Universiteit van Pretoria Jaarboek 2018

MSc Tegnologie- en Tegnologiebestuur (Gedoseer) (12251079)

Minimum duur van studie	2 jaar
Totale krediete	180

Programinligting

- Tensy die Dekaan, op aanbeveling van die betrokke departementshoof, anders besluit, word die magistergraad toegeken op grond van eksamens in kursuswerk en ’n miniverhandeling (insluitend ’n eksamen oor die mini-verhandeling).
- ’n Minimum van 180 krediete word vereis vir die MSc-graadprogramme. ’n Miniverhandeling (60 krediete) en kursuswerk (120 krediete) word in die program ingesluit.
- Geen erkenning sal verleen word vir krediete wat tydens studie vir die BIngHons of die BScHons verwerf is nie.
- Die leergang word in oorleg met die betrokke departementshoof bepaal. Enige spesifieke module word aangebied op voorwaarde dat ’n sekere minimum getal studente daarvoor inskryf, soos bepaal deur die departementshoof en die Dekaan. Raadpleeg die betrokke departementshoof oor die samestelling van ’n sinvolle nagraadse studieprogram, asook oor die leerinhoud van die modules. Raadpleeg ook die betrokke departementele nagraadse brosjures.

Toelatingsvereistes

The admission requirement for the MSc is a MSC (Hon) or equivalent qualification. A selection procedure takes place prior to admission to the Masters degree. Restrictions may be placed on the number of students admitted. Postgraduate selection takes place as stipulated in the respective departmental rules. (click here)

Eksamens en slaagvereistes

Die bepalings van toepaslike Fakulteitsregulasie geld.
Riglyne oor die voorbereiding en eksaminering van miniverhandelings is by alle departemente beskikbaar.

i. Die eksamen in elke module waarvoor 'n student geregistreer is, neem plaas gedurende die gewone eksamenperiode na afsluiting van die lesings (Oktober/November of Mei/Junie).
ii. 'n Student geregistreer vir die meestersgraad moet hy of sy studies binne drie jaar voltooi, met dien verstande dat die dekaan, op aanbeveling van die hoof van die betrokke departement, 'n beperkte verlenging van hierdie periode mag goedkeur.
iii. 'n Student moet ten miste 50% behaal in die eksamen vir elke module waar geen semester- of jaarpunt toegeken word nie. 'n Module mag slegs een maal herhaal word.
iv. In modules waar semester- of jaarpunte toegeken word, moet 'n minimum punt 40% en 'n finale punt van 50% vereis.

v. Geen aanvullende of spesiale eksamens word toegeken op nagraadse vlak nie.

Navorsing

Die student moet deur middel van ’n miniverhandeling bewys lewer dat hy of sy in staat is om ’n wetenskaplike ondersoek te beplan, in te stel en uit te voer. As deel van die eksaminering moet 'n student n artikel indien en dit aanbied by die jaareindsimposium. Die artikel moet gebaseer wees op die navorsing wat die student vir die verhandeling gedoen het en moet deur die studieleier goedgekeur wees. Die toekenning van die graad is onderworpe aan nakoming van die voorwaardes van hierdie regulasie.

Slaag met lof

'n Student wat die magistergraad voltooi op grond van kursuswerk en ’n miniverhandeling, slaag met lof indien ’n geweegde gemiddelde van minstens 75% behaal word in die eerste 180 krediete wat vir die graad voltooi is, met dien verstande dat die miniverhandeling 60 van die genoemde krediete tel. Die graad word egter nie met lof toegeken indien die student enige van die modules wat deel vorm van bogenoemde krediete gedruip het nie (modules wat betyds gestaak is, uitgesluit) en ook nie indien die student minder as 70% vir die miniverhandeling behaal het nie.

Kurrikulum: Jaar 1

Minimum krediete: 120

Kernmodules

Besluitanalise 880 (IBD 880)

Modulekrediete	10.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	20 kontakure
Onderrigtaal	Module word in Engels aangebied
Departement	Ingenieurs- en Tegnologiebestuur
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

Techno-economics analysis (TEA), also referred to as economic feasibility studies, is a core technique which is used to support decision making in all for-profit organisations and sometimes more broadly in the public sector. The fundamental principle of the analysis is that only investments or projects which show a positive return on investment should be approved and implemented. Although stated simply, this principle is complex to apply since it changes according to the manner in which costs and income are accounted or measured. The simplest approaches use the generic models of net present values, discounted cash flows, internal rates of return and the time value of money to compare expenses against earnings. In this module, the student will be given an introduction to the principles of techno-economics and the structure of TEA. This introduction will be followed by material on the core calculations of TEA, including present value, future value and return. The students will be required to apply the initial TEA structure to a class project in order to acquire the basic knowledge with which such an analysis can be completed, and as a consequence, how to guide decisions relating to investment in future projects.

