Universiteit van Pretoria Jaarboek 2018

BScHons Toegepaste Wetenskap Bedryfstelsels (12243002)

Minimum duur van studie	1 jaar
Totale krediete	128

Programinligting

Die BScHons (Toegepaste Wetenskap)-graad word deur die volgende akademiese departemente toegeken:

- Bedryfs- en Sisteemingenieurswese
- Chemiese Ingenieurswese
- Materiaalkunde en Metallurgiese Ingenieurswese
- Meganiese en Lugvaartkundige Ingenieurswese
- Mynbou-ingenieurswese
- Siviele Ingenieurswese

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 leerplanne van die modules. Raadpleeg ook die betrokke departementele nagraadse brosjures.

Toelatingsvereistes

‘n Toepaslike baccalaureusgraad, ‘n BTech-graad of gelykwaardige kwalifikasie.

Ander programspesifieke inligting

Die modules CPB 410, CBI 410, en CSS 420 vorm nie deel van die nagraadse blokaanbiedings nie. Individuele reëlings moet getref word met die betrokke dosent met betrekking tot die bywoning van lesings, studiemateriaal, toetse en opdragte.

Kurrikulum: Finale jaar

Minimum krediete: 128

Kernmodules

Bedryfsanalise 780 (BAN 780)

Modulekrediete	16.00
Diensmodules	Fakulteit Natuur- en Landbouwetenskappe
Voorvereistes	Nie vir Bedryfsingenieurswese studente nie
Kontaktyd	24 kontakure per semester
Onderrigtaal	Module word in Engels aangebied
Departement	Bedryfs- en Sisteemingenieurswese
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

* Hierdie inligting is slegs in Engels beskikbaar.

- Monte Carlo Simulation
- Continuous Simulation
- System Dynamics
- Multi-objective Decision-making
- Operations Research
- Decision Analysis
- Discrete Simulation

Ondernemingsontwerp en navorsingsmetodes 781 (BBA 781)

Modulekrediete	32.00
Voorvereistes	Inligtingstelselontwerp (BID 320) of soortgelyke kursus
Kontaktyd	48 Kontakure
Onderrigtaal	Module word in Engels aangebied
Departement	Bedryfs- en Sisteemingenieurswese
Aanbiedingstydperk	Semester 1

Module-inhoud

* Hierdie inligting is slegs in Engels beskikbaar.

Enterprise Engineering can be defined as the body of knowledge, principles, and practices to design an enterprise. Due to their complexity and the continuously changing environment, enterprises need new approaches, tools and techniques to deliver innovative products and services to new markets in competitive environments. This module offers an introduction to the engineering design process applied to the enterprise as a system, and present existing approaches for designing, aligning and governing the enterprise. Within the design paradigm, the module also offers research methods (e.g. design research and action research) that are relevant for doing research within the enterprise engineering discipline.

The module covers:
•Background on systems thinking
•Systems design and systems engineering
•Prominent approaches for creating an enterprise engineering capability (e.g. Zachman, The Open Group, Dietz/Hoogervorst).
•Mechanisms and practices associated with different phases of enterprise design (e.g. enterprise modelling, languages, road maps, maturity assessment etc.)
•Research methods and techniques to validate and extend the EE knowledge base
•Case studies
•Change management

Bedryfs- en sisteemingenieurswese navorsing 780 (BCS 780)

Modulekrediete	32.00
Voorvereistes	Enige een van die volgende modules: BAR 780,BBA 781,BGH 780,BLK 781,BOZ 780,BPZ 782,BUY 780,BVK 780
Kontaktyd	48 Kontakure
Onderrigtaal	Module word in Engels aangebied
Departement	Bedryfs- en Sisteemingenieurswese
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie is 'n verpligte navorsingsmodule.

* Hierdie inligting is slegs in Engels beskikbaar.

The module affords an individual student the opportunity of studying a designated area of coherent advanced knowledge under the tutorship of a senior staff member of the Department of Industrial and Systems Engineering.Eligibility, topic and scope of the intended project must be determined in consultation with the proposed supervisor.

Gehaltebestuur 780 (BGH 780)

Modulekrediete	16.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	24 kontakure

Onderrigtaal	Module word in Engels aangebied
Departement	Bedryfs- en Sisteemingenieurswese
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

Professionally, engineers are confronted with issues related to product quality and performance or organisational excellence. The intention of this course is to provide an overview of the domain of modern quality management and to equip the student with theory, methodologies and tools and techniques to improve and achieve product quality and performance excellence.
The course covers the following topics;
• Contextualisation: The History, Guru's, Principles, Industrial setting and the Domain of Quality Management
• Practices of improving and achieving product quality: Role in Industrial Engineering, On-line and Off-line Quality Control Practices
• Frameworks of improving organisational excellence: National Quality Awards, ISO 9000 and other frameworks
• Practices of improving performance excellence: Quality and Competitive advantage, Customer and Supplier relationships, People Empowerment and Motivation, Quality Leadership and Organisational change.

