DEPARTMENTAL MISSION
To provide a quality service to learners at both undergraduate and post graduate level, through formally accredited programmes, in the field of Operations, Production and Quality Management.
The Department is committed to producing self-motivated, independent thinking and professional graduates in these fields

What is a University of Technology?
A university of technology is characterized by being research informed rather than research driven where the focus is on strategic and applied research that can be translated into professional practice. Furthermore, research output is commercialized thus providing a source of income for the institution. Learning programmes, in which the emphasis on technological capability is as important as cognitive skills, are developed around graduate profiles as defined by industry and the professions.
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</tr>
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</table>

### IMPORTANT NOTICE

The departmental rules in this handbook must be read in conjunction with the University of Technology’s General Rules contained in the current General Handbook for Students.

### NOTE TO ALL REGISTERED STUDENTS

Your registration is in accordance with all current rules of the Institution. If, for whatever reason, you do not register consecutively for every year/semester of your programme, your existing registration contract with the Institution will cease. Your re-registration anytime thereafter will be at the discretion of the Institution and, if permitted, will be in accordance with the rules applicable at that time.
I. CONTACT DETAILS

All departmental queries to:
Secretary: Mrs. K. Chellan
Tel No: 031-3735158
Fax No: 031-3735337
Location of Department: “B” Block, 1st floor,
ML Sultan Campus

All Student registration queries to:
Faculty officer: S. Reddy (Acting)
Tel No: 031-3735441
Location of Faculty office: A-Block, 1st Floor, ML Sultan Campus

Executive Dean: Prof V Rawjee (Acting)
Tel No: 031-3735130
Fax No: 031-3735333
Location of Executive Dean’s office: A-Block, 1st Floor, ML Sultan Campus
2. STAFFING

Name and Qualification

Head of Department
R. Ramlogan (M-Tech: Quality)

Senior Lecturers
Dr. R. Naidoo (DPhil Quality Management)
Prof. S. Singh (D-Tech: Quality)
Dr. M. Ramchunder (D. Com)

Lecturers
Mr. R. Moodaliyar (M-Tech: Quality)
Ms. N. Nogaya (M-Tech: Quality)
Mrs. P. Ximba (MBA)

Part Time
Dr. S. Seethal (PhD)
Mr. A. Dabechuran (MBA)
Mrs T Reddy (Masters: Water Mgt.)
Mr B Hama (MBA)
Mr D. Singh (Msc)
Mr M. Mdubeki (MBA)
Mr P Naidoo (MBA)
Mr D Singh (MSc)
PROGRAMMES OFFERED BY THE DEPARTMENT

Programmes are offered in this Department which, upon successful completion, lead to the award of the following qualifications:

Qualification
Higher Certificate in Operations Management SAQA ID.
Diploma in Management Sciences: Operations Management SAQA ID. 94830
Advanced Diploma in Management Sciences: Operations Management. SAQA ID. 111427
Advanced Diploma in Management Sciences: Quality Management SAQA ID. 111427
Master of philosophy in Quality Management SAQA ID 102021
Doctor of Philosophy in Business Quality Management SAQA ID.96819

The following programme is phased out and there will be no registration of students.
ND: Operations Management (Phase out period from 2015 to 2019 = 5 years)

The B-Tech Operations Management and the B-Tech: Quality will be phasing out in 2019. No new first year students will be registered by the department in 2020 on both these programmes. Returning and repeat students will only be registered. The Advanced Diplomas will be introduced in 2020.

PROGRAMME INFORMATION
The department offers the Higher Certificate in Operations Management on a part time basis only. The Higher Certificate is a one year NQF level 5 qualification. On completion of this qualification, the student graduates with a Higher Certificate NQF level 5, 120 credit qualification. If a student intends to study further, the student may apply for admission on to the Diploma. The Diploma is offered on a full time and part time basis. Both the Advanced Diploma programmes are offered on a part time basis.
The Master of Philosophy in Quality Management and Doctor of Philosophy in Business Quality Management are offered on a full time and part-time basis. The full-time instructional programmes are offered to students between 08:00 and 16:50 daily. For those who are employed, a part-time lecture programme is arranged between the hours of 17:00 and 19:30. Tutorial programme is available to full time and part time students. Tutorials for part time students are scheduled on Saturdays to accommodate students that work in the evenings after 19h30pm. The programme content, final examinations and diploma issued are the same for both groups.
The Diploma in Management Sciences (Operations Management) has been developed to produce competent graduates who are grounded in the fundamental theory and principles that underlie the practice and growth in this field. This 360 credit diploma is at a NQF level 6 and is aligned with the qualification description as per the HEQF. In keeping with the institution’s aims of creating, maintaining and developing its relationships with commerce,
government and industry, this diploma seeks to further strengthen the link between the institution and the world of work. The learning environment is flexible in both its mode of delivery and its methodologies, with a combination of formal face-to-face classes, technology based and independent learning contributing to the learners' experience.

