Republika ng Pilipinas
(Republic of the Philippines)
KAGAWARAN NG EDUKASYON, KULTURA AT ISPORTS
(DEPARTMENT OF EDUCATION, CULTURE AND SPORTS)
Maynila

December 26, 1989

DECS O R D E R
No. 117, s. 1989

MINIMUM STANDARDS FOR DOCTOR OF PHILOSOPHY
IN AGRICULTURAL ENGINEERING PROGRAM

To: Bureau Directors
Regional Directors
Schools Superintendents
Presidents, State Colleges and Universities
Heads of Private Schools, Colleges and Universities

1. Inclosed is the set of guidelines and minimum standards for the offering of the Doctor of Philosophy in Agricultural Engineering Program which has been recommended by the Technical Panel for Agricultural Education (TPAE), Bureau of Higher Education. A series of workshops and consultative meetings with experts in the various disciplines were conducted whereby comments and recommendations were solicited. Likewise, different institutions offering graduate programs in agriculture and allied sciences were consulted to further improve these standards.

2. These guidelines and minimum standards were approved by this Office and shall take effect beginning school year 1990-1991.

3. All educational institutions which shall offer such program are required to take necessary steps to comply with the standards.

4. It is desired that the inclosed guidelines and minimum standards be given the widest publicity possible.

(SGD.) LOURDES R. QUISUMBING
Secretary

Incl.:
As stated
Reference:
N o n e
Allotment: 1-2-3-a--(M.O. 1-87)
To be indicated in the Perpetual Index
under the following subjects:

Course of Study, COLLEGIATE CURRICULUM
RESEARCH or STUDIES
RULES & REGULATIONS

GUIDING PRINCIPLES AND MINIMUM STANDARDS FOR PH. D. IN AGRICULTURAL ENGINEERING PROGRAM

I. GUIDELINES

A. Mission Orientation

An institution offering the Ph D. program in agricultural engineering should aim to produce graduates who can demonstrate academic excellence, initiate and undertake scholarly research and provide leadership in the practice of the profession. The program should inculcate in its students social consciousness and a sense of responsibility to work toward the goals of human welfare and national development.

B. Programs

1. Instruction

The minimum standards for an MS program in agricultural engineering must first be satisfied before an institution can offer a Ph.D. program in this field.

A student of the Ph.D. program in agricultural engineering should be provided with general advanced courses necessary to strengthen his general academic background, major courses to prepare his way to specialization and courses in allied fields to meet his needs in present or future employment and conducting the doctoral dissertation research.

2. Research and extension

An institution that offers a Ph.D. program in agricultural engineering should have viable research programs in its fields of specialization. Moreover, the institution is encouraged to undertake extension activities to translate significant research findings into forms that can be used by the farmers, farm managers, manufacturers and other clientele.

C. 1. Faculty

There should be a minimum number of qualified staff to teach graduate courses in the major and allied fields and to advise in dissertation research

2. Student

Admission to the Ph.D. program requires a master's degree and ability to conduct advanced studies as shown in the student's academic records.

3. Physical facilities and equipment

The existence of adequate facilities and equipment is a prerequisite to the offering of a Ph.D. program

4. Support staff

There should be a minimum number of support staff to assist in the handling of graduate courses.

D. Organization

Programs and resources of the institution should be organized in such a way that the activities in the Ph.D. program could be properly implemented.

E. Quality of output

A test of the quality of the graduates is their capability to initiate and undertake independent and scientific inquiry and their employability in the areas for which they were trained.

II. MINIMUM STANDARDS

A. Programs

1. Instruction/curriculum

a. The Ph.D. degree in agricultural engineering requires for graduation a minimum number of 36 units including 12 units for dissertation research, 15 units of courses in the major field and 9 units in the cognate field(s). The Ph.D program should be research oriented.

b. The following examinations are required:

1. A qualifying examination to assess the student's preparedness to undertake Ph.D work after completing 6 units

2. Written and oral comprehensive examinations based on the courses taken

3. A final examination based on the doctoral dissertation.

c The dissertation should be an independent scholarly work that shows the student's mastery of his field of study and substantially adds to the pool of scientific knowledge.

d. The maximum faculty-student ratio is 1:10 using the full time equivalent (FTE) for teaching as basis.

e. The budget allocation for graduate instruction should include at most, 60 percent for salaries and other personal services and at least 40 percent for maintenance and operating expenses and equipment.

