

UNIVERSITY OF MINNESOTA  
Graduate School

Minutes of the Executive Committee  
Thursday, November 21, 1968  
1:00 P.M. 102 Johnston Hall

Present: Professors A. C. Caldwell, Samuel Kirkwood, Jack Merwin, D. W. Thompson, William Warner, E. W. McDiarmid; Drs. Lewis Wannamaker and R. Drew Miller; Deans Francis M. Boddy, W. E. Ibele, M. L. Gieske, M. H. Lease; Miss Ruth Chovancek, by invitation; Dean Bryce Crawford, Jr., presiding; Shirley McDonald, secretary.

1. The Supporting Statement for the Use of the Research Technique or Collateral Field

- ✓ The Graduate School will no longer require a statement by the adviser supporting the student's choice of one of these options in the Ph.D. program. The adviser's signature on the program is sufficient endorsement; the Research Technique and Collateral Field selections have, in the majority of cases, been acceptable and holding the programs for supporting statements has created unnecessary delay in action. The graduate group committees or the Graduate School, in the normal reviewing process, can request documentation if necessary. Professor Thompson said that while the Language, Literature, and Art Group Committee has never held to the supporting-statement requirement, the Thesis Title and outline must accompany the program if a Research Technique or Collateral Field is used in lieu of the second foreign language.

2. Use of Major Courses in the Minor and Supporting Program

In the review of programs, Graduate School personnel have had some discussion about the inclusion of major courses in the minor or Supporting Programs in both Master's and Ph.D. programs. Situations in which a strict major-minor split will not serve the best purpose are increasing, as evidenced by the recently approved Internal Supporting Programs in Mathematics, Philosophy, and English.

✓3. Registration of the Thesis and the Thirty Day Rule

The Graduate School group committee staff have had many questions from students and advisers about the 30-day waiting period required between the registration of the thesis and the taking of the final oral examination. This rule was established to allow sufficient time for the circulation and reading of the thesis; if changes must be made in the thesis, time has to be allowed for this also. The majors in the Medical areas and most others must adhere strictly to this policy, but there are fields in which the full 30 days may not be needed, especially if multiple copies of the thesis in complete

draft form are available. A petition, endorsed by the readers, has been required to waive the 30-day rule for Ph.D. students. Since the regulation often comes as a surprise to many students and advisers, the Graduate School will attempt to improve communication by attaching to the Ph.D. Thesis Reader's Report a form explaining the regulation. If the student and adviser believe that less time is required, certification by the readers can be made on this attachment and it can be returned to the Graduate School for action. The Medical areas will continue to hold to the 30 days for both Master's and Ph.D.'s; there have been few problems here since the departments are aware of the rule and the students and advisers are reminded, by memorandum, at the time of program approval.

4. Registration and Records-keeping

Miss Ruth Chovancek was invited to report on progress towards the development of a Registration Permit for all graduate students. She explained that the Graduate School has not been able to monitor registration by students who are not making satisfactory progress towards the degree. (Satisfactory progress can be imperiled by several things -- falling below the minimum required grade-point average, too many incomplete grades on the record, graduate program and thesis title not filed; terminations; Library, Health Service, and disciplinary holds; etc.)

It has been proposed that there be three types of cards designed to "clue" registration personnel and students as to current student status. The first type would indicate that the student is in good standing, and can proceed with registration. The second would serve to warn the student that he is below the minimum grade-point average, has too many incomplete grades (or both), or has not filed a program or thesis title at an appropriate time. Students in this category would be allowed to register, but would be asked to contact their adviser and take necessary steps to remove deficiencies before the next quarter's registration. The third group would include students who would not be allowed to register -- those who had not cleared deficiencies following the warning stage, those with Master's or Bachelor's degrees pending; terminations; and the various holds mentioned above. Such students would be referred to the appropriate Graduate School office for counsel. The Graduate School currently runs a quarterly grade check. Computer print-outs listing grades for students who fall below a 3.0 grade-point average are available and the Admissions Office usually contacts advisers whose students have 15 credits of incomplete and a low grade-point average, or 20 credits of incomplete and a satisfactory grade-point average.

Miss Chovancek asked about variations in standards set by individual departments for the new system. While it is possible to design the program for variations, a common pattern would be much easier to administer.

One of the complications in Graduate School operation is related to the timing of submission of programs and thesis titles. A quarter's warning should be of benefit to the students also, for not many are aware of the time required for group committee and Graduate School action on programs as well as alterations in approved programs. Reasonable deviations would be expected. There could be an atypical case which would call for an exception to the "normal" rate of progress. This kind of information could be put into the computer so that the student would be cleared for registration the following quarter.

Present plans will probably require the student's appearing in person in the Graduate School to register. It is hoped that eventually Registration Permits can be mailed to students in the first (clear) and second (warning) categories and that they can by-pass the Graduate School office.

Dean Crawford asked when the Registration Permit system might be ready. Miss Chovancek said that a recent conversation with Data Processing personnel seemed to indicate that the current shortage in trained computer programmers will cause some delay. Certainly the system cannot be ready much before the opening of the fall 1969 registration.

Miss Chovancek informed the Executive Committee that in January, 1969, certain items will be entered into the computer for all graduate school applications which receive action. Copies of the list of items and the mark-sense form to be used for this purpose were distributed. Samples are attached to these minutes. This information will be entered every week or so and it will be "locked" into the students' records. The information may be useful to departments and departmental committees for various surveys and studies.

Dean Crawford asked that the group committees discuss the Registration Permit; he will contact the Graduate Faculty by newsletter in which he will outline what is planned and will invite reaction and suggestions.

5. Transfer of Credit from Other Colleges and Universities to the Master's Degree at the University of Minnesota (Plan B)

The group committees were asked to discuss the current no-transfer rule which has been somewhat of a problem to inservice teachers who take graduate courses at local colleges then migrate to the Twin City area only to find that the credit cannot be applied to the Master's program at the University of Minnesota. Professor Thompson reported for the Language, Literature, and Art Group Committee. The general consensus is that for the majors within this Committee's scope, anything less than the 45 credits taken in residence would not allow for a full knowledge of the candidate and his work; however,

the Committee expressed no objection to the relaxation of the Graduate School rule to give departments some leeway for their own application. Professor Warner stated that the Physical Sciences Group Committee believes that if evaluation of the outside credit is maintained by the individual fields, some transfer of credit could be considered. The Education Group Committee reached no consensus, according to Professor Merwin. The Master's degree is considered differently in the various fields. In areas where the Ph.D. is the recommended degree, it might be well to allow some transfer of outside credits towards the Master's to reduce the time it takes to get the degree. In other areas, the Master's Degree may be terminal for many candidates and there is a deeper concern for the quality of that degree. The Education Committee agreed that cooperative arrangements between institutions might be worked out to allow for particular groups of students.

The item will be carried forward.

6. Proposed Specialist Certificate in Education at Duluth (Elementary, Secondary, or General School Administration)

The proposal has been reviewed by the Education Group Committee and approval recommended. Dean Crawford pointed out that the educational institutions in Minnesota are accredited by the North Central Accrediting Association, which reviews any proposed new or expanded programs prior to their adoption. The Specialist Certificate represents a development beyond the Master's Degree at Duluth and thus must be cleared by this agency before final action can be taken.

Professor Jack Merwin of the College of Education and Dean Harry Lease from Duluth will take the lead in preparing the application to North Central and the item will be carried forward.

7. Expedition of Group Committee Business (refer to October 15, 1968, Executive Committee Minutes, pages 1 and 2)

The group committees have been exploring ways in which some of the detailed work involved with student programs, course approvals, and Graduate Faculty nominations might be delegated. Dean Crawford pointed out that in some areas the Directors of Graduate Studies could handle some items directly with the Graduate School. The Physical Sciences Group Committee is considering some specific suggestions in this direction. Other areas involved in new program development and organization may not find any major change in procedures feasible at this time.

