMENDATION RE: Dr. Gegenheimer pointed out that later in the spring the biennial election of Senators-at-large would be held. He explained that it had been some time since the number of Senators-at-large had been increased. Originally the number had been 15. It was increased to 17 in 1958 when there were 815 members of the faculty, and increased in 1961 to 20 when there were 1012 members of the faculty. He said it would be more orderly not to make changes by amendment to the By-laws "every now and again". He felt a regular mechanism should be established for this. The original ratio had been one Senator-at-large for every 22 members of the faculty. In 1958 the ratio became one Senator-at-large for every 47 members of the faculty, and the 1961 action resulted in a ratio of one Senator-at-large for every 50.6 members of the faculty.

Dr. Gegenheimer then moved that the Senate instruct the Committee on By-laws to present a suitable plan to the Senate at its next regular meeting, providing that the number of Senators-at-large be permanently set at one for each fifty members of the faculty or each major fraction thereof, the number of the voting faculty to be the number on appointment as of September first preceding the spring when the election of Senators-at-large is held. At the present time the total faculty numbers 1191, he said, which would mean that had his proposal been in effect at the present time, the Senate would include twenty-four Senators-at-large rather than twenty. His motion was seconded by Dr. Kemmerer.

Dean Rhodes asked if the Senate should consider Dr. Gegenheimer's motion thinking only in terms of the total number of faculty members in relation to the number of Senators-at-large. Dr. Gegenheimer said that as a matter of fact earlier the number of elected Senators-at-large had been considered in relation to the number of ex-officio members, that is, Vice Presidents, Deans, etc. He said he did not feel that the number of Senators-at-large should bear relationship to the number of ex-officio members, although the number of such ex-officio members probably would tend to increase at about the same rate proportionately as the number of faculty members. He said he felt no serious imbalance in the Senate was threatened by his proposal.

He said he thought it would be good to involve a few more members of the faculty in the Senate as the size of the General Faculty increases and he would rather have the increase in Senators-at-large related to the size of the faculty than to an increase in the number of ex-officio members.

Dean Rhodes said he concurred with Dr. Gegenheimer's feeling on this point. However, he felt that the Senate should not consider Dr. Gegenheimer's motion without remembering that in the beginning the number of Senators-at-large was reached in consideration of the number of ex-officio members in the Senate rather than in relation to the total number of members of the faculty.

The question was then called for and by voice vote carried, with one dissenting vote by Vice President Johnson.

The meeting adjourned at 5:00 P.M.

David L. Windsor, Secretary