OCCUPATIONAL QUALIFICATION 2019 FACT SHEET
FIELD OF STUDY: ENGINEERING STUDIES

SCHOOL OF TECHNICAL STUDIES

PROGRAMME TITLE	SAQA ID	NQF	CREDITS
NATIONAL N DIPLOMA: ENGINEERING STUDIES (MECHANICAL)	67043	6	360

DESCRIPTION

The National N Diploma: Engineering Studies: Mechanical qualification enables you to deal with concepts of mechanics, thermodynamics, robotics, kinematics, and many others. These concepts are applied in the process of designing state-of-the-art manufacturing units for aircraft and aerospace parts and a vast assortment of industrial machinery, and form a solid foundation for furthering a career in the field of mechanical engineering.

CAREER FIELDS/FURTHER STUDIES

Successful students will have solid knowledge and skills in the mechanical field. Please enquire at the nearest Damelin Correspondence College branch for the prospectus containing information with regard to further studies.

PROGRAMME OUTLINE

N4 – Mechanical Studies

- **Engineering Science N4:** Kinematics; Angular motion; Dynamics; Statics; Hydraulics; Stress, Strain and Young's Modulus; Heat
- **Mathematics N4:** Equations, manipulation and word problems; Determinants; Complex numbers; Trigonometry; Sketch graphs; Limits and Differentiation; Integration
- **Mechanical Draughting N4:** Fundamentals of Mechanical Draughting; Screw thread, square thread and helical springs; Gears and keys; Cams; ISO limits and fits; Manufacturing and machining processes; Instruction notes; Machining and service texture symbols; Orthographic projection; Sections; Sectional drawings of single components of machine parts; Nuts, bolts and studs; Sectional drawings of assemblies; Engineering materials, Assembly drawings; Detail drawings
- **Mechanotechnics N4:** Workshop layout; Belt drives; Metal cutting machines; Corrosion; Precision measurement of machines parts; Bearings; Gear drives; Hydraulic systems

N5 - Mechanical Studies

- **Engineering Physics N5:** General Properties of Substance & Concept of heat; Concept of Light; Magnetism, Electricity & Acoustics
- **Mathematics N5:** Differentiation; Applications of differentiations; Integration techniques; Partial fractions; Areas and volumes; Centroids and centres of gravity; The second moment of area; The centre of pressure; The moment of inertia; Differential equations; Applications where differentiation and integration are combined
- **Mechanical Drawing and Design N5:** Friction and bearings; Thin shells and riveted joints; Keys, pins and splined connections; Shafts for power transmission; Belt drives; Coupling design; Knuckle joints; Cotter joints; Engine details; Welding; General information
- **Mechanotechnics N5:** Epicyclic gears and gear trains, reduction gearbox and belt drives; Bucket elevators and bucket conveyors, rope haulages and aerial ropeways; Elevators, rail and road traction, and flywheels
- Memories; I/O Devices

N6 – Mechanical Studies

- **Engineering Physics N6:** Sound; Thermodynamics; Electrostatics & Atomic Physics
- **Mathematics N6:** Differentiation; Applications of differentiations; Integration techniques; Partial fractions; Areas and volumes; Centroids and centres of gravity; The second moment of area; The centre of pressure; The moment of inertia; Differential equations; Applications where differentiation and integration are combined
- **Mechanical Drawing and Design N6:** Belt Drives; V belt selection; Pulleys and gearwheel design; Spur gears and gear drives; Bending and twisting of shafts; Plain bearings; Lubrication of plain bearings; Rolling element bearings; Friction clutches; Columns and Struts; Cams
- **Mechanotechnics N6:** Some basics; Clutches; Brakes; Line shafts; Flywheels; Reduction gearboxes; Rail traction and vehicle dynamics; Balancing; Kinematics

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ARTICULATION
This qualification articulates vertically with a Bachelors Degree in the cognate field and horizontally with a cognate Diploma or Advanced Certificate at Level 6.

TYPE OF PROGRAMME
The National N Diploma - Engineering Studies (SAQA ID 67043) is a National Qualification delivered under the auspices of the Department of Higher Education and Training.

DURATION
You should be able to complete the theoretical component (N4-N6) in 18 months. In addition, 2 years' practical experience within the industry in the Mechanical Engineering field is required.

ADMISSION REQUIREMENTS
N3 National Certificate or Grade 12 (Std. 10) with Mathematics and Physical Science.

LEARNING MATERIAL AND TEXTBOOKS
Quality learning materials designed specifically for distance study are provided to you via the college's Online Student Portal. Please access through www.dcc.edu.za.