The Agriculture and Biological Sciences and the Education Group Committees feel that the review of all matters is an essential part of the whole committee process, which they wish to retain for the time being.

Substitutions on examining committees are a continual problem. Students are urged to file programs and thesis titles early enough to permit group committee and Graduate School action and to meet certain deadlines; yet the time lapse between the examining committee assignments and the

examinations is enough to necessitate many substitutions, with some requested just before the examination is to be taken. There might be merit in a kind of "notice of intent" filed by the Ph.D. student a quarter before he plans to take the preliminary or final oral examination. Graduate School personnel would then send the program and/or thesis title to the appropriate group committee for examining committee designation. If for some reason the student could not take the examination, the intention notice would not be binding; however should the student ask to schedule an examination without having filed the intent, a petition plus a small penalty fee of, say, \$5 would be required.

The students could be notified of the regulation at the time the programs and thesis titles are approved. Dean Crawford asked the Committee to think about this idea or any other means by which the substitution situation can be remedied.

Professor Warner said that if the committees have current Graduate Faculty lists, including information about faculty on leave, the original assignments would require fewer substitutions.

8. Proposed M.S. & Ph.D. (and minor for the Ph.D.) with a Major in Animal Physiology ✓

The graduate program in Veterinary Physiology and Pharmacology is the only program in the area of animal physiology available, and has drawn its students from various veterinary colleges here and abroad. Most of these students come with a Doctor of Veterinary Medicine degree, or its equivalent. For a number of years, faculty and students in several areas on the St. Paul Campus have been conducting research which is physiological in nature and "it is felt that it would be in the best interests of all concerned if formal recognition be given to their mutual and overlapping interests by the formation of a program in Animal Physiology which would replace the presently labelled Veterinary Physiology and Pharmacology." The expanded program would meet students' specific needs in the area of animal physiology. The proposed program would also be structured to include participation by the College of Biological Sciences and the Medical School which would promote an effective interaction and exchange of ideas between these colleges and the Colleges of Veterinary Medicine and Agriculture. Students with a physiology objective would be expected to enter into the new program; the Veterinary Physiology and Pharmacology designation would be retained for students whose main interest is in Veterinary Pharmacology. The proposal which includes the core curriculum, sample programs, faculty resources, rationale and other information is before the Agriculture, Biological Sciences, and Medical Sciences Group Committees for review.

9. Proposed Certificate of Specialist in Education (Distributive Education) ✓

The general objectives for the program include: (1) to prepare individuals for leadership positions in distributive education, and (2) to help meet the manpower demands of Minnesota and the Upper Midwest for trained practitioners in distributive education above the teacher coordination level.<sup>1</sup>

<sup>1</sup> From the proposal.

The proposal was approved by the full curriculum committee and the College of Education before submission to the Graduate School. The Education Group Committee has reviewed it and recommends approval. Professor Merwin pointed out that it does not deviate from the basic requirements for Specialist Certificates already established in other areas of education.

The Executive Committee approved the establishment of the Certificate of Specialist in Education in the field of Distributive Education. A copy of the proposal is filed with the permanent file of these minutes.

10. Proposed Graduate Program in Chronobiology

Students working in research in the area of Chronobiology (a study of rhythmic fluctuations of composition and activity in biological systems) may be trained in human medicine, in physics, or in animal physiology and biochemistry and are not interested basically in pathology, where this program is currently housed. A committee, assigned to study the place of Chronobiology in the program in the College of Biological Sciences reported the recommendation that a major in Chronobiology not be established at this time; it was suggested that Dr. Franz Halberg participate in the discussions on the proposed major in Animal Physiology, for some of the students may fit into this kind of program, should it be adopted. Meanwhile, some of the students with this special interest may work towards the Ph.D. in Biology.

Discussion was deferred until the Biological and Medical Sciences Group Committees have an opportunity to review the proposal.

11. Proposed M.S. & Ph.D. with a Major in Plant Breeding

Students whose prime interest is in the specialty of Plant Breeding are currently majoring in Agronomy and Horticultural Science. The new major would serve to identify these students, who are not basically agronomists nor plant geneticists, as plant breeders. The program would also be of interest to students and faculty outside of these fields. The program proposal has been reviewed by representatives from Agronomy and Plant Genetics, Horticultural Sciences and Genetics and they have indicated their support. The Agriculture and Biological Sciences have reviewed the proposal and recommend approval with the "proviso that it continually undergo self-analysis by the participating staff and that the program be reviewed by the appropriate graduate group committee(s) after three years trial."

The Graduate School Executive Committee approved the establishment of the M.S. and Ph.D. with a major in Plant Breeding. A copy of the proposal is filed with the permanent files of these minutes.

12. Proposed Ph.D. with a Major in Comparative Cultural Thought

Rationale and purposes of the program are cited, in part, from the proposal: "As advanced scholarship has proceeded in the social sciences, philosophy and, in some aspects of the humanities over the past half

century or so, one area where the separate disciplines have begun more and more to overlap in their continuing specialized outreach is in the analysis of cultural, historical and social thought (including ideas, symbols, and belief systems). The comparative study of the network of human meanings and "understandings," cross-culturally and cross-historically, has begun to yield generalizations which are regarded as a fertile source of scholarship in several disciplines. In each of the fields of knowledge, moreover, research concerning the social and cultural aspects of thought has been characterized by a cross-disciplinary borrowing of techniques and methods."

Faculty from some departments are interested in a program which would promote research and teaching in the history of ideas and cultural and social thought. There is evidence that some graduate students currently enrolled at the University of Minnesota would be interested in a program which would complement their departmentally oriented work.

The Language, Literature, and Art and the Education Group Committees have reviewed the proposal. Reaction by both committees was similar in that they believe that the objectives outlined in the proposal could be achieved in a broad supporting program within an existing major field. There also was some question as to future career possibilities for students with a Ph.D. degree in such a program.

Executive Committee discussion was deferred pending a review of the proposal by the Social Sciences Group Committee.

13. Theses Written in Languages Other than English

There have been instances where a thesis on studies of a certain literature or on the bibliography of a certain literature that has been written in a foreign language is considered appropriate and acceptable principally because anyone interested in the topic would be able to read this particular language.

There was some discussion by the Executive Committee last June on the extent to which the Graduate School should permit this practice. The subject was reviewed by the Language, Literature, and Art Group Committee at the October 1968 meeting and the following recommendation was given: "that theses in languages other than English continue providing only that the following conditions are met in each case: (a) when filing his thesis title, the student indicates that for academic and scholarly reasons, the thesis will be written in the foreign language and, in addition, lists the title both in that language and in an English translation; (b) when assigning the examining committee for the thesis, the Group Committee is able to find qualified readers available, including one from outside the field of the major." ✓

The Graduate School will adopt this procedure.

14. Proposed Revision in Procedures Involved in Preliminary Oral Examinations in Mathematics

✓ The Physical Sciences Group Committee reviewed the proposal and recommends that it be approved on an experimental basis for one academic year. Dean Crawford reported that he had taken interim action so that the department will have time to initiate the plans for this fall quarter. The experiment will be carried out with the conditions contained in a memorandum which represents the views of the Physical Sciences Group Committee. The Dean said, also, that many departments may be interested in such experiments with examination procedures; therefore the proposal and memorandum have been appended to these minutes.

15. Proposed M.S. Degree With a Major in Geology (Plan A & B) at Duluth

The proposal has been considered by the Physical Sciences Group Committee with an exchange of information by faculty from both campuses. An ad hoc committee, appointed by Dean Crawford and chaired by Professor W. E. Ibele, have had discussions both here and at Duluth, and filed a report.

✓ Dean Ibele commented about the report in some detail, particularly in respect to the conclusions reached. Programs have been developed at Duluth which are not identical to those in the Twin City area. Differences in interest, application, geographical location, and the like can produce a program of a different kind, but without difference in quality.

