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Princeton University Faculty

[Private Document.] (c. 1731)

(at Seminars in the new library)



Library
1898

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PRINCETON, N. J., October 17, 1898.

To the Faculty of Princeton University:

Your Committee appointed September 28th to prepare for the consideration of the Faculty regulations for the organization and conduct of the proposed Seminaries in the new Library, respectfully reports as follows:

A Committee appointed by the Board of Trustees, consisting of the President, Mr. Pyne, and the Librarian, has advised the Faculty through a letter from the Librarian that there are thirteen rooms in the new Library now available for strictly seminary purposes, and that these rooms are offered for the use of departments prepared to carry on seminary work and not possessing special facilities in the form of laboratories, museums, observatories, or other similar appliances. A provisional allocation of the rooms has accordingly been made, as follows: Of the five seminary rooms in the southeastern corner, one room on the first floor is set apart for Philosophy, and another for Jurisprudence and Political Science. The two rooms on the second floor are set apart for History, and the one room on the third floor for Economics

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and Sociology. Of the five rooms in the southwestern corner, one on the first floor is for the Germanic Languages and the other first floor room for the Romance Languages. The two rooms on the second floor are set apart, one for Latin and one for Greek, and the third floor room is for General Philology. In the northwestern corner three rooms are available; one on the first floor being allotted to English, one on the second floor to Mathematics, and one on the third floor to the mathematical side of Science. All these allotments are tentative, and are open to such modification as the Faculty may judge necessary. The fact that these rooms are now available makes it important for the Faculty to adopt some policy in regard to the organization and conduct of Seminaries, in order that confusion may be avoided and the best attainable results be realized. Two questions are therefore involved in this matter. The first is, On what plan should the Seminaries be organized and regulated? The second is, What resources are available for executing such a plan?

Your Committee assumes that the principal end to be aimed at is the development among our higher students of independent scholarly ability by extensive advanced study and training in the methods of original research, and that unless this end can be realized, Seminaries are not fulfilling the object for which they are established. Of course, at this present time, we have few students in any department sufficiently qual-

ified for such work, which is properly of a graduate character. Because of this limitation, it is not practicable, in the judgment of your Committee, to reserve the use of the seminary rooms solely for the strictly seminary work. If successful Seminaries are to be developed in Princeton University, we shall need to begin in a small way and develop them gradually, using all possible legitimate helps in the way of preparing our best students to enter the Seminaries. Accordingly, we recommend that the rooms be used for the present for two purposes.

First, for the strictly seminary work, to which properly qualified individual graduate students and seniors may be admitted. Unless a Department has graduate students, it does not seem to your Committee that any Seminary should be established in that Department, because without graduate students it will be almost impossible to set or maintain proper seminary standards. But given some graduate students, a few seniors may be safely associated with them without disadvantage. These graduates and seniors who constitute the Seminary should be allowed individual private access, at all times when the Library is open, to the particular seminary room belonging to the Department of their studies.

Second, for small advanced elective classes of graduates or of seniors pursuing courses of study which are best prosecuted in the Library. Their exercises should not be considered or styled seminary

work ; but such classes would naturally be composed of the best material, and from them valuable members of the seminary might be selected.

To open the seminary rooms more freely than is here suggested seems to your Committee unwise. Probably no one would advocate the admission of underclassmen. Even the admission of classes of juniors and seniors, would probably impair the quality of the work that ought to be done and reduce the value of the privileges of the seminary rooms in the eyes of our higher students. If, however, after the experiment is tried on the basis here proposed it becomes clear to the Faculty that classes of juniors should be admitted, it will be easy to make the change ; but if juniors are admitted from the start and the experiment works unsatisfactorily, it will be difficult to deprive them of the privileges of the rooms.