Prescribed Textbooks *(All textbooks are subject to change)*

Item Number	Title	ISBN Number
D10056014-E1	Engineering Science N4 Textbook	9781430802839
D10055894-E1	Mathematics N4 Textbook	9781919780412
D10054559-E1	Mechanical Draughting N4 Textbook	9781868134687
D10056023-E1	Mechanotechnics N4 Textbook	9780796200044
D10055906-E1	Mathematics N5 Textbook	9781919780849
D10056032-E1	Mechanical Drawing and Design N5 Textbook	MDDN5NOTES
D10056035-E1	Mechanotechnics N5 Textbook	9781919780207
D10056026-E1	Engineering Physics N5 Textbook	9780620057578
D10056108-E1	Mechanotechnics N6 textbook	9781919780313
D10056038-E1	Engineering Physics N6 Textbook	9781875016341
D10055918-E1	Mathematics N6 Textbook	9781919780856
D10056105-E1	Mechanical Drawing and Design N6 Textbook	5822888433 – D'Lonra Books 0215913525

PRICING
Enquire at your nearest Damelin Correspondence College branch for a current programme pricelist.

ADDITIONAL COSTS
Registration/course fees do not include (where applicable) membership costs with professional bodies and/or exam costs (internal and/or external).

ASSESSMENT
The Department of Higher Education and Training (DHET) is the examining body for these courses. At the conclusion of your studies, you will have to write an external examination set by DHET. You will only be able to register to write the external examination if you pass your formative assessment component by the registration cut-off date(s) that the College will communicate to you. The College will use the formative assessment component to generate a term mark for each of your subjects. The formative assessments refer to the two control tests indicated in the table below.

If you pass your formative assessment component by the specified cut-off date(s), you can then register to write your external examinations at a FET College Exam Centre. The College will assist you to fill in the examination entry form and assign you to the relevant exam centre (venue) but accepts no responsibility therefore, and the sole responsibility in respect thereof lies with the student. You may be required to pay to

Student's Initials: .....

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write the two control tests and an examination fee at the exam centre. Please note that this test and examination fee is *not* included in your course fee. Please note that all the assignments in the study guides are for self-assessment to enable you to prepare for the upcoming control tests and examination. You do not need to submit the assignments for marking. The two tests will contribute towards your term marks on 30 to 70 ratio for test 1 and test 2 respectively. The term mark contributes a 40% towards your final mark; whereas the external examination mark contributes 60%.

It is your responsibility to check with the college or relevant exam centre that you have the correct dates for your examinations, BEFORE the registration cut off dates for the examinations. Please note that all exam centres have their *own* cut-off registration dates as per their own academic calendar and it is your responsibility to make yourself aware of and comply with those deadlines/timelines.

Please note that examination fees are not included in your tuition fee.

Subject/Module Title	Formative and Summative Assessments			
	Assignment	Test 1	Test 2	External Exam
Engineering Science N4	Self-assessment	1	1	1
Mathematics N4	Self-assessment	1	1	1
Mechanical Draughting N4	Self-assessment	1	1	1
Mechanotechnics N4	Self-assessment	1	1	1
Engineering Physics N5	Self-assessment	1	1	1
Mathematics N5	Self-assessment	1	1	1
Mechanical Drawing and Design N5	Self-assessment	1	1	1
Mechanotechnics N5	Self-assessment	1	1	1
Engineering Physics N6	Self-assessment	1	1	1
Mathematics N6	Self-assessment	1	1	1
Mechanical Drawing and Design N6	Self-assessment	1	1	1
Mechanotechnics N6	Self-assessment	1	1	1

**Please note that this subject involves a theory and practical exam.*

CERTIFICATION

Upon successful completion of your required examinations for each subject and the 2 years' practical experience within the industry in the Mechanical Engineering field, you will be awarded your National N Diploma: Engineering Studies from the Department of Higher Education and Training.

COLLEGE ACCREDITATION AND REGISTRATION

Damelin Correspondence College (Pty) Ltd is provisionally registered as a private college with the Department of Higher Education and Training under the Continuing Education and Training Act, No. 16 of 2006. Registration Certificate Number: 2008/FE07/037. Damelin Correspondence College (Pty) Ltd. is provisionally accredited by Umalusi, the Quality Council for General and Further Education and Training. Accreditation number: 18 FET02 00134 PA. Damelin Correspondence College (Pty) Ltd is further accredited by the Quality Council for Trades and Occupations (QCTO) Accreditation number: 13/0005.

Disclaimer

The information contained in this fact sheet is accurate at the time of printing. However, factors beyond Damelin Correspondence College's control (such as environmental, regulatory, or technical changes) may cause the contents of this fact sheet or of the programme to change. In the event of any such change, Damelin Correspondence College will attempt to formally notify current students. All possible measures will be taken to minimise inconvenience to students.

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STUDENT ACKNOWLEDGEMENT

I,…… , hereby acknowledge that I understand the information stated in this document and fully comprehend the specifics explained above and below pertaining to this course. I understand that the programme I am enrolling for is a/an:

☐ National Qualification

☐ Agent Programme

☐ DCC Programme **Student's Initials: ……**

The value and status of the course type is explained in the course brochure, which I have read.

Name of student: …… Signature: ……

Name of legal guardian: …… Signature: ……
(if applicable)

Name of student consultant: …… Signature: ……

Date: ……

* Please note that the original signed copy should be kept on the student's record file.