Following recommendation by the Physical Sciences Group Committee and the ad hoc committee, the Executive Committee approved the establishment of the M.S. with a major in Geology at Duluth. A copy of the report of the study and the committee's recommendations is attached.

Respectfully submitted,

Shirley McDonald  
Secretary

January 7, 1968

UNIVERSITY OF *Minnesota*

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GRADUATE SCHOOL

OCT 4 1968

OFFICE OF THE DEAN

INSTITUTE OF AGRICULTURE • DEPARTMENT OF  
AGRONOMY AND PLANT GENETICS • ST. PAUL, MINNESOTA 55101

October 2, 1968

Dean Bryce Crawford  
321 Johnston Hall  
Minneapolis Campus

Dear Dean Crawford:

Since our telephone conversation, I have visited with Caldwell and Kirkwood regarding the plant breeding proposal. I believe it has their support and it will be on the agenda for the next meeting.

The letter which accompanies this note was prepared at their request. Perhaps it will be useful to you.

I will be away from the University during October. Hopefully we will have permission to proceed with the program when I return.

Sincerely,

*Don*

D. C. Rasmuson  
Professor

DCR:dvn

Enclosure

September 30, 1968

To: Chairmen, Life Science Group Committee (Agriculture and Biological)

From: D. C. Rasmusson (Chairman, Plant Breeding Committee)

Subject: Additional background information in support of the proposal for a Plant Breeding Degree

Gentlemen:

I find that much of what we discussed on September 25 appears in the background and justification section of our proposal. Accordingly, I shall be brief.

The Agricultural Group Committee recommended in 1966 that the plant breeding faculties in the Agronomy and Plant Genetics and Horticultural Science Departments consider the possibility of a joint degree program in plant breeding. This was done and the proposed program has 100% support from the faculty concerned with plant breeding in the two departments (see the list of proposed faculty that accompanies this communique).

The proposal has the support of the Department Heads in Agronomy and Plant Genetics and Horticultural Science and the Administration in the Institute of Agriculture. Likewise, it has the support of the Director of Graduate Study in Genetics.

Students who would participate in a plant breeding program are now majoring in Agronomy and Horticultural Science. A plant breeding program would have the effect of bringing faculty and students with common interests together in one degree program.

At present some students who wish to minor in plant breeding are unhappy with the alternatives that are available to them. Accordingly, approval of a plant breeding program will be welcomed by students and faculty in a number of departments outside of Agronomy and Horticultural Science.

The proposal was prepared by a committee appointed by Dean Crawford, which consisted of three members from Agronomy and two from Horticultural Science. The appointments were made following a number of meetings involving interested faculty, then Chairmen Stowe and Warner of the Life Sciences Committee, and Associate Dean Gieske of the Graduate School.

Enclosed are several copies of our proposal, including a listing of potential faculty and copies of recent correspondence with Dean Crawford.

Sincerely yours,

D. C. Rasmusson  
Chairman, Plant Breeding Committee

DCR:dvn

## Proposal for Graduate Degree in Plant Breeding

We recommend that a graduate program in Plant Breeding be established in the Graduate School. The program would provide Plan A and B Master's and Ph.D. degree programs in plant breeding.

### Background and justification

We believe that the graduate education of students in plant breeding would be improved and made more attractive if a degree program in plant breeding were available. The combined efforts of a faculty in plant breeding from a number of departments within the University would be most helpful in accomplishing these objectives. Also, we believe that the plant breeding faculty itself would benefit directly from the interaction that would result from this joint effort. The program would be administered by a graduate faculty that would consist largely of plant breeders and geneticists of the Departments of Agronomy and Plant Genetics and Horticultural Science. However, the program would be available to faculty in other units of the University whose research and teaching interests identify them as suitable for participation.

Plant breeding represents a distinct and increasingly important area in plant science. The recent significant contributions that have been made by plant breeders around the world in increasing food supplies attests to this. The need for a graduate program in plant breeding is emphasized by the large demand for students with training in plant breeding. There is a demand for individuals with a broad training as well as individuals that are highly specialized.

In January 1966 a proposal for a Plant Breeding degree was submitted to the Graduate School by the plant breeders in the Department of Agronomy

and Plant Genetics. The proposal was set aside and instructions were transmitted to plant breeders in the Departments of Agronomy and Plant Genetics and Horticultural Science to explore the possibilities of a joint degree in plant breeding. In response to the original proposal, the plant breeding faculty in Agronomy and Plant Genetics was given permission to offer an "Agronomy" degree on an interim basis for plant breeding students.

Graduate programs now available for plant breeding students are not satisfactory. The "Agronomy" degree that is being used, on an interim basis, by students interested in plant breeding in Agronomy and Plant Genetics is unsatisfactory to potential and resident graduate students. Most of them are not agronomists and do not wish to be thought of as agronomists, and therefore they find the name unacceptable. Plant breeding students in Horticultural Science have been hindered because of the relatively small number of faculty involved in plant breeding. With the need for increased specialization, a larger faculty is required to provide more research opportunities and counsel.

Plant breeding students have the opportunity to take a degree in Genetics. This program is supported by faculty concerned with plant breeding and is advantageous for some students. However, for many plant breeding students, both major and minor, the degree program in Genetics has not been satisfactory because the focus on genetics per se tends to relegate plant breeding to a secondary role. The Genetics program is intended for students with a primary interest in genetics and not for students with primary emphasis in plant breeding. The Plant Breeding degree would differ substantially in orientation from the Genetics degree, although a number of courses would be in common. The primary emphasis would be on plant breeding, thus enabling the student

to more completely meet the demands that will be made of him upon graduation. Successful plant breeders utilize information from related disciplines such as Genetics, Statistics, Plant Physiology and Plant Pathology. Students in Plant Breeding will take strong course programs in related areas and the written and oral graduate examinations will be administered in a manner to assure that each successful candidate can bring knowledge from these areas to bear on plant breeding problems.

Courses appropriate for a major

The courses listed in Group A would be considered as core courses for students in plant breeding. These courses would serve as prerequisites for many of the courses in Group B and would be suitable for major as well as minor programs. The courses in Group B would likely represent an important part of most major programs.

Group A: Agronomy 132, 233, 234, 242, 252  
Biometrics 100, 101, 181  
Genetics 140, 141, 142  
Horticulture 222

Group B: Agronomy 244, 245, 253, 255, 263  
Genetics 162 (262), 171, 246  
Horticulture 160, 221, 223, 251

Students in plant breeding would undoubtedly take many courses, as a part of the major, that are not included in Group A or B. Selection of these would depend in part on the student's interests. Appropriate courses might come from botany, plant physiology, plant pathology or statistics.

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Sample Program A (Ph.D.)

Courses in major (Plant Breeding)

Genetics	140	Intermediate Genetics I	3 cr.
"	141	Intermediate Genetics II	3 cr.
"	142	Intermediate Genetics III	3 cr.
"	162	Pop. & Quant. Gen.	3 cr.
"	171	Genetics and Speciation	3 cr.
Biom.	100	Statistical Analysis I	4 cr.
"	101	Statistical Analysis II	4 cr.
"	181	Experimental Design	3 cr.
Agron.	233	Prin. of Plant Breeding I	3 cr.
"	234	Prin. of Plant Breeding II	3 cr.
"	242	Seminar: Plant Breeding	2 cr.
"	245	Current Topics in Pl. Breeding	2 cr.
"	252	Cytogenetics	4 cr.
"	263	Appl. of Quant. Gen. to Pl. Breed.	3 cr.
Pl.Path.	120	Intro. Pl. Path. for Ad. Students	3 cr.

Courses in minor (Plant Physiology)

Pl. Phys.	182	Plant Physiology	3 cr.
"	183	Plant Physiology	3 cr.
"	184	Plant Physiology	3 cr.
"	186	Measure. of Pl.-Environ. Inter.	3 cr.
Hort.Sci.	187	Methods of Plant Analysis	3 cr.
Biochem.	151	Intro. to Biochemistry	4 cr.
"	152	Intro. to Biochemistry	4 cr.