Voorsieningskanaalprosesse 781 (BLK 781)

Modulekrediete	16.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	24 kontakure
Onderrigtaal	Module word in Engels aangebied
Departement	Bedryfs- en Sisteemingenieurswese
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

A key objective of supply chain management is to develop competiveness and achieve a market advantage through the implementation of cross-functional processes as the mechanism to coordinate internal and external activities.
The course aims to create an understanding of the importance of integrating key supply chain business processes and to develop the ability to analyse and implement such processes across functional and corporate silos. Standardised process definitions and practices, including strategic and operational sub-processes and key performance measurements, are considered.
Course outline:
• Customer Relationship Management Process
• Supplier Relationship Management Process
• Customer Service Management Process
• Demand Management Process
• Order fulfilment Process
• Manufacturing Flow Management (Planning and Control) Process
• Product Development and Commercialisation Process
• Returns Management Process
• Assessment of Supply Chain Management (SCM) Processes
• Implementing and Sustaining SCM Processes
• Supply Chain Mapping Approaches
• Supply Chain Performance Measurement

Vervaardigingsbeplanning en -beheersisteme 782 (BPZ 782)

Modulekrediete	32.00
Voorvereistes	Bedryfsbestuur en Bedryfsnavorsing (aanbeveel maar nie noodwendig vereis nie)
Kontaktyd	48 kontakure per semester
Onderrigtaal	Module word in Engels aangebied
Departement	Bedryfs- en Sisteemingenieurswese
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

Review of MPC, Agile Manufacturing Processes, Models of MPC.
Section 1: Review of MPC Theories and Framework
Section 2: Research Framework for Problems in Manufacturing Systems
1. Mathematical Model based Problems and their techniques
2. Estimation and Hypothesis based Problems and their techniques
Section 3: Introduction to MPC Problems and sample Models
1. Forecasting models
2. Aggregate planning models
3. Lot sizing and disaggregation models
4. Finite Scheduling models
5. Lean Manufacturing Models
6. Basic Distribution and Replenishment Models
7. Basic Supply Chain Structural Analysis and Performance Models
Section 4: Agile Panning Problems and Techniques
1. Multi-Level Master Scheduling Techniques
2. Constraint Scheduling – (TOC theory, applications and optimisation)
3. Lean Manufacturing Implementation (from Flow Lean to Process Kaizen)
4. Introduction to CONWIP ideology
5. Introduction to Demand Driven MRP

Betroubaarheidsingenieurswese 780 (BTH 780)

Modulekrediete	16.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	24 kontakure
Onderrigtaal	Module word in Engels aangebied
Departement	Bedryfs- en Sisteemingenieurswese
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

To make students conversant with the concepts, tools and techniques of reliability engineering.
Capita selecta from:
• Introduction to Reliability Engineering
• Reliability Mathematics
• Probability Plotting
• Reliability Prediction for Design
• Reliability Testing
• Reliability Growth
• Maintainability
• Reliability Management

Simulasiemodellering 780 (BUY 780)

Modulekrediete	32.00
Voorvereistes	BAN 313 of BAN 780
Kontaktyd	48 Kontakure
Onderrigtaal	Module word in Engels aangebied
Departement	Bedryfs- en Sisteemingenieurswese
Aanbiedingstydperk	Semester 1 of Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

In recent years the boundaries between different simulation paradigms such as discrete event simulation, system dynamics and agent-based models have become less distinct. Improvements in computational efficiency also allow much richer and complex models to be built. This course introduces agent-based models (ABM) as a class of computational models that deal with autonomous agents and their interactions with other agents, and their surrounding environments. Course content covers basic theoretical foundations of ABM and then focuses on a few specific application areas where ABM is used for decision-making: pedestrian and transport models; production and logistics; as well as biology.

Voorsieningskanaalontwerp 780 (BVK 780)

Modulekrediete	16.00
Voorvereistes	Geen voorvereistes.
Kontaktyd	2 lesings per week
Onderrigtaal	Module word in Engels aangebied
Departement	Bedryfs- en Sisteemingenieurswese
Aanbiedingstydperk	Semester 2

Module-inhoud

*Hierdie inligting is slegs in Engels beskikbaar.

Strategic design of supply chain networks, inventory management and supply chain integration. Framework for strategic alliances and third party logistics. Analysis and application of alternative supply chain reference models as the basis for modelling, analysis and improvement.
Course outline:
• Supply Chain Network Design
• Strategic Management of Inventory
• Supply Chain Integration
• Strategic Alliances
• Coordinated Product and Supply Chain Design
• Supply Chain Modelling (SCOR, VRM)

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.