**Diploma: Management Sciences (Operations Management)**

See General Rules G21B
See General Rules G7
4.1 Entrance requirements for the Higher Certificate in Operations Management are as follows:

In addition to Rule G7, applicants with a National Senior Certificate (NSC) or a Senior Certificate (SC) qualification must score a minimum of 20 points, and achieve a minimum rating/symbol for English as reflected in the Table below. Applicants with a National Certificate (Vocational) level 4 qualification must score a minimum of 50% for English or Communication.

<table>
<thead>
<tr>
<th>Compulsory Subjects</th>
<th>NSC</th>
<th>SC</th>
<th>NCV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rating</td>
<td>HG</td>
<td>SG</td>
</tr>
<tr>
<td>English home language/English first additional language/Communication</td>
<td>3</td>
<td>E</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50%</td>
</tr>
</tbody>
</table>

The total points scored by an applicant with a National Senior Certificate (NSC) will be calculated as follows:

<table>
<thead>
<tr>
<th>Rating</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>--</td>
</tr>
</tbody>
</table>

The total points scored by an applicant with a Senior Certificate (SC) will be calculated as follows:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Points: Higher Grade</th>
<th>Points: Standard Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>B</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>C</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>E</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

- In calculating the points scored by a student, Life Orientation and more than one additional language will be excluded.
4.2 Entrance requirements for the Diploma in Management Sciences (Operations) are as follows:

Applicants wishing to enrol for the Diploma: Management Science (Operations Management) at the Durban University of Technology are required to have current matric National Senior Certificate (NSC)/NQF4 equivalent qualification, with a minimum of 25 points excluding Life Orientation.

**Explanation of Points scale:**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Senior Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Higher Grade (HG)</td>
</tr>
<tr>
<td>A</td>
<td>8</td>
</tr>
<tr>
<td>B</td>
<td>7</td>
</tr>
<tr>
<td>C</td>
<td>6</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
</tr>
<tr>
<td>E</td>
<td>4</td>
</tr>
<tr>
<td>F</td>
<td>3</td>
</tr>
</tbody>
</table>

The following admission rating system will be used in selecting students:

<table>
<thead>
<tr>
<th>NSC Requirements</th>
<th>NSC Rating Code</th>
<th>Senior Certificate requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory Subjects</td>
<td></td>
<td>Applicants with 20 points or more holding a senior certificate or equivalent qualification will be considered.</td>
</tr>
<tr>
<td>English (home) OR English (1st additional)</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics OR Mathematics Literacy</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>And two (2) 20 credit subjects (not more than one language)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Or
A National Certificate (Vocational) Level 4 issued by the Council for General and Further Education and Training with a) at least 50% in three fundamental subjects, including English; and b) at least 60% in three compulsory vocational subjects

Or
An access pathway will be provided for mature students (older than 23 years with a minimum of 3 years work experience in a related field and pass the proficiency test. Learners may also be granted access to the qualification through DUT’s Recognition of Prior Learning (RPL) process.

Selection criteria for this programme.
Applicants must meet the minimum requirements mentioned in 4.1 and 4.2 above. NSC and NCV applications received via the Central Applications Office (CAO) will be scored and ranked from highest to lowest points. Based on these rankings, those learners with the highest points will be offered a firm place, the learners who have applied with their grade 11 results may be offered a conditional place subject to them meeting the requirements in 4.1 and 4.2 above.

4.2 Registration
4.2.1 All courses offered are semester and registration takes place once a year in January. Admission to first year of study is in January. See General Rules G3, G4, G5, G6, G16 and G7.
4.2.2 The last date for acceptance of late enrolments or transfers from other departments will be four weeks from the commencement of lectures.
4.2.3 Applications by students wishing to transfer from other institutions/courses will be considered on an individual basis and may be accepted into the first year of the Diploma in Management Sciences (Operations Management)
4.2.4 Changing from old programme to new programme
4.2.5 The N.D. Operations Management will be phased out and students who have not completed the outstanding subjects in terms of the phase out plan, may either transfer to the new qualification, or may complete the outstanding subjects at another institution and may apply for exemption, subject to the provision of the general rules. Students transferring from the incomplete National Diploma Operations Management to the Diploma in Management Sciences (Operations Management) may, on application, be granted credit for subjects passed towards the new qualification.
4.3 Exemptions and transfers
Students will be able to carry credits from the ND: Operations Management to the new qualification within a four year period. See General Rules G8 and G9.