Sample Program B (Ph.D.)

## Courses in major (Plant Breeding)

Botany	118	General Cytology	5 cr.
Genetics	140	Intermediate Genetics I	3 cr.
"	141	Intermediate Genetics II	3 cr.
"	142	Intermediate Genetics III	3 cr.
"	162	Pop. & Quant. Genetics	3 cr.
Biom.	181	Experimental Design	3 cr.
Agron.	233	Prin. of Plant Breeding I	3 cr.
"	234	Prin. of Plant Breeding II	3 cr.
"	242	Seminar: Plant Breeding	2 cr.
"	252	Cytogenetics	4 cr.
Hort.Sci.	160	Plant Breeding Techniques	3 cr.
"	221	Breed. of Sexually Propagated Horticultural Crops	3 cr.
"	222	Breed. Asexually Prop. Crops	3 cr.
"	223	Evolution of Crop Plants	3 cr.
"	242	Hort. Seminar	1 cr.

## Courses in minor (Plant Pathology)

Pl. Path.	105	Mycology	3 cr.
"	112	Plant Pathology	3 cr.
"	113	Plant Pathology	3 cr.
"	117	Virus Diseases of Plants	3 cr.
"	215	Gen. of Plant Pathogens	3 cr.
"	216	Phys. of Host-Parasite Relation.	3 cr.
"	217	Ecology of Plant Pathogens	3 cr.
"	213	Seminar	1 cr.

UNIVERSITY OF *Minnesota*

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GRADUATE SCHOOL

OCT 18 1968

OFFICE OF THE DEAN

INSTITUTE OF TECHNOLOGY  
SCHOOL OF MATHEMATICS • MINNEAPOLIS, MINNESOTA 55455

October 18, 1968

*What think you?*  
*me*

*SM'D ✓*

*Put this on the Ex Comm agenda.*

Dean Bryce L. Crawford  
The Graduate School  
321 Johnston Hall

Dear Bryce,

The full members of the graduate mathematics faculty voted to ask for permission to implement the plan contained in the enclosed report, with the provision that for the present students may elect, with the approval of the advisor, to take their oral examination under the present system, and that we meet in about a year to discuss the effects of the new system.

We further decided to make it clear to the students that this examination is neither necessary nor sufficient for obtaining a thesis topic, although a professor may, if he chooses, make successful passage a prerequisite for accepting a student.

I am looking forward to discussing some of these problems with you next week. I hope that you will arrange a meeting and let me know when you have the time.

Sincerely yours,

*Hans Weinberger /sw*

Hans Weinberger

HW:sw  
Encs.

The committee on Ph.D. oral preliminary examinations for mathematics majors consisting of Professors Gaal, Kahn, Nitsche, Pohl, Reich (chairman), and Sagle met on Tuesday, October 1, and arrived at a number of recommendations for revising the procedure involved in the Prelims. This report of the committee's conclusions has been prepared by J. Nitsche and E. Reich.

The basic reasons that have been advanced for considering a possible revision of the way the Prelims should be administered, at this time, are as follows:

1. Many faculty members feel that the present Prelim committee system causes an undesirable unevenness in standards due to a) unavoidable variations in minimal standards for a given field among the different committees, and b) an unconscious overemphasis of the role of the advisor in influencing the outcome of the examination.
2. It is felt that students have been given inadequate information as to just what in the way of mathematical knowledge is expected of them.
3. The revision of the written examination over the past few years now forces us to look again at the oral examination.

Furthermore, persons who have passed the Prelim are now entitled to a Candidate in Philosophy certificate. We must therefore presume that passing the Prelim should have a significance supplementing the potential ability to engage in research rather than being equivalent to it. We believe that the situation referred to in (1) can be improved immediately by changing the mechanical procedure for administering the Prelim as outlined below. In connection with points (2) and (3) it is planned to prepare material specifying, e.g. with reference to standard texts, what a student, if he is questioned in a certain area, is expected to know. About a year after publication of these guidelines they would begin to be implemented seriously by the examining committees, but until then the current practice of basing questions on courses actually taken should still be followed. We wish to stress that our committee has not concerned itself with the question of whether the areas in which a student is questioned should be enlarged, and therefore does not recommend any such step. In fact the relevant requirements as set currently [Cf. Catalog of the Graduate School 1968-70] and which we expect will continue to hold are as follows: During the Oral Prelim the student is required to demonstrate knowledge in 4 areas, namely,

- (A) the area of real and complex variable theory, two out of three of the following areas B, C, D:
- (B) algebra
- (C) geometry and/or topology
- (D) a special area of his choice equivalent to the contents of 3-quarter graduate sequence, and
- (E) a minor which may be in "internal" or in another field, and may or may not be split between two fields.

We propose the following. Beginning this quarter, one day each quarter is to be set aside as Preliminary Oral Examination Day. This quarter it is to be "study day", that is, Friday, December 6. Based on a preliminary survey of students about to take their exam a number of 2-man area committees will be set up, including e.g. an area committee for real and complex variable theory, and others depending on demand. (The make-up of the committees for area (E) will of course be decided on by the minor department, in case this is not the mathematics department; in case this plan is not convenient to them other special arrangements will have to be made.) The area committees will be located in different rooms, and will each have 30 minutes to question the student. They will have received preliminary information as to the student's background, and options. After the student leaves the room the two members of the area committee individually assign as numerical grade to the student's performance one of the integers 0, 1, 2, 3, 4 in accordance with the following interpretation:

- 0 = total lack of knowledge in this area = No understanding of even the most rudimentary principles
- 2 = barely passing
- 4 = high pass

The student, after a short rest, then proceeds to his next area committee.

The above results in 8 grades, and a questioning period of 120 minutes for each candidate.

Voting Role of the Advisor. At the time the exam is given some advisors will already have some knowledge of the candidate's ability in his proposed research area, and we propose therefore that advisors be given the option of grading the candidate accordingly. (We have in mind that the advisor will not exercise his voting option if the student is his advisee in only a technical sense.) This additional grade is to be weighted as a vote for

a specific area, that is, equivalent to the role of two individual area committee members.

The criterion for passing is that (i) an average grade of  $\geq 2$  is achieved, and (ii) in no single area has the candidate received a zero from both committee members. If the exam is failed it should be repeated in toto (except possibly in the unlikely case that it is failed because of the performance on an extradepartmental minor, in which case the decision as to what measures to take will be up to the representatives from the minor.)

After the conclusion of the examination the examiners will meet as a group and will if necessary discuss critical cases and prepare a list of the candidates that have passed.



NOV 15 1968

OFFICE OF THE DEAN

INSTITUTE OF TECHNOLOGY  
DEPARTMENT OF AERONAUTICS AND ENGINEERING MECHANICS  
MINNEAPOLIS, MINNESOTA 55455

November 12, 1968

## MEMORANDUM

TO : Bryce Crawford, Dean

FROM : W. H. Warner, for the Physical Sciences Group Committee

SUBJECT: Preliminary Oral Examination Procedures, Mathematics

The Group Committee recommends to the Executive Committee and the Dean that the procedures for preliminary oral examinations for majors in Mathematics, outlined in the attached statement from Mathematics, be tried experimentally for the academic year 1968-69 under the following restrictions:

1. The basic procedure is to be allowed at this time only for those students with an internal minor in Mathematics.
2. The Mathematics faculty is expected to evaluate the results of this scheme after this academic year, and suggest revisions or extensions to the Dean at that time.
3. The formal requirements of assigning examination committees, including substitutions on existing committees, are to be worked out by consultation between the School, the Graduate Group Committee as represented by Professor Markus and Professor Warner, and the Graduate School.
4. Students with external minors or supporting programs, for whom examiners outside the School would normally be appointed, should not be permitted to satisfy their major requirements in this way without prior approval of the non-major examiners and of the examining committee as a whole.
5. The School of Mathematics should seek to establish with the faculties of other fields the rules under which the examination procedure could be extended to students with minors or supporting programs drawn from those fields.