Having considered the question as to what individual students should be eligible to membership in the Seminaries, and also what small advanced elective classes might be allowed for the present to hold their regular class exercises in seminary rooms, we pass to the question of the organization and conduct of the Seminaries. We recommend, first of all, that the Department be made the unit of organization, and suggest that the following be recognized for the present as single Departments so far as relates to the seminary work in the new Library :

1. Philosophy.
2. History.
3. Jurisprudence and Politics.
4. Economics and Sociology.
5. Mathematics.
6. Classics.
7. Romance Languages.
8. Germanic Languages.
9. English.

In view of this classification of Departments, we recommend that the allocation of rooms be so modified as not to include an assignment either to General Philology or to the mathematical side of Science, and that the two rooms assigned to these subjects be reserved for subsequent assignment by the Faculty.

We further recommend that the entire seminary work of each Department be under the control of the Department, and immediately under the care of a Director chosen to represent the Department. Every Director should be a full professor. He should serve for a term of one academic year, but should be eligible to reappointment. Each Department should nominate the Director of its seminary work. In order to do this, the Department should hold a conference, at which every professor and assistant professor in the Department should be entitled to vote on the nomination of the Director; but such nomination by the Department should not be sufficient of itself to constitute appointment. It should not

amount to appointment unless confirmed by a vote of the University Faculty.

Of course, the Director ought not to have any exclusive control of the seminary work of his Department. The seminary work should be under the control of the Department, and all members of the Department prepared to conduct such work should have equal voice and opportunity with the Director, who should serve simply as the executive officer of the Department. Consequently all matters of policy should be first settled by departmental conference and then carried out by the Director.

Subject always to these limitations, he should be the responsible head of the seminary work during his term of office, being individually accountable to the Library for the seminary room and its contents, and to the University Faculty for the conduct of the seminary work. More particularly, it should be his indispensable duty to conduct personally some important portion of the seminary work; to see that arrangements are made for the participation of other qualified members of the Department; to suggest measures of coördinating work; to issue all orders for the purchase of books, journals and other supplies for the seminary library; to secure the use of the room to duly authorized classes at the hours of their exercises, and at the close of his term of office to present to the University Faculty a written report describing in detail the work done during the year.

The question of the proper library equipment for seminary work has also been considered by your Committee. If the possession of a well-furnished special seminary library is made a condition prerequisite to the organization of any Seminary, no Seminary can be started at present, for no Department now possesses such equipment. But we do deem it indispensable that no seminary be organized and installed in the Library without enough books and journals to make a hopeful beginning. If Seminaries are organized miscellaneously, with only such meagre appliances as we now have, and are started without further provision in the rooms of the new Library, it is impossible for effective Seminary work to be done. The principal result will be the creation of an erroneous impression that Princeton University possesses seminaries well enough equipped not to be in pressing need of further endowment. We do not, of course, advocate delaying the institution of Seminaries until all the desired or even all the important equipment is secured: but we do urge that no Seminary be established in any Department which cannot at least make a genuine and hopeful beginning in the strictly seminary work, and that they be established gradually as one Department after another is found to be prepared to this extent.

The student members attending any one seminary course will naturally need to be carefully limited to the maximum number that can receive full individual

benefit in their work. The size of the rooms and the length of the academic year have also to be considered. In the opinion of your Committee, not more than eight or perhaps ten students can be accommodated with advantage in the seminary course of any one instructor; but in order to place as little restriction as possible, it is recommended that the maximum number of students allowed in the seminary course of any one instructor be twelve. In the admission of student members we recommend that approved graduates be given the preference and that the remaining places be filled, so far as filled at all, by admitting seniors selected from those entitled to study for Special Honors in the Department.

These suggestions comprise all that seem to us practicable. We are not yet in position to organize Seminaries as thoroughly as it is hoped they may be organized in case of a great development of our graduate work in the proposed Graduate College. But in the meantime these suggestions may well be put in the form of a few simple rules to unify the policy of the Faculty for the present. We therefore conclude this report by submitting a list of rules for the organization and conduct of such Seminaries as may be installed in the Library.

REGULATIONS FOR THE ORGANIZATION AND CONDUCT
OF SEMINARIES HELD IN THE UNIVERSITY
LIBRARY.

