

University of Pretoria Yearbook 2019

PhD Science and Mathematics Education (02260754)

Minimum duration of study 2 years

Total credits 360

Programme information

The programme is designed for science educators at all levels who wish to pursue their postgraduate studies in science education but closely allied with a scientific discipline. Science, in this context, is interpreted in its broadest sense, and includes the physical, biological and earth sciences, as well as mathematics and technology.

At the end of this programme the student will be capable of doing independent research within the values and approaches of the sciences, and their impact and role in the broader social and economic environment with an educational focus.

For admission to the PhD in Science and Mathematics Education, the programme composition of the master's degree must have included a reasonable research component that led to a dissertation.

Applicants seeking admission in the PhD Science and Mathematics Education programme should indicate their particular field of specialization, i.e. Science Education or Mathematics Education. For Science Education, please refer to the Centre for Science, Mathematics and Technology Education. For students specialising in Mathematics Education, the contact department is the Department of Mathematics and Applied Mathematics.

Duration of studies

The doctorate is conferred on a student only if one of the following periods has expired:

- At least four years after complying with all the requirements for a three-year bachelor's degree.
- At least three years after complying with all the requirements for a four-year bachelor's degree.
- At least two years after complying with all the requirements for a bachelor's degree of five years or more.
- At least two years after complying with all the requirements for a master's degree.
- With the exception of a shorter period that may be approved by the Dean, at least 12 months since registration for the doctorate at this University has expired.

The relevant head of department may set specific residential requirements for students who are required to live on campus.

Renewal of registration

Subject to other faculty regulations, a student for a doctorate must complete his or her studies within three years after first registering for the degree. Under special circumstances, the Dean, on the recommendation of the relevant head of department or the Postgraduate Committee, may give approval for a limited fixed extension of this period.

Curriculum

The curriculum for the PhD degree consists of the following:

- i. Theoretical knowledge of the major subject/s and such additional modules as may be prescribed.
- ii. A thesis.

Conversion of a master's to doctoral study

The stipulations of G.41 apply as follows:

1. Requirements

- a. Under special circumstances, the dean of a faculty may convert the registration of a candidate for the master's degree to registration for a doctoral degree.
- b. For such conversions, the relevant head of department and the supervisor must be satisfied that the student's completed work is of the standard that would be expected of a doctoral student, that the student is capable of completing a doctoral degree, and that the project is of appropriate standard and scope to constitute a doctoral study.
- c. For such conversions, the relevant head of department and the supervisor must be satisfied that the student has demonstrated that he or she has the potential to fulfil the requirements of a doctoral degree without having completed a master's degree.

2. Process

- a. Application for conversion may be submitted at any time during the course of study for the master's degree.
- b. The application for the conversion must include the following documentation:
 - i. A detailed progress report by the candidate of the work completed for the master's project. The report must provide proof that the results obtained thus far are of such a standard and scientific significance that they justify conversion to a doctoral project. The report should include details of presentations made at conferences and of material that has been submitted for publication and/or published.
 - ii. A detailed proposal for the intended doctoral project, written by the candidate, including the objectives of the project.
 - iii. A recommendation by the supervisor with specific comments on the ability of the applicant as a potential doctoral candidate as well as the feasibility of the conversion, especially with regard to the information provided by the candidate in his/her reports (items (i) and (ii)).
 - iv. A recommendation by the relevant head of department, if he or she is not the supervisor, in which the ability of the candidate as a potential doctoral candidate is confirmed.
 - v. If the Dean considers it advisable for the faculty, the candidate may be required to present a seminar to the department in support of the application. In this case, the relevant head of department should include a report on this in his or her recommendation.
- c. The application of the candidate, together with the reports and recommendations, is submitted for consideration to the Dean, (who may delegate to the Chairperson of the Faculty Postgraduate Committee) for approval. The decision should be submitted to the Faculty Board for approval.

General

Candidates are required to familiarise themselves with the General Regulations regarding the maximum duration of study and the requirements to submit an article/s for publication.

Admission requirements

- A candidate must demonstrate expertise in education research methodology (including relevant statistical methods) and in current thinking in the field with the understanding that a candidate who does not satisfy the required level of expertise may be admitted on condition that additional agreed study assignments are completed and/or examinations passed.
- The status of a master's degree, subject to faculty regulations as well as the General Regulations.
- Admission is additionally dependent on availability of supervisor/s and/or projects within the department.

Examinations and pass requirements

- i. Consult the General Regulations that apply to the calculation of marks.
- ii. In order to obtain the PhD degree the candidate must:
 - pass the examinations and the prescribed modules, as determined in the study programme;
 - pass the thesis; and
 - pass the final examination on the thesis and general subject knowledge.

Curriculum: Year 1

Core modules

Thesis: Science education 990 (SCE 990)

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|-------------------------------|--------------------------------|
| Module credits | 360.00 |
| Prerequisites | No prerequisites. |
| Language of tuition | Module is presented in English |
| Department | Centre for Science Development |
| Period of presentation | Year |

Thesis: Mathematics Education 993 (WTW 993)

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| Module credits | 360.00 |
| Prerequisites | No prerequisites. |
| Language of tuition | Module is presented in English |
| Department | Mathematics and Applied Mathematics |
| Period of presentation | Year |

Curriculum: Final year

Core modules

Thesis: Science education 990 (SCE 990)

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|-------------------------------|--------------------------------|
| Module credits | 360.00 |
| Prerequisites | No prerequisites. |
| Language of tuition | Module is presented in English |
| Department | Centre for Science Development |
| Period of presentation | Year |

Thesis: Mathematics Education 993 (WTW 993)

| | |
|-------------------------------|-------------------------------------|
| Module credits | 360.00 |
| Prerequisites | No prerequisites. |
| Language of tuition | Module is presented in English |
| Department | Mathematics and Applied Mathematics |
| Period of presentation | Year |

The information published here is subject to change and may be amended after the publication of this information. The [General Regulations \(G Regulations\)](#) apply to all faculties of the University of Pretoria. It is expected of students to familiarise themselves well with these regulations as well as with the information contained in the [General Rules](#) section. Ignorance concerning these regulations and rules will not be accepted as an excuse for any transgression.