W. H. Warner

The committee on Ph.D. oral preliminary examinations for mathematics majors consisting of Professors Gaal, Kahn, Nitsche, Pohl, and Reich (chairman), and Sagle met on Tuesday, October 1, and arrived at a number of recommendations for revising the procedure involved in the Prelims. This report of the committee's conclusions has been prepared by J. Nitsche and E. Reich.

The basic reasons that have been advanced for considering a possible revision of the way the Prelims should be administered, at this time, are as follows:

1. Many faculty members feel that the present Prelim committee system causes an undesirable unevenness in standards due to (a) unavoidable variations in minimal standards for a given field among the different committees, and (b) an unconscious overemphasis of the role of the advisor in influencing the outcome of the examination.
2. It is felt that the students have been given inadequate information as to just what in the way of mathematical knowledge is expected of them.
3. The revision of the written examination over the past few years now forces us to look again at the oral examination.

Furthermore, persons who have passed the Prelim are now entitled to a Candidate in Philosophy certificate. We must therefore presume that passing the Prelim should have a significance supplementing the potential ability to engage in research rather than being equivalent to it. We believe that the situation referred to in (1) can be improved immediately by changing the mechanical procedure for administering the Prelim as outlined below. In connection with points (2) and (3) it is planned to prepare material specifying, e.g. with reference to standard texts, what a student, if he is questioned in a certain area, is expected to know. About a year after publication of these guidelines they would begin to be implemented seriously by the examining committees, but until then the current practice of basing questions on courses actually taken should still be followed. We wish to stress that our committee has not concerned itself with the question of whether the areas in which a student is questioned should be enlarged, and therefore does not recommend any such step. In fact the relevant requirements as set currently [cf. Catalog of the Graduate School, 1968-70] and which we expect will continue to hold are as follows: During the Oral Prelim the student is required to demonstrate knowledge in 4 areas, namely,

- A the area of real and complex variable theory, two out of three of the following areas B, C, D:
- B algebra
- C geometry and/or topology
- D a special area of his choice equivalent to the contents of 3-quarter graduate sequence, and
- E a minor which may be in "internal" or in another field, and may or may not be split between two fields.

We propose the following. Beginning this quarter, one day each quarter is to be set aside as Preliminary Oral Examination Day. This quarter it is to be "study day," that is, Friday, December 6. Based on a preliminary survey of students about to take their exam a number of 2-man area committees will be set up, including e.g. an area committee for real and complex variable theory, and others depending on demand. (The make-up of the committees for area E will of course be decided on by the minor department, in case this is not the mathematics department; in case this plan is not convenient to them other special arrangements will have to be made.) The area committees will be located in different rooms, and will each have 30 minutes to question the student. They will have received preliminary information as to the student's background, and options. After the student leaves the room the two members of the area committee individually assign as numerical grade to the student's performance one of the integers 0, 1, 2, 3, 4 in accordance with the following interpretation:

0 = total lack of knowledge in this area = No understanding  
of even the most rudimentary principles

2 = barely passing

4 = high pass

The student, after a short rest, then proceeds to his next area committee.

The above results in 8 grades, and a questioning period of 120 minutes for each candidate.

Voting Role of the Advisor. At the time the exam is given some advisors will already have some knowledge of the candidate's ability in his proposed research area, and we propose therefore that advisors be given the option of grading the candidate accordingly. (We have in mind that the advisor will not exercise his voting option if the student is his advisee in only a technical sense.) This additional grade is to be weighted as a vote for a specific area, that is, equivalent to the role of two individual area committee members.

The criterion for passing is that (i) an average grade of  $\geq 2$  is achieved, and (ii) in no single area has the candidate received a zero from both committee members. If the exam is failed it should be repeated in toto (except possibly in the unlikely case that it is failed because of the performance on an extradepartmental minor, in which case the decision as to what measures to take will be up to the representatives from the minor).

After the conclusion of the examination the examiners will meet as a group and will if necessary discuss critical cases and prepare a list of the candidates that have passed.

PROPOSAL FOR A SPECIALIST CERTIFICATE PROGRAM  
IN DISTRIBUTIVE EDUCATION

This proposal is intended to serve as a basis for establishing a certificate program titled Specialist in Distributive Education. There are a number of persons now holding Master's degrees who desire to maintain or upgrade their skills in distributive education teaching or supervisory positions. These persons have indicated they would prefer to work toward an advanced degree, but not the Doctor's degree. They intend to remain in what is commonly referred to as the "practitioner's position."

GENERAL MISSION STATEMENT FOR DISTRIBUTIVE EDUCATION

The general mission statement for distributive education is comparable to the general mission for the College of Education - teaching, research, and service. The general mission is also in agreement with the general mission for the proposed Division of Vocational, Technical and Practical Arts Education. The primary purpose for distributive teacher education is teaching, whereby persons are prepared at the undergraduate and graduate levels to become teachers, or teacher-coordinators, of distributive education subjects in high school and/or post high school institutions. Research activities of several types are sponsored, encouraged and carried out. These activities include advising Master's and Doctoral candidates, conducting independent research, and undertaking research, developmental and pilot training projects. Service activities are of major importance in that distributive teacher educators work closely with the Vocational Division of the State Department of Education. Service activities include assisting in planning conferences and workshops, serving as resource persons and consultants, making follow-up visits to first-year teachers, helping with curriculum development and evaluation, and developing instructional materials.

A major concern of the staff is the creation, development, and testing of important ideas relevant to improving distributive education and vocational education in general. This includes research and development activities related to distributive education theory, the improvement of instruction, the development and testing of curriculum materials, and the personal development of prospective teachers. It is the intent of the staff that relevant materials and innovations be shared with other vocational services, as well as other institutions that prepare distributive education teachers.

GENERAL OBJECTIVES FOR THE SPECIALIST PROGRAM  
IN DISTRIBUTIVE EDUCATION

The purpose of the Specialist in Distributive Education certificate program is two-fold: (1) to prepare individuals for leadership positions in distributive education, and (2) to help meet the manpower demands of Minnesota and the Upper Midwest for trained practitioners in distributive education above the teacher-coordinator level.

The commitment to prepare individuals for leadership positions may be fulfilled by helping distributive education teachers and teacher-coordinators in secondary and post secondary institutions to: (a) acquire a better understanding of their rapidly developing major field and its evolving relationship to other areas of vocational and general education, and its role in our socio-economic system, (b) acquire greater depth in marketing and distribution in order to do a superior job of integrating and coordinating a total program of distributive education, (c) develop a set of competencies common to supervisory and leadership positions in distributive education, and (d) build a group of competencies unique to a particular type of distributive education supervisory level position.

The commitment to help meet the manpower demands of this region may be achieved by continuous study of training and manpower needs for personnel above the teacher-coordinator level and a program of recruitment and preparation to meet the immediate and projected needs.

#### ROSTER OF FACULTY AVAILABLE FOR PROGRAM TEACHING AND ADVISING ASSIGNMENTS

Three persons currently hold professional positions in distributive education. They are Professor Warren G. Meyer, and Assistant Professors Richard D. Ashmun and Mary K. Klaurens. These persons would initially assume responsibility for teaching and advising students in the Specialist Program. As the program grows and develops, it is anticipated that a fourth staff member would be needed.

#### RELATIONSHIP TO THE CURRENT OPERATING DISTRIBUTIVE EDUCATION PROGRAM

A complete undergraduate program has been in operation for 21 years. The program has been recognized nationally as one of the most outstanding undergraduate teacher training programs. The proposed Specialist Program is the second step in offering a total graduate program in distributive education at the University of Minnesota. The first step was the approval of a major in distributive education for the Master of Arts Degree. The next logical step is to provide for students who wish to specialize in distributive education in preparation for leadership positions in high schools, junior colleges, area vocational-technical schools, colleges, or state departments of education.

