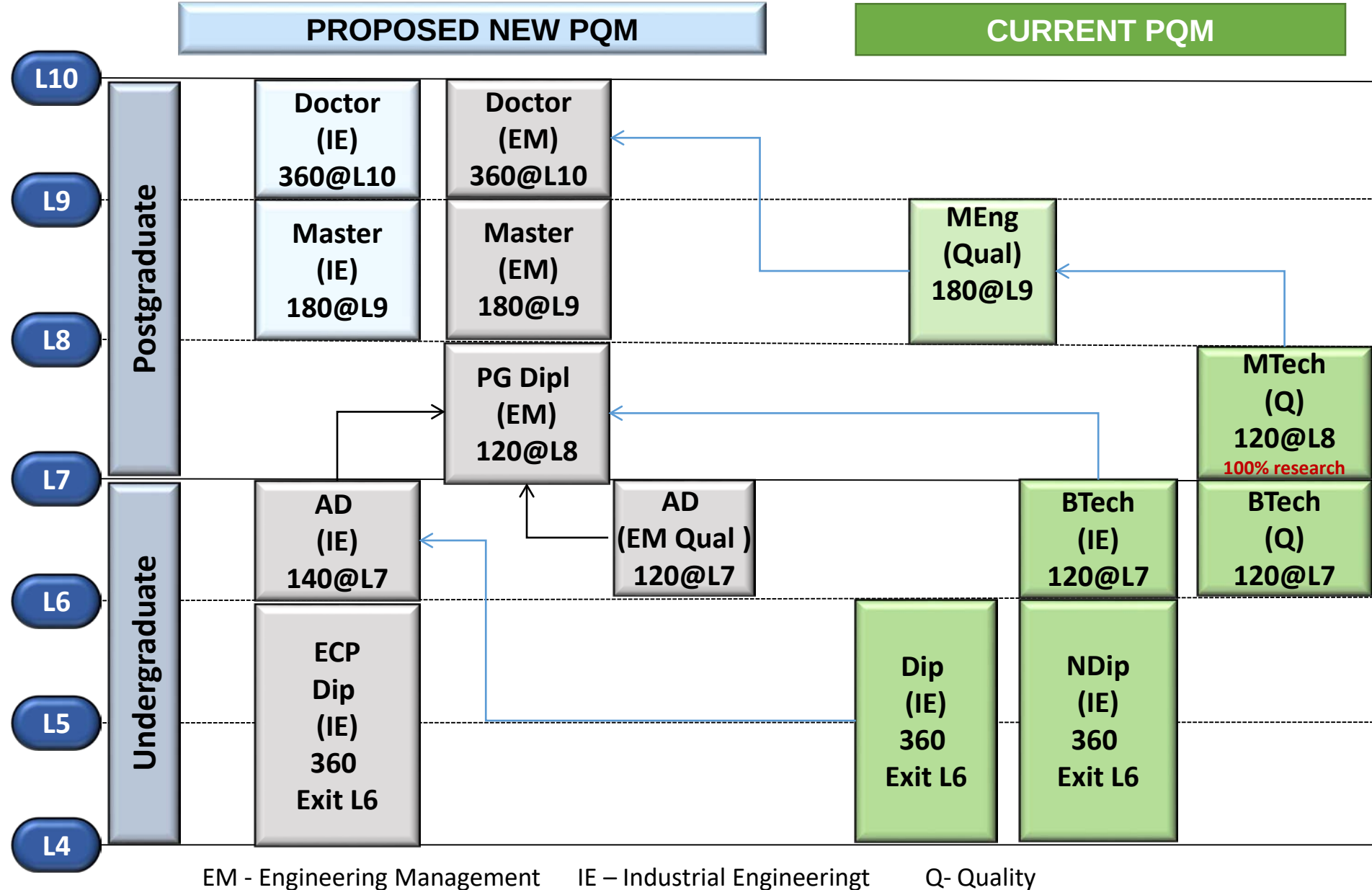


Programme Report

Master of Engineering in Engineering Management

PEESA III, DUT 24 January 2019

Department of Industrial and Systems Engineering – Proposed PQM



Design and development of MEng (Engineering Management)