Tegnologiese intrapreneurskap 880 (IEE 880)

Modulekrediete	10.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	20 kontakure
Onderrigtaal	Module word in Engels aangebied
Departement	Ingenieurs- en Tegnologiebestuur
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

Technological Intrapreneurship or Corporate Entrepreneurship (CE) refers to the means by which an organisation revitalises itself and alter its competitive contour through embarking in entrepreneurial activities which focus on innovation. CE is one of the key tools to take organisations forward in an environment faced by global challenges. This module focuses on the fundamentals of CE, how to design an entrepreneurial organisation, building cultures to support technological intrapreneurship and enable continuous intrapreneurial performance within a corporation

Tegnologiekommersialisering 881 (IKG 881)

Modulekrediete	10.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	20 kontakure per semester
Onderrigtaal	Module word in Engels aangebied
Departement	Ingenieurs- en Tegnologiebestuur
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

The survival of modern companies increasingly depends on the development and successful commercialisation of new products and services. The module is designed to address the principles embedded in the process of identifying, transferring and commercialising inventions and knowledge within the context of national systems of innovation. The intention is to integrate the functional elements of innovation management with emphasis on the entrepreneurial process of commercialising new methods, practices, processes, products, services, systems and technology towards the generation of economic growth, wealth and prosperity.

Literatuurstudie 801 (ILS 801)

Modulekrediete	10.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	20 kontakure per semester
Onderrigtaal	Module word in Engels aangebied
Departement	Ingenieurs- en Tegnologiebestuur
Aanbiedingstydperk	Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

The overall objective of this module is to provide students with sufficient knowledge and skills to undertake a detailed and comprehensive literature review. This module is an integral part of the research component and will be aligned with the research proposal of the student. The major part of the module consists of individual self-study done by the student outside the classroom in his/her own time, complemented by student-centred and co-operative learning/teaching methods during lectures. The self-study includes prescribed reading and individual assignments.

Navorsingsmetodologie 800 (INI 800)

Modulekrediete	10.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	20 kontakure per semester
Onderrigtaal	Module word in Engels aangebied
Departement	Ingenieurs- en Tegnologiebestuur
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

The overall objective of this module is to provide students with sufficient knowledge and skills to undertake independent research for a masters' dissertation. The major part of the course consists of individual self-study done by the student outside the classroom in his/her own time, complemented by student-centred and co-operative learning/teaching methods during lectures. The self-study includes prescribed reading, individual assignments and preparation for the examination.The lecturer will act as a guide to the students to acquire the necessary knowledge and skills through self-study and practical exercises, in addition to formal lecturers.

Organisasie en innovasie 880 (INV 880)

Modulekrediete	10.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	20 kontakure
Onderrigtaal	Module word in Engels aangebied
Departement	Ingenieurs- en Tegnologiebestuur
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

This module has been designed for master's students wishing to build substantive and methodological knowledge in two profound and related disciplines and phenomena: organisation studies and innovation studies. It focuses on providing an overview of the main concepts, theoretical perspectives and models regarding organisation, technological innovation and the relationships between different forms of organisation and technological innovation (e.g. organising for creativity; systems supporting innovation). This module further explains innovation at several levels of analysis (individuals, teams, organisations, sectors, nations). Students are expected to apply the acquired knowledge in their workplace.

Projekbestuur 804 (IPK 804)

Modulekrediete	10.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	20 kontakure
Onderrigtaal	Module word in Engels aangebied
Departement	Ingenieurs- en Tegnologiebestuur
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

The nature of projects and project management. The project life cycle and project phases. Organisational aspects of project management. Project teams and roles. Responsibility matrixes. Processes and methodologies for planning and control: Initiating the project, Scope planning, Scope definition and the WBS, Scope verification and work authorisation. Scheduling: Stochastic PERT, CPM time-cost tradeoffs and critical chain.Resource planning and scheduling of multiple projects and scheduling of multiple projects. Cost estimating, project budgeting and project cash flow. The control process. Performance analysis: earned value and performance indices. Project closure: evaluation, reporting and termination. Project management information systems. Project closure and continuing improvement. Reasons for project successes and failures.

Wetenskap, tegnologie en innovasiebeleid 880 (ISP 880)

Modulekrediete	10.00
Voorvereistes	Geen voorvereiestes.
Kontaktyd	20 kontakure
Onderrigtaal	Module word in Engels aangebied
Departement	Ingenieurs- en Tegnologiebestuur
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

Science, Technology & Innovation (STI) Policy is considered to drive innovation and innovation is considered to be a core contributor toeconomic growth in all countries. As a result, STI policy is critical to the effective generation and utilisation of STI knowledge, whether this beundertaken for public good or private gain. In this module the student willbe given an introduction to, and the linkage between, Science and Technology, research and development, and innovation. This introduction will be followed by a brief history of innovation theory and how S&T links to both national and technological innovation systems. The range of policy instruments which can be used to stimulate science, technology andinnovation will then be reviewed, followed by the characterisation of the instruments which are presently adopted in South Africa. The student will then be presented with a range of frameworks to allow the analysis of different S&T policies and innovation systems, with particular reference to South Africa and other countries in the region.