#### STATEMENT OF NEED AND POPULATION TO BE SERVED

Projections made by personnel in the U.S. Office of Education indicate that an additional 5,000 distributive education teachers will be needed for the 1970-71 school year. Full-time enrollments in high school and post high school distributive education programs are expected to triple by 1970. In Minnesota, the projections for the school year 1970-71 are for an additional 100 high school teachers and 50 post high school teachers. It is anticipated that there will be a need for 40 to 50 local supervisors or directors, 20 to 30 department heads, and 5 to 10 curriculum specialists. It is safe to assume that the rate of increase in neighboring states will be similar to those of Minnesota.

The increased need for teachers and teacher-coordinators, along with many changes and innovations in distributive education since the passage of the Vocational Education Act of 1963, implies that more people with special talents will be sought to provide assistance and guidance in a leadership role in order to insure a logical and meaningful total program development. Therefore, it is the responsibility of the universities to provide the kind of training that will prepare persons for specialist positions. The following statements are indicative of the need for specialists:

1. An increasing number of positions as high school distributive education department heads or chairmen.
2. An increased need for post high school department heads in junior colleges and area vocational-technical schools.
3. More city supervisors and area supervisors attached to state departments of education.
4. An increase in demand for distributive education curriculum specialists at the state and local levels.
5. New positions as materials development specialists in materials laboratory centers.
6. New positions as program development specialists with special preparation in such as that in our state department of education.
7. An increasing need for heads of specialized programs in junior colleges and area vocational-technical schools such as super-market distribution, petroleum distribution, fashion merchandising, etc.
8. A need for persons with research skills to conduct studies of local and area needs, follow-up of graduates, new practices and procedures in distribution, etc. to meet the new requirements for periodic evaluations in recent legislation.
9. Persons with special training to develop training programs in distribution for persons with special needs and handicaps.
10. Coordinators of internship programs in junior colleges and area vocational-technical schools, an important position in out-state institutions.
11. Additional adult distributive education coordinators and field instructors.

It is anticipated that five to ten persons would initially be admitted to the specialist program. This represents a minimal number of persons now holding Master's Degrees that have expressed a desire to enroll in the program. It is assumed that this number will grow as the program matures and becomes more widely known.

At the present we know of no Specialist Certificate Program in Distributive Education in other colleges or universities. The University of Minnesota pioneered in distributive teacher education and holds a strong position of leadership in this field. Therefore, it is anticipated that we could implement a number of the findings of the funded pilot training programs of the past two summers, as well as the project to be conducted during the summer of 1968, and develop a model for similar programs in other institutions. We believe that no other institution has access to as many supporting programs such as the Industrial Relations Center, our strong vocational guidance program, the General College Business Studies unit, a large, progressive and cooperative distribution center, the Research and Coordination unit, and to other strong vocational and academic teacher education programs.

#### DUTIES PERFORMED BY SPECIALISTS IN DISTRIBUTIVE EDUCATION

It is broadly conceived that a Specialist in Distributive Education would perform duties of the following nature depending on the particular position he might hold:

##### Curriculum:

1. Design and implement new programs in distributive education.
2. Design and develop curriculum materials and direct curriculum projects.
3. Assist in selecting textbooks and other course materials.
4. Assist in designing and implementing intern programs for distributive educators and teacher-trainers.
5. Cooperate in articulating the curriculums at the several educational levels.

##### Training:

1. Plan and/or conduct in-service teacher-training programs.
2. Plan and conduct orientation programs for new staff members.
3. Teach innovative and/or demonstration classes.
4. Introduce new methods and techniques into the classroom.

##### Liaison Duties:

1. Provide liaison with business and industry.
2. Maintain liaison with the various components of school administration.
3. Provide liaison with various civic and lay groups.
4. Participate in professional meetings of administrative level personnel.
5. Work with outside agencies dealing with out-of-school occupational training.
6. Work with guidance personnel in creating and disseminating occupational and educational information.
7. Prepare brochures, bulletins, newsletters, and articles for professional journals.
8. Maintain liaison with other distributive education units of the school system - high school, area vocational-technical school, junior colleges, adult evening school.

Supervision:

1. Guide and assist distributive education teachers through classroom observations and supervisory conferences.
2. Design and use appropriate evaluative procedures.
3. Work with his counterparts in other vocational and general education fields in preparing curriculums for interdisciplinary occupational training programs.
4. Participate in planning workshops, seminars, and institutes for teachers of the several vocational fields.

Administrative Duties:

1. Participate in the recruitment and selection of new staff members.
2. Prepare departmental budgets.
3. Recommend the purchase of supplies and equipment.
4. Assist in classroom and facility planning.
5. Participate in staff salary negotiations.

TYPES OF SPECIALISTS IN DISTRIBUTIVE EDUCATION

The duties listed above could be performed by one type of distributive education specialist, or could be spread over several different types of specialists. The positions are still too new to have accurate job descriptions for each type of specialist. Several types of distributive education specialist positions evident at the high school and post high school levels are as follows:

High Schools:

1. Department chairman or head.
2. City supervisor of distributive education.
3. Curriculum consultant or specialist in distributive education.
4. Director of adult distributive education.

Junior College or Area Vocational-Technical School:

1. Department chairman.
2. Coordinator of adult education.
3. Program supervisor.
4. Curriculum consultant or specialist in distributive education.
5. Project development specialist.

Area or District Representative:

1. Area distributive education supervisor.
2. Area field instructor.

State Department of Education:

1. State supervisor.
2. Assistant supervisor for youth leadership clubs.
3. Assistant supervisor for post secondary programs.
4. Field instructor in merchandising.
5. Assistant supervisor for high school programs.
6. Program development specialist for distributive education.
7. Project development specialist.
8. Materials development specialist.

Teacher Education Institutions:

1. College marketing instructor.
2. Specialist to supervise funded projects.
3. Curriculum and materials development specialist.

PROPOSED PROGRAM

In preparation for the activities and positions stated above, the Distributive Education Specialist needs breadth as well as depth in his professional preparation. Therefore, the Specialist Program in Distributive Education shall include the following, based on the present curricular offerings:

1. Distributive Education (27 credits - minimum)

Issues, trends and developments in distributive education, programs for persons preparing for distributive occupations, youth with special needs, and adults to obtain, maintain or upgrade their employment in marketing and distribution. The candidate needs to know how to develop and implement instructional programs along with the materials and technology necessary to carry out an effective program. He also must know how to recruit and select students, followed by effective evaluation of the instruction received by these students.

2. Business Administration (6 credits - minimum)

In most cases, the candidate will have obtained considerable depth in technical business and marketing courses at the undergraduate level. However, he should build upon this background to gain greater depth, particularly if he intends to specialize in post secondary or college teaching. An understanding in depth in the technical content area is also an asset in total program planning and development in distributive education.

3. Educational Curriculum and Instruction (6 credits - minimum)

If the distributive education specialist is to work in curriculum development, he must have a thorough background in educational theory and practice. He must see distributive education as part of the total educational program, as well as part of the vocational education program. He needs courses in supervision if he is to be effective in the supervision of teachers. He also needs to utilize effective career development and occupational information practices, as well as the development and use of instructional media and materials.

4. Educational Psychology (9 credits - minimum)

The distributive education specialist should have a background in learning theory and practice, testing and evaluation procedures, and personality development. He should be effective in using appropriate counseling and interviewing techniques, and be able to work closely with guidance personnel.

5. Educational Administration (3 credits - minimum)

Basic principles of administration are necessary in order to recruit, select and orient new staff members, as well as to plan and allocate budgetary items, purchase materials, supplies and equipment. It would also be helpful to develop human relations and public relations techniques, and the ability to work closely with other administrative personnel.

6. Elective Area (12 credits - minimum)

A candidate should broaden his background in other disciplines such as the behavioral sciences and related vocational fields. Courses should be selected in relation to the candidate's graduate and undergraduate program to date in order to meet the needs of the candidate in relation to his goal so that he will obtain a balance in his total program. Courses may be selected from Economics, History and Philosophy of Education, Psychology, Sociology, Anthropology in one major grouping; or from Agricultural Education, Business Education, Home Economics Education, and Industrial Education.