Abbreviation	MEng: Engineering Management
Full Title	Master of Engineering in Engineering Management
NQF exit level	9
Credits	180
Type	Course work (105) with a project (75)
Duration	Two years – four semesters. Course work in the first 3 and project in the last year
PT/FT	Part Time – students are typically working in industry
Delivery method	Course material is provided on-line. Two, one week blocks per course per semester provided in the evenings for face to face tuition
Target market	Students are typically practicing engineers/technologists who need to take a step up into senior management
Objective	To enable engineers to master the theory and practical aspects of management within industry and business. This is so that they can competently function in context of a company-wide senior management team
Admission requirements	Appropriate BTech/BEng NQF level 8 in any recognised engineering discipline

Design and development of MEng (Engineering Management)

YEAR 1 - Compulsory modules

Technology And Innovation
Industry 4.0
Enterprise Engineering
Business For Engineers
Research Methodology

YEAR 2 - Compulsory module

Research Project and Report

Student can elect two subjects from either group 1 or group 2:

Elective group 1

Production And Operations Engineering
Large Project Engineering

Elective group 2

Appropriate subject(s) in other engineering disciplines (maximum two)

Benchmarking of qualification (Engineering Management)

In South Africa:

- Course and research based programmes offered in Gauteng
 - UJ
 - Wits
 - TUT
- Research based programmes (only) offered in Western Cape
 - Stellenbosch
 - UCT

Several comparable programmes offered internationally

Personalising the master degree programme

Flexible learning path including:

- blended learning method with e-learning (online distance learning);
- e-resources for the enhancement of teaching and learning;
- joint projects and assignments;
- scientific research activities; regular participation in seminars, conferences and forum

Recruitment of students

- Marketed to all engineering graduates in the Western Cape
- Promotion through professional bodies, eg. SAIIE
- Preferences given to women through (a) selection and (b) provision of bursaries

Industry participation

- Presentation and discussions at two advisory boards (comprised of a cross section of existing industry partners)
- Discussion with Eskom regarding inclusion in their corporate national staff development programme

Mutual recognition

- To be determined based on feasible contribution of partners

Estimate of when accreditation can be expected

Description of Activity	Timeframe	Action
Situation analysis	Completed	
DHET application	2nd quarter of 2019	DISE
Faculty management approval	2 nd quarter of 2019	FM
Faculty board approval	2 nd quarter of 2019	FB
PQM Clearance from DHET	TBA	
Programme accreditation from CHE	TBA	
SAQA - Qualification ID	TBA	

Backup

Course 1 – Technology and innovation management

This also serves as the introduction to the programme

- Introduction to engineering management
- Introduction to systems engineering
- Technology management
- Managing innovation
- Legal, including patents

Course 2 – Industry 4.0

The fourth industrial revolution is shaping the world and the basis for competition

- The fourth industrial revolution
- Overview of Industry 4.0
- Smart factory
- IoT and large data
- Simulation
- Robotics and automation

Course 3 – Enterprise engineering

Understanding the mechanics of the enterprise and how strategy influences performance

- Overview of economics on business behaviour
- Business strategy
- Risk management
- Business analysis and model development
- Enterprise engineering
- Supply chain management

Course 4 – Business for Engineers

Understanding how businesses are managed and how to analyse and model the financials of the enterprise

- Business structures
- Management, leadership and governance
- Understanding financial and management accounting
- Financial analysis and feasibility studies
- Budgeting
- Entrepreneurship
- Technical reports (assignment)

Course 5 – Methodology

How to conduct research

- Based on existing course in faculty

Course 6 – Research project and report

Suitable industry research project with formal supervision

Elective option 1 – Production and operations management

How to effectively manage production and service based operations

- Production management
- Operations research overview
- Quality management

Elective option 2 – Large project engineering

How to engineer large and complex projects

- Understanding and structuring large projects
- Multi-year, multidiscipline project management
- Feasibility structuring and transition into capex and opex accounting
- Contract management
- Risk management
- Project focused on the energy sector

Elective option 6 to 10 – Qualifying engineering courses

The student can choose one post graduate course from their original discipline that will augment their technical leadership capability in their specialised career

- It must orientate towards enhancing their engineering management skills
- Must not clash with the programme schedule