4.4 Work done during the year
1. Year marks/course marks shall be determined in accordance with the requirements as indicated in the learner guides. For details of assessment refer to the learner guide pertaining to each subject. Failure to meet these requirements will disqualify a student from writing the final examination in the subject concerned.
2. Notwithstanding Rule G12 a year/semester mark obtained for any subject is valid only for the main examination in the year/semester in which a student is registered plus the supplementary examination in that subject if granted to the student in terms of Rule G13.
3. Students must verify course marks before the final examinations are written. A 40% course mark/DP is needed to gain entry into the exam.

5. Student conduct
See General Handbook Rules SR1 to SR12

6. Experiential Learning applicable for the Diploma in Management Science (Operations)
Refer to Rule G28.
In order to qualify for the Diploma in management Sciences (Operations), all full-time students who are bona fide final year students (i.e. students who will complete their diploma programme at the end of the third year) will be required to undertake a period of experiential learning in an approved industrial/commercial organisation.
Details are available in the Departmental Experiential Learning Policy document. The student is required to complete an official logbook detailing duties performed and be subject to an end-of-training evaluation by the immediate supervisor. Although the Institution undertakes to assist the student/candidate in obtaining suitable experiential learning placement, the student/candidate should make efforts to find an “employer”.
The employer must be accredited by the Durban University of Technology for the purposes of experiential learning. An experiential learning agreement creates a separate contract between the “employer” and the student/candidate.
### 7. Programme Structure for Higher Certificate in Operations Management

<table>
<thead>
<tr>
<th>Name of module</th>
<th>Module Code</th>
<th>Study Level</th>
<th>NQF Level</th>
<th>Module Credits</th>
<th>C/E*</th>
<th>Pre-Req.</th>
<th>Co-Req.</th>
<th>Exam.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Literacy</td>
<td>FNLT101</td>
<td>1</td>
<td>5</td>
<td>12</td>
<td>C</td>
<td>NIL</td>
<td>NIL</td>
<td>No</td>
</tr>
<tr>
<td>Introduction to Technology</td>
<td>ITLG101</td>
<td>1</td>
<td>5</td>
<td>12</td>
<td>C</td>
<td>NIL</td>
<td>NIL</td>
<td>No</td>
</tr>
<tr>
<td>Cornerstone 101</td>
<td>CSTN101</td>
<td>1</td>
<td>5</td>
<td>12</td>
<td>C</td>
<td>NIL</td>
<td>NIL</td>
<td>No</td>
</tr>
<tr>
<td>Essentials of Operations Management</td>
<td>TBA*</td>
<td>1</td>
<td>5</td>
<td>20</td>
<td>C</td>
<td>NIL</td>
<td>NIL</td>
<td>No</td>
</tr>
<tr>
<td>Essentials of Project Management</td>
<td>TBA*</td>
<td>1</td>
<td>5</td>
<td>16</td>
<td>C</td>
<td>NIL</td>
<td>NIL</td>
<td>Yes</td>
</tr>
<tr>
<td>Fundamentals of Quality</td>
<td>TBA*</td>
<td>1</td>
<td>5</td>
<td>16</td>
<td>C</td>
<td>NIL</td>
<td>NIL</td>
<td>Yes</td>
</tr>
<tr>
<td>Introduction to Operations Management Techniques</td>
<td>TBA*</td>
<td>1</td>
<td>5</td>
<td>16</td>
<td>C</td>
<td>NIL</td>
<td>NIL</td>
<td>Yes</td>
</tr>
<tr>
<td>Introduction to Organisational Effectiveness</td>
<td>TBA*</td>
<td>1</td>
<td>5</td>
<td>16</td>
<td>C</td>
<td>NIL</td>
<td>NIL</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td>120</td>
<td></td>
<td></td>
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</tbody>
</table>
## 8. Programme structure Diploma Management Science: Operations