7. Internship (9 credits)

The internship should provide an opportunity for the candidate to gain in-service experience in depth in a leadership role parallel to the type of specialist position in distributive education he is seeking. He should gain experience in decision-making, supervising and working with people, communications, planning and programming, materials and curriculum development, and other tasks that would be appropriate to his goal.

Students on internship will be required to attend a seminar and complete an integrating paper or project as part of the requirements for successful completion. Internship activities must be for at least one quarter in duration and must be completed during the year of residency.

Requirements for Admission

Admission requirements are recommended to be:

1. A Master's degree with emphasis in Distributive Education.
2. At least one year of teaching experience in Distributive Education, and preferably two years of teaching experience.
3. A career goal of specialization in teaching, supervision, curriculum or administration in Distributive Education.

4. A minimum of a B-average in previous graduate work.
5. Two years of acceptable occupational experience in distributive occupations, or completion of the undergraduate occupational experience requirement under supervision.

Course Work

Courses for the Specialist Degree in Distributive Education may be selected from, but not limited to, those listed below:

1. Distributive Education (27 credits - minimum)

- DE 136 Organization and Administration of Distributive Education
- DE 137A Materials and Methods in Cooperative Part-Time Classes
- DE 138 Training Store and Office Supervisors
- DE 139 Coordination Techniques
- DE 141 Cooperative Occupational Education Programs
- DE 142 Business and Distributive Programs for Adults
- DE 146 Issues and Trends in Distributive Education
- DE 147 Workshop: Teaching Display
- DE 148 Post-Secondary Business, Distributive Programs
- DE 159 Materials Laboratory, Secondary School Distributive Education
- DE 160 Materials Laboratory, Occupational Relations
- DE 187 Workshop: Distributive Education
- DE 238 Problems: Distributive Education

2. Business Administration (6 credits - minimum)

- Mktg 147 Advanced Advertising Procedures
- Mktg 207 Advertising and Sales Promotion
- Mktg 217 Market Analysis and Research
- Mktg 227 Retail Management
- Mktg 237 Sales Management
- Mktg 327 Seminar: Social and Economic Aspects of Marketing
- IR 172 Principles of Industrial Relations: Manpower Management
- IR 212B Employee Development, Training
- Mgmt 150A Fundamentals of Management
- Mgmt 250 Executive Leadership
- Psy 156 Psychology of Advertising (Jour. 156)

3. Educational Curriculum and Instruction (6 credits - minimum)

- Ed CI 105 Audio-Visual Materials in Education
- Ed CI 109 Projected Audio-Visual Materials and Equip. Laboratory
- Ed CI 113 Secondary School Curriculum
- Ed CI 114 Interdisciplinary Approaches to Curriculum
- Ed CI 124 Foundations of Career Development
- Ed CI 125 Occupational Information Laboratory
- Ed CI 135 Group Procedures in Guidance
- Ed CI 150 Supervision and Improvement of Instruction
- Ed CI 170 Programs and Procedures of Curriculum Development
- Ed CI 172 Supervision of Secondary Instruction
- Ed CI 173 Preparation of Curriculum Materials

4. Educational Psychology (9 credits - minimum)

- E Psy 110 Educational Measurement in the Classroom
- E Psy 116 Introductory Statistical Methods
- E Psy 117 Basic Principles of Measurement
- E Psy 125 Group Dynamics in Education
- E Psy 133 Introduction to Guidance
- E Psy 134 School Counseling Procedures
- E Psy 159 Personality Development and Mental Hygiene
- E Psy 194-5 Experimental Analysis of Instruction
- E Psy 196-7 Psychology of School Learning
- E Psy 216-17-18 Statistical Methods
- E Psy 297 Psychology of Knowledge Acquisition
- E Psy 298 Psychological Theories of Teaching

5. Educational Administration (3 credits - minimum)

- Ed Ad 201-02 Foundations of Educational Administration
- Ed Ad 211 School Business Management
- Ed Ad 227 Public School Personnel
- Ed Ad 230 School Community Relations
- Ed Ad 274 The Junior College

6. Elective Area (12 credits - minimum)

Courses will be selected by the student with the approval of his adviser from the curricular areas on page 8 & 9.

7. Internship (9 credits)

REQUIREMENTS FOR GRADUATION

A grade point average of B is required in the Distributive Education sequence, which is considered to be the major area of concentration. A grade point average of 2.8 is required for all courses outside the major area of concentration. A minimum of 45 credits must be taken at the University of Minnesota. The program requires the completion of 90 credits, including the Master's degree. Residency requirements and time limits for completion of the program shall be as specified in the Graduate School Bulletin for Specialist Programs in Education.

A final examination is required upon completion of the course work for the Specialist Certificate Program in Distributive Education. The examination will be written and/or oral depending on the recommendation of the major adviser in distributive education.

COURSES LISTED ACCORDING TO AREAS OF JOB RESPONSIBILITY

In the previous section courses and suggested credits were listed according to the curricular fields at the University of Minnesota. It is intended that a specialist in distributive education will attain a minimum competency in each of the areas, but would also pursue maximum competency in the area in which he intended to specialize.

In this section of the proposal an attempt is made to relate course work to areas of job responsibility, which does not parallel curriculum offerings in the same manner. It is felt that it would be more meaningful in program planning if courses could be listed according to broad competency areas. The competency areas and courses are as follows:

Curriculum and Research

- DE 141 Cooperative Occupational Education Program
- DE 146 Issues and Trends in Distributive Education
- DE 187 Workshop: Distributive Education
- DE 238 Problems: Distributive Education
- Ed CI 113 Secondary School Curriculum
- Ed CI 114 Interdisciplinary Approaches to Curriculum
- Ed CI 170 Programs and Procedures of Curriculum Development
- Ed CI 173 Preparation of Curriculum Materials
- E Psy 110 Educational Measurement in the Classroom
- E Psy 116- Introductory Statistical Methods
- E Psy 117 Basic Principles of Measurement
- E Psy 216- Statistical Methods
- 217-
- 218
- E Psy 297 Psychology of Knowledge Acquisition
- E Psy 298 Psychological Theories of Teaching
- Ind 125 Philosophy and Practice of Industrial Education
- Ind 155 Critical Issues in Industrial Education
- Ind 251 Research

Training:

- DE 137A Materials and Methods in Cooperative Part-Time Classes
- DE 138 Training Store and Office Supervisors
- DE 147 Workshop: Teaching Display
- DE 159 Materials Laboratory, Secondary School Distributive Education
- DE 160 Materials Laboratory, Occupational Relations
- Ed CI 105 Audio-Visual Materials in Education
- Ed CI 109 Projected Audio-Visual Materials and Equipment Laboratory
- E Psy 159 Personality Development and Mental Hygiene
- E Psy 194- Experimental Analysis of Instruction
- 95
- E Psy 196- Psychology of School Learning
- 97
- Ind 109 Conference Leading
- Ind 135 Industrial Course Construction
- Psy 156 Psychology of Advertising (Jour 156)

Liaison Duties:

- DE 139 Coordination Techniques
- Ed CI 124 Foundations of Career Development
- Ed CI 125 Occupational Information Laboratory
- Ed CI 135 Group Procedures in Guidance
- E Psy 125 Group Dynamics in Education
- E Psy 133 Introduction to Guidance
- E Psy 134 School Counseling Procedures
- Ed Ad 230 School Community Relations
- Ind 110 Vocational Guidance

Supervision and Administration:

DE 136 Organization and Administration of Distributive Education  
DE 142 Business and Distributive Programs for Adults  
DE 148 Post-Secondary Business, Distributive Programs  
Ed Ad 201- Foundations of Educational Administration  
02  
Ed Ad 211 School Business Management  
Ed Ad 227 Public School Personnel  
Ed Ad 274 The Junior College  
Ed CI 150 Supervision and Improvement of Instruction  
Ed CI 172 Supervision of Secondary Instruction  
Ind 115 Supervision of Industrial Education  
(New Course) Internship