I. The Department is the unit of organization, and each Department shall have control of all its seminary work.

II. The following are recognized for the present as single Departments, so far as concerns their seminary work in the Library.

1. Philosophy,
2. History,
3. Jurisprudence and Politics,
4. Economics and Sociology,
5. Mathematics,
6. Classics,
7. Romance Languages,
8. Germanic Languages,
9. English.

III. 1. A Department shall be admitted to the use of a seminary room in the Library only by vote of the University Faculty on written application of the Department.

2. In this written application any Department proposing to start seminary work in the Library shall satisfy the University Faculty that there are members of the Department prepared to give the necessary time for conducting seminary work, that the Department has graduate students, and that it possesses sufficient special library equipment to justify

it in making a start. When the Faculty is satisfied that these three conditions have been complied with, and the Department has also presented a satisfactory nomination for its first Director, the University Faculty shall authorize the establishment of the proposed seminary course or courses, and shall certify to the Librarian that the Department is to be admitted to its appropriate room in the Library.

IV. Every Director shall be a full professor, and shall be nominated to the University Faculty by a vote of the professors and assistant professors of the Department. The term of office of every Director shall be one academic year, but any Director may be reappointed.

V. Subject always to the control of the Department, every Director shall be the responsible head of the seminary work during his term of office, and shall be individually accountable to the Library for the seminary room and its contents, and to the University Faculty for the conduct of the seminary work. More particularly it shall be his indispensable duty to conduct personally some important portion of the seminary work; to see that arrangements are made for the participation of other instructors designated by the Department; to suggest means of coördinating work; to issue all orders for the purchase of books, journals and other supplies for the seminary library; to secure the use of the room to duly authorized classes at the hours of their exercises, and at the

close of his term of office to present to the University Faculty a written report describing in detail the entire work done during the year.

VI. The total number of students admitted to the seminary course of any one instructor shall not exceed twelve. In admitting student members the preference shall be given to approved graduate students, and such places as may remain may be filled by admitting Seniors selected from the list of those entitled to study for Special Honors in the Department.

VII. Small elective classes of graduates and seniors pursuing advanced studies in the Department may be admitted to use the rooms, but only at the hours of their class exercises and provided these exercises do not interfere with the seminary work.

Whether the rooms should be opened to any Department before it is able to undertake strictly seminary work is an important question. In the judgment of your Committee, it is not best to do so. In planning the new library building these rooms were expressly intended for Seminaries and not as undergraduate class rooms. But if it should seem otherwise to the Faculty, we think it essential that the work done in seminary rooms by Departments not yet prepared to organize Seminaries should not be considered or styled seminary work, but should be given some other name.

The first part of the paper is devoted to a general
 discussion of the problem. It is shown that the
 problem is equivalent to the problem of finding
 the minimum of a certain functional. This
 functional is defined as follows:

$$J(u) = \int_{\Omega} |\nabla u|^2 dx + \int_{\Omega} f(x) u dx$$

where Ω is the domain of interest, ∇ is the gradient operator, and $f(x)$ is a given function. The minimum of this functional is attained at a function u which satisfies the boundary value problem

$$\Delta u = -f(x) \text{ in } \Omega, \quad u = 0 \text{ on } \partial\Omega$$

where Δ is the Laplace operator and $\partial\Omega$ is the boundary of Ω . The existence and uniqueness of the solution of this problem is guaranteed by the theory of elliptic partial differential equations.

In the second part of the paper, we consider the
 problem of finding the minimum of the functional
 defined above. This problem can be solved by the
 method of steepest descent. The method consists
 of starting with an initial guess u_0 and
 iteratively improving it by moving in the direction
 of the negative gradient of the functional. The
 process is stopped when the change in the value
 of the functional is sufficiently small. The
 method of steepest descent is a simple and
 efficient algorithm for finding the minimum of
 a functional. It is particularly useful for
 problems where the functional is non-linear and
 the domain is complex.