<table>
<thead>
<tr>
<th>Code</th>
<th>Subjects</th>
<th>Assessment method</th>
<th>Semester</th>
<th>NQF level</th>
<th>Pre-Req</th>
<th>Major Subjc</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSTN101</td>
<td>Cornerstone 101</td>
<td>C</td>
<td>1</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVST101</td>
<td>Environmental Sustainability</td>
<td>C</td>
<td>1</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IBSL101</td>
<td>Introduction to Business Law</td>
<td>C</td>
<td>1</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITRB101</td>
<td>Introduction to Business</td>
<td>C</td>
<td>1</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QAPM101</td>
<td>Quantitative Approaches to Management Sciences</td>
<td>C</td>
<td>1</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TASM101</td>
<td>Time &amp; Stress Management</td>
<td>C</td>
<td>2</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LWLF101</td>
<td>Law for Life</td>
<td>C</td>
<td>2</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALWR101</td>
<td>Academic Literacy</td>
<td>C</td>
<td>2</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCIF101</td>
<td>Business Communication &amp; Information Literacy</td>
<td>C</td>
<td>2</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Financial Literacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Yr 2</strong></td>
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<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>OPRM101</td>
<td>Operations Management 1</td>
<td>E</td>
<td>1</td>
<td>6</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>OPRT101</td>
<td>Operations Management Techniques 1</td>
<td>E</td>
<td>1</td>
<td>6</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>OEFC101</td>
<td>Organizational Effectiveness 1</td>
<td>E</td>
<td>1</td>
<td>6</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>ITLG101</td>
<td>Introduction to Technology</td>
<td>E</td>
<td>1</td>
<td>6</td>
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<td></td>
</tr>
<tr>
<td>OPRM201</td>
<td>Operations Management 2</td>
<td>E</td>
<td>2</td>
<td>6</td>
<td>Operations Management 1 Yes</td>
<td></td>
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<tr>
<td>OPRT201</td>
<td>Operations Management Techniques 2</td>
<td>E</td>
<td>2</td>
<td>6</td>
<td>Operations Management Techniques 1 yes</td>
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<tr>
<td>OEFC201</td>
<td>Organizational Effectiveness 2</td>
<td>E</td>
<td>2</td>
<td>6</td>
<td>Organizational Effectiveness 1 Yes</td>
<td></td>
</tr>
<tr>
<td>WKPR101</td>
<td>Work Preparedness</td>
<td>E</td>
<td>2</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Yr 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPRN301</td>
<td>Operations Management 3</td>
<td>E</td>
<td>1</td>
<td>6</td>
<td>Operations Management 2 Yes</td>
<td></td>
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<tr>
<td>OPRT301</td>
<td>Operations Management Techniques 3</td>
<td>E</td>
<td>1</td>
<td>6</td>
<td>Operations Management Techniques 2 Yes</td>
<td></td>
</tr>
<tr>
<td>OEFC301</td>
<td>Organizational Effectiveness 3</td>
<td>E</td>
<td>1</td>
<td>6</td>
<td>Organizational Effectiveness 2 Yes</td>
<td></td>
</tr>
<tr>
<td>PRJC101</td>
<td>Project Management</td>
<td>E</td>
<td>1</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCHM101</td>
<td>Supply Chain Management</td>
<td>E</td>
<td>2</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WKS101</td>
<td>Work Sampling</td>
<td>E</td>
<td>2</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPNT101</td>
<td>Entrepreneurship</td>
<td>E</td>
<td>2</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QMNS101</td>
<td>Quality Management Systems</td>
<td>E</td>
<td>2</td>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C = Continuous Assessment  
E = Final Examination
9. **Progression rules including pass requirements**
   1. The final pass mark for all subjects is 50%.
      Student’s who have failed any modules in a previous semester are required to register for the failed modules first before any new modules are added.
   2. Students may not register for more than 0.5 HEMIS credits per semester.
   3. Where a module has a pre-requisite module, students are required to pass the pre-requisite module first.

   See General Rule G14, G15, G16 and G21B.

10. **Exclusion rules**
   1. Notwithstanding DUT General Rules relating to unsatisfactory students (G17, G21, G22 and G23), any student who does not pass a minimum of 40% of the modules for which they were registered in a year will be prevented from re-registering for the qualification. Students will have the right to appeal against their exclusion.

11. **Subject Content**
    Students to read this section in conjunction with the relevant learner guides.

12. **RULE DETAILS**

    **ENTRANCE REQUIREMENTS**
    See General Rules G7.

    **REGISTRATION**

    **SYLLABI**
    The syllabus for each subject indicated in the instructional programme above is published at the end of the handbook in alphabetical order.

    **ADVANCED DIPLOMA IN MANAGEMENT SCIENCES: OPERATIONS MANAGEMENT**

    **Course Objective:**
    Manufacturing industries in South Africa play an important role in the South African economy as it employs a large percentage of the labour force. Job opportunities, therefore, are great in this sector.