Vocational Interdisciplinary:

Ag Ed 171 Procedures in Teaching Agriculture  
Ag Ed 221 Field Problems  
BE 132 Teaching the Basic Business Subjects  
BE 156 Trends in Business Education  
BE 157 Organization and Supervision of Business Education  
HEEd 160A Home Economics Curriculum  
HEEd 166 Trends  
HEEd 201 Problems: Home Economics Education

Distribution:

Mktg 147 Advanced Advertising Procedures  
Mktg 207 Advertising and Sales Promotion  
Mktg 217 Market Analysis and Research  
Mktg 227 Retail Management  
Mktg 237 Sales Management  
Mktg 327 Seminar: Social and Economic Aspects of Marketing  
IR 172 Principles of Industrial Relations: Manpower Management  
IR 212B Employee Development, Training  
Mgmt 150A Fundamentals of Management  
Mgmt 250 Executive Leadership

Behavioral Sciences:

Courses from the areas of Economics, Psychology, Sociology, and Anthropology that would be necessary to round out a person's background so that he would be more competent in all of the categories listed above. The courses would be determined by attempting to select those which would fill out the weak areas evident in previous preparation.

Office of the Dean

November 21, 1968

Memorandum to: Bryce Crawford, Jr.

From: Ad Hoc Committee for Proposed M.S. Degree in  
Geology (Duluth) and Professors Fairhurst,  
Nichol, Warner, and Ibele (Chairman)

Subject: Report on Proposed M.S. Degree in Geology at Duluth

- I This reports the determinations and recommendations arising from our study of pertinent documents and discussions with the respective faculties following our appointment and charge by your letter of October 16, 1968. Available to us were the Duluth proposal, the Physical Sciences Group Committee report signed by Professor W. Loud, a memo on the subject addressed to the Physical Sciences Group Committee by Professor Zoltai, Chairman of the Department of Geology and Geophysics (Minneapolis), and letters by Professor R. Marsden (Chairman of the Department of Geology, Duluth), and Professor W. Phinney (Chairman of Graduate Studies, Department of Geology and Geophysics, Minneapolis) which set forth the most recent views of the principals on the points at issue. In addition, the Committee met with Professor W. Phinney on Thursday, November 7, visited the Duluth Geology Department on Tuesday, November 19, to discuss the matter, and C. Fairhurst and W. Ibele consulted with Professor Zoltai on Wednesday, November 20. Our determination and recommendations then rest on these sources.
- II Before turning to the details of our findings, it should be noted that as far as we could determine the discussions that grew from the proposed M.S. degree at Duluth were at a high level, based on the mutual respect of equals. The differences which developed, and are now we believe resolved, are those expected between an established and a new program and between faculties with different interests -- differences in kind but not in quality. The growth and development of the Duluth program should see the remaining but acceptable differences diminish further. In summary then, we note that the level and tone at which discussions occurred promises a cooperation which should be mutually beneficial to both geology programs.

We cite the following points and note in each case our findings:

- A. Admission to Graduate Study: No disagreement. The attached bulletin statement prepared by the Duluth faculty is quite acceptable according to Professor Zoltai. (It should be noted here that the bulletin copy for geology and geophysics - (Minneapolis) is unique in two respects -- first, in terms of prerequisites it speaks of the prerequisites for advanced degrees not for admission to graduate study as other fields do.

Second, it speaks of these prerequisites in great detail.)

B. Requirements for the M.S. Degree: Basic Sciences

1. Physics - 1 year college physics - no disagreement.
2. Mathematics - Minneapolis: Calculus through Differential Equations (four quarters).

Duluth: 1 year Calculus or Calculus and Statistics (three quarters).

A difference of one quarter but no exception taken.

3. Chemistry - in bulletin descriptions - 1 year of college chemistry is cited as a requirement for graduate study. In the mimeographed information distributed by the departments, differences appear:

Duluth: A minimum of one quarter of appropriate advanced work in chemistry (physical chemistry, organic chemistry, inorganic chemistry, or bio-chemistry).

Minneapolis: A minimum of two quarters of physical chemistry with substitutions permitted.

A difference of four credits appears possible, but the Duluth requirement is a minimum for all fields and additional work is required in certain fields. The substitutions referred to under the Minneapolis approach would relax the two-quarter requirement. It is the judgement of the Committee that in practice a student in the same field of geology on either campus would, with high probability, have the same program. The only likely difference would be that at Minneapolis he would arrive at this state by petition. The sample programs submitted by the Duluth faculty (attached) would appear to confirm this judgment.

III Conclusions:

- A. Bulletin description and mimeographed material distributed to prospective graduate students: The two faculties concur on the importance of both bulletin copy and detailed mimeographed material being quite clear on two points:
  1. That the two geology programs are scientifically based, resting on undergraduate study in physics, chemistry, and mathematics.

2. That such written material not convey an impression that the M.S. degree was easier -- either in time or intellectual effort -- at either location. The samples of bulletin material on pre-requisites for graduate study, mimeographed notes for prospective graduate students, and sample programs and the similar extant material for the Minneapolis program indicates that the desired situation obtains.
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- B. The geology faculty and the supporting basic science departments at Duluth should be encouraged to expand their offerings so the undergraduate program in geology, at least for those planning graduate study, can be adjusted to include the necessary work in mathematics and physical chemistry. In the event that the revision of the physical chemistry offerings evolve to the 107-108 pattern followed on the Minneapolis campus, the staffing of the second course by a geology department staff member should be only a very temporary measure since the continuation of this practice is a diversion of effort.
  - C. To provide a formal basis for continued interaction between the graduate faculties, we believe it appropriate that the examining committees for students in geology at the two campus should at regular intervals have representatives from both campuses.
  - D. With agreement on curriculum plans and graduate faculty credentials, the question of facilities remains. The existing space and equipment are adequate to begin the program but future needs in both areas will develop and should be anticipated. While library materials may be obtained from the Minneapolis campus, there is a need for certain permanent holdings for the Duluth campus and resources for this purpose should be identified.
  - E. With the above recommendations -- the Committee recommends approval of the M.S. in geology at the Duluth campus.

WEI:jj

U.M.D. BULLETIN STATEMENT

Applicants for study toward the Master's Degree in Geology shall have completed an undergraduate major in a science field or engineering including one year each of college chemistry, mathematics and physics. The candidate's graduate program, including the specific requirements in the basic sciences, will be arranged to meet the student's needs in his area of specialization. Details concerning prerequisites for the Geology M.S. degree can be obtained from the Director of Graduate Study in Geology, University of Minnesota, Duluth.

MASTER OF SCIENCE IN GEOLOGY  
at the  
UNIVERSITY OF MINNESOTA, DULUTH

Upon entrance to graduate school, each student will, together with his faculty committee, develop a plan for his academic program, designed to meet the needs of his proposed area of specialization. At the beginning of his first term, each student will take an examination designed to test his knowledge of basic principles in the geological sciences. The results of this exam will also be used in helping to formulate his program.

Candidacy Requirements

To be considered for candidacy for the M.S. degree, the student will have completed at least one year of calculus (or two quarters of calculus plus one quarter of statistics for those specializing in paleontology or stratigraphy), and one year of college chemistry plus at least one quarter of physical chemistry (organic chemistry may be substituted by those specializing in paleontology or stratigraphy). Courses in statistics and in computer programming are strongly recommended for all candidates, and students specializing in petrology, mineralogy, or geochemistry will be required to take two quarters of physical chemistry.

Minors

Candidates specializing in paleontology will normally minor in biological sciences or chemistry; those whose special field is petrology, mineralogy, or geochemistry will normally minor in chemistry. Minors for students in other fields will be determined on an individual basis.