University of Pretoria Yearbook 2021

BEdHons Mathematics Education (09240001)

Department	Science, Mathematics and Technology Education
Minimum duration of study	1 year
Total credits	128
NQF level	08

Admission requirements

1. Relevant bachelor's degree and a relevant Teacher's Diploma (e.g. BA + HED) **or** relevant bachelor's degree and a Postgraduate Certificate in Education **or** relevant four-year bachelor's degree in Education (e.g. BEd) **or** relevant M+4 Teacher's Diploma and relevant Advanced Diploma in Education.

Additional requirements

Selection is based on:

- Meeting the minimum academic requirements required for admission;
- Previous academic performance;
- Applicable academic and/or teaching background;
- Availability of supervision for the required research project;
- Proven academic potential which may include academic communication and computer application skills;
- Additionally, an interview may be requested;
- The requirements of professional registration bodies;
- The discretion of the head of department.

Examinations and pass requirements

Subject to exceptions approved by the Dean, on the recommendation of the relevant head of department, a student may not sit for an examination for the honours degree more than twice in the same module.

A final-year student who has failed a maximum of three semester modules or their equivalent, with a final mark of at least 40% in each, may be admitted by the Dean to a special examination/s in these modules during January of the following year, provided that this will enable the student to comply with all the requirements for the degree.

Research information

A research project is compulsory and must be handed in for examination, as prescribed by the particular department.

Pass with distinction

The degree is conferred with distinction on a student who has obtained an average of at least 75%, with a minimum of 70% in each module.

Curriculum: Final year

Minimum credits: 128

When the full-time option is chosen, all "Fundamental" and "Core" modules must be selected. When the part-time option is chosen, NMQ 745, EDS 711, CDD 710 and API 711 must be selected in the 1st year and NMQ 755, MCE 730, SMP 780 and SCU 731 must be selected in the final year.

Fundamental modules

Part 1: Research proposal 755 (NMQ 755)

Module credits	16.00
NQF Level	08
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 1

Module content

Guided literature research, formulation of a conceptual framework and development of a research proposal for a supervised research project of limited scope.

Part 2: Research report 780 (SMP 780)

Module credits	16.00
NQF Level	08
Prerequisites	NMQ 755
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 2

Module content

Supervised research project of limited scope. Research proposal development; Use quantitative and/or qualitative methods. Writing a research report.

Core modules

Assessment approaches and instruments 711 (API 711)

Module credits	16.00
NQF Level	08
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education

Period of presentation	Semester 2

Module content

Foundations, principles and ethics of assessment practices. International trends. Quantitative and qualitative modes of assessment and appropriate instruments. Generating evidence for assessment. Assessment and quality assurance. Techniques of computer-based assessment.

Curriculum development 710 (CDD 710)

Module credits	16.00
NQF Level	08
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1 or Semester 2

Module content

Principles and foundations of curriculum/programme design and development. International and national models and trends in curriculum/programme development. Principles of outcomes-based programming in the SAQA context. Curriculum development models and instruments in action. Situation and task analysis needs assessment. Development. Dissemination. Implementation as a change process. Assessment and evaluation.

Philosophy and social imperatives of education 711 (EDS 711)

Module credits	16.00
NQF Level	08
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Educational Psychology
Period of presentation	Semester 1

Module content

Meta-theories in education. Empiricism; rational empiricism; critical rationalism; critical theory; phenomenology; hermeneutics; system theory; philosophies in education: traditional philosophies; indigenous (African) philosophies. The influence of modernism and postmodernism on education. Sociological imperatives for education. Theories of societal change and roles and values of education. Comparative perspectives on learning theories and their meaning for education.

Mathematics and mathematical literacy education 730 (MCE 730)

Module credits	16.00
NQF Level	08
Service modules	Faculty of Natural and Agricultural Sciences
Prerequisites	No prerequisites.

Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1 or Semester 2

Module content

Perspectives in the teaching and learning of mathematics. This module will focus on contemporary issues in mathematics education such as: Types of mathematical knowledge in teacher education; learning theories in mathematics education; use of technology in the teaching of mathematics; classroom research; gender; language; culture (Ethno mathematics). Mathematics in context: prospects and challenges. This module also focuses on the role of mathematics in different contexts (including vocational and real life contexts): Nature of mathematics – mathematics as a human activity; rationale for learning mathematics; the theory of realistic mathematics education; content-driven and context-driven approach in mathematics; mathematical literacy; knowledge 'transfer': some challenges – school mathematics vs real world.

Educational research methodology 745 (NMQ 745)

Module credits	16.00
NQF Level	08
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

The nature of educational enquiry: contexts of research, research ethics, truth, rationality, subjectivity and objectivity; Quantitative and qualitative modes of enquiry, research designs and data collection techniques. Various approaches to qualitative research including case study research, historical research, ethnographic research, and action research. Basic concepts and principles of quantitative research. Statistical techniques in the educational research process. Survey methodology and questionnaire design. Classification and graphical representation of data. Descriptive measures. Statistical inference. Data-processing procedures. Parametric versus non-parametric tests. Some test statistics (e.g. F-Test and T-test). Formulating a research methodology for a limited project.

Sciences curriculum 731 (SCU 731)

Module credits	16.00
NQF Level	08
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 2

Module content

The nature of the natural sciences, technology and mathematics: public understanding of scientific, mathematical and technological endeavours and their impact on society. Ethical implications of practices and advances in these fields. Indigenous Knowledge Systems (IKS), ethno-mathematics and technologies and ways of knowing. Implications for teaching and learning content, and anticipated outcomes. The purpose and nature of curricula to develop scientific ways of understanding the world.

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.