2. Research and extension

Research and extension funds and facilities must be provided. After meeting the budget requirements for undergraduate and graduate instruction, the equivalent of at least 30 percent of the institution's total annual expenditures for the agricultural engineering programs should be allocated for research and extension. Of this amount, a maximum of 60 percent should be allocated for salaries and other personal services and a minimum of 40 percent for maintenance and operating expenses.

Research and extension funding may come from internal and/or external sources.

Research and extension programs are essential to meet the development needs as well as provide dynamism and relevance to the instructional program. This will ensure that the faculty members contribute to knowledge in their disciplines as well as gain community/field experience for effective teaching of their subjects.

B. Resources

1. Faculty

a. To teach graduate courses in a discipline specified for Ph.D. students only, a faculty member must have the appropriate Ph.D. degree and experience or its equivalent in that discipline obtained from a recognized or reputable institution.

b. To advise in dissertation research in the major disciplines, a faculty member must have a Ph.D degree or its equivalent in the discipline obtained from a recognized or reputable institution. In addition, he must be the senior author of at least two technical articles other than his master's thesis and doctoral dissertation published in a reputable scientific journal.

c. The following minimum number of full-time graduate faculty/ are required to teach the basic graduate courses supportive to the major discipline

1	Ph.D. in any Biological Science
1	Ph.D. in Applied Mathematics
1	Ph.D. in Statistics
1	Ph.D. in Agronomy
1	Ph.D. in Agricultural Economics
1	Ph.D. in Social Sciences
1	Ph.D. in Extension Education/Communication
1	Ph.D. in Sociology or Development Studies
1	Ph.D. in Soil Science
1	Ph.D. in Environment Science
10	

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1	Ph.D. in Soil Science
1	Ph.D. in Environment Science
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d. The following minimum number of full-time graduate faculty to teach courses and advise in dissertation research are required:

3 Ph.D. in the major field of specialization
2 Ph.D. in related areas

The major fields are:

i) Power and machinery
ii) Land and water resources
iii) Agricultural process engineering
iv) Agricultural structures and environment

e. The graduate faculty member may teach only in his area of specialization.

2. Student

a. Admission

The student must obtain a weighted average grade of at least 1.75 or its equivalent in the MS program obtained from a recognized institution.

b. Minimum enrolment

At least five students should be enrolled in the Ph.D. program to enable efficient offering of graduate courses.

3. Land

There should be a minimum area of 5 hectares of experimental land for use in the Ph.D. program in addition to the minimum requirements of BSAEn and MSAEn programs

Physical facilities and equipment

a. Building requirements

i) School buildings should comply with appropriate zoning and building regulations.

The laboratory floor space should be at least 2.3 sq. m. per student.

Classroom floor space should be at least per student

ion and walls should be 30 percent of al area of the room.

b. Minimum laboratories (with equipment and facilities) for graduate research and instruction.

The building and equipment for such facilities should be adequate for the conduct of laboratory exercises prescribed for the courses and thesis research work.

i) Farm power and machinery
1 laboratory in agricultural power
1 laboratory in agricultural machinery
1 engineering shop

ii) Soil and water
1 soil and water laboratory (hydraulics laboratory)
1 field laboratory

iii) Agricultural Processing
1 laboratory in crop processing

iv) Agricultural structures and environment
1 laboratory in agricultural structures and environment

v) Support facilities
3 micro-computer systems

c. Library

i) Library seating capacity of 10 percent of the combined total of graduate students and academic staff

ii) Minimum of three book titles (latest edition) per subject

iii) Minimum of five different technical journals and bulletins (current) per field of specialization

d. Support services

i) Health service

There should be adequate functional medical and dental clinics for students, staff and their dependents.

ii) Student services

There should be adequate student accommodation, food service, recreational facilities and counselling and graduate placement service.

e. Administrative services

Accounting, property maintenance, security and auditing services should support the instruction, research and extension activities.

C. Organization

The organization must have a built-in system for planning, implementation and evaluation of the graduate programs along with those of undergraduate instruction, research and extension. The faculty activities, budget allocation, supportive services and administration of the graduate programs in Agricultural Engineering should be distinct from those of the undergraduate programs.

D. Quality of output

The institution should provide a mechanism for monitoring the employability and evaluating the quality of its graduates based on performance and community service.