Tegnologiebestuur 802 (ITB 802)

Modulekrediete	10.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	22 ander kontak per week, 20 lesings per week
Onderrigtaal	Module word in Engels aangebied
Departement	Ingenieurs- en Tegnologiebestuur
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

The module aims to provide students with insight into the concept of technology and the utilisation thereof in the business environment. The module provides theory and application skills on the operational level. Themes addressed are: Theory of technology, Technology forecasting and dynamics, Technology audits, Technology planning and Technology acquisition. The themes form part of the portfolio of technology management activities that organisations should be able to master in order to be competitive.

Kurrikulum: Finale jaar

Minimum krediete: 60

Kernmodules

Finansiële bestuur 831 (FBS 831)

Modulekrediete	16.00
Diensmodules	Fakulteit Ingenieurswese, Bou-omgewing en Inligtingtegnologie
Voorvereistes	Geen voorvereistes.
Kontaktyd	1 lesing per week
Onderrigtaal	Module word in Engels aangebied
Departement	Finansiële Bestuur
Aanbiedingstydperk	Semester 1

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

"The goal of a firm is to maximise the long-term wealth of its shareholders." Why do most management experts generally accept this statement? How do all the other objectives of a firm relate to this goal? Why is the success of most companies measured in financial terms? In FBS 831 answers to these questions are sought. The nature of and interaction between different financial statements are investigated, as well as their role in the creation of shareholder wealth. Although maximising shareholder wealth is the basic general cornerstone of management, recent developments point out that non-quantitative factors are also important in the measurement of company performance.

Nuwe produk ontwikkeling 780 (INP 880)

Modulekrediete	10.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	20 kontakure
Onderrigtaal	Module word in Engels aangebied
Departement	Ingenieurs- en Tegnologiebestuur
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

Hierdie inligting is slegs in Engels beskikbaar.

The development of new products is a very important activity within a firm. There is always a high risk of failure but the best companies manage to bring out successful new products on a continuous basis. The module introduces the processes, tools and techniques and strategies used by leading-edge companies for new-product development. It examines different stages of product development, from idea generation to market testing and includes the assessment and selection of appropriate business models. Fourth industrial revolution technologies are considered as well.

Miniverhandeling 898 (ISC 898)

Modulekrediete	60.00
Voorvereistes	Geen voorvereistes.
Onderrigtaal	Module word in Engels aangebied
Departement	Ingenieurs- en Tegnologiebestuur
Aanbiedingstydperk	Jaar

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

The research component is the capstone of the MTM programme. It comprises an independent research study into an area of engineering, project or technology management, applying the principles learned during the programme. Although not a full master's dissertation, it is essential to produce something original and useful, both to an academic field in the respective programmes and to the public/private sector that searches for solutions. Although this is a dissertation of limited breadth and scope, it nonetheless has to comply with the requirements of scientific research.

Strategiese tegnologie- en innovasiebestuur 880 (IST 880)

Modulekrediete	10.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	20 kontakure
Onderrigtaal	Module word in Engels aangebied
Departement	Ingenieurs- en Tegnologiebestuur
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

The objective of this module is to provide students with the necessary skills to develop technology and innovation strategies for organisations. Themes include the concepts of technology and innovation strategy, processes of strategic management, formulation of technology and innovation strategies, strategy implementation, technology roadmapping, scenario development and future thinking. Appropriate case studies are used to link the theory and practice.

Werknemersbestuur 884 (PEM 884)

Modulekrediete	16.00
Diensmodules	Fakulteit Ingenieurswese, Bou-omgewing en Inligtingtegnologie
Voorvereistes	Geen voorvereistes.
Kontaktyd	3 besprekingsklasse per week, 1 webgebaseerde periode per week, 16 lesings per week
Onderrigtaal	Module word in Engels aangebied
Departement	Menslikehulpbronbestuur
Aanbiedingstydperk	Semester 1

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

While the cliché “Our company’s most important asset is our people” is often used, the aim of the PEM 884 module is to bring life to this statement, equipping managers in the technology environment to manage people in a way that enhances both their value and humanity. The module centres around challenges in the technology environment for the 21st century, considering how organisational behaviour and human resource management processes can be used in mastering these. The module includes aspects such as managing individuals, teams and organisations with regard to various dimensions of behaviour including: individual diversity, emotional intelligence, motivation and team performance, group dynamics in managing teams, communication, leadership, power and politics, organisational culture, organisational change and stress, labour relations and human resource processes.

Die inligting wat hier verskyn, is onderhewig aan verandering en kan na die publikasie van hierdie inligting gewysig word.. Die Algemene Regulasies (G Regulasies) is op alle fakulteite van die Universiteit van Pretoria van toepassing. Dit word vereis dat elke student volkome vertroud met hierdie regulasies sowel as met die inligting vervat in die Algemene Reëls sal wees. Onkunde betrefffende hierdie regulasies en reels sal nie as ‘n verskoning by oortreding daarvan aangebied kan word nie.