    Within the manufacturing sector the greater portion of the workers are engaged in the Production Function which includes specialist fields such as Quality Control, Work Study, Production Planning and Control, Inventory Control, Operations Research, etc. This Advanced Diploma prepares students to enter any of the specialist fields in production or to go directly into supervision of workers and later as Production/Operations Managers. Although experiential training is not compulsory, every effort is made to expose students to manufacturing organisations with visits and periodical training in factories.
ENTRANCE REQUIREMENTS
The ND: Production/Operations Management, Diploma in Management Sciences: Operations or an equivalent three year 360 credits tertiary qualification.

Selection criteria for this programme.
Applicants must meet the minimum requirements mentioned above. An acceptance list is compiled based on the first come first serve principle, provided that the student timeously furnishes the department with all relevant registration documents. Based on this list students will be offered a firm place on the programme. The department is obligated to adhere to the approved DHET Enrolment plan.

REGISTRATION

INSTRUCTIONAL PROGRAMME
The programme comprises Six (6) modules:
Semester 1:
  Research Methodology
  Organisational Behaviour
  Project Management

Semester 2:
  Advanced Operations Management IV
  Advanced Operations Management Techniques IV
  Finance for Non-Financial Managers

DURATION OF INSTRUCTIONAL PROGRAMME
A minimum of one year part-time.

ASSESSMENT AND EXAMINATION
See General Rules G12/G13

PASS REQUIREMENTS
See General Rules G14 & G16

EXEMPTIONS
See General Rules G8

SYLLABI
The syllabus for each subject indicated in the instructional programme above is published at the end of the handbook.
ADVANCED DIPLOMA IN MANAGEMENT SCIENCES (QUALITY MANAGEMENT)

Course Objective
This course enables specialists in production, commerce, educational and service organizations to become qualified Quality Practitioners. The course is designed to develop innovative and entrepreneurial skills and culminates in an interactive project.

ENTRANCE REQUIREMENTS
Applicants may be in possession of a Bachelor’s degree, National Diploma, 360 credits 3 years Diploma or equivalent 3 year 360 credits qualification and be in possession of a minimum of two year’s quality related industrial experience. In addition, a departmental entrance test will be conducted.

Selection criteria for this programme.
Applicants must meet the minimum requirements mentioned above. Student scores of the entrance test will be ranked from highest to lowest. Based on these rankings, those learners with the highest scores will be offered a firm place on the programme. The department is obligated to adhere to the approved DHET Enrolment plan.

REGISTRATION
New and re-enrolling students register in January.
Single registration system will be introduced in 2020.
See General Rules G23

INSTRUCTIONAL PROGRAMME
The programme comprises of six (6) modules:
Semester 1
Organisational Behaviour
Research Methodology
Quality Management Systems

Semester 2
Quality Auditing Techniques
Statistical Quality Techniques
Project Management

DURATION OF INSTRUCTIONAL PROGRAMME
A minimum of one year part-time.

ASSESSMENT AND EXAMINATION
There would be two tests per subject per semester. Assessments are also based on assignments and presentations held during each semester.
1 X 3 hour paper for each subject at the end of the semester.
See General Rules G12/G13
PASS REQUIREMENTS
See General Rules G14/G16

EXEMPTIONS
See General Rules G8

SYLLABI
The syllabus for each subject indicated in the instructional programme above is published at the end of the handbook in alphabetical order.

B. TECH: OPERATIONS MANAGEMENT (BTOPM1)
Course Objective:
Manufacturing industries in South Africa play an important role in the South African economy as it employs a large percentage of the labour force. Job opportunities, therefore, are great in this sector.
Within the manufacturing sector the greater portion of the workers are engaged in the Production Function which includes specialist fields such as Quality Control, Work Study, Production Planning and Control, Inventory Control, Operations Research, etc. This Degree prepares students to enter any of the specialist fields in production or to go directly into supervision of workers and later as Production/Operations Managers. Although experiential training is not compulsory, every effort is made to expose students to manufacturing organisations with visits and periodical training in factories. This course will be phased out in 2019.

ENTRANCE REQUIREMENTS
The ND: Production/Operations Management or Diploma in Management Sciences (Operations) an equivalent three year 360 credits tertiary qualification.

REGISTRATION
See General Rules G23, G16

INSTRUCTIONAL PROGRAMME
The programme comprises five (5) subjects:
Subject
Operations Management IV (offered in 2020)
Operations Management Techniques IV (offered in 2021)
Financial Planning and Control III (offered in 2020)
Introduction to Marketing Management I (Offered in 2021)
Research Methodology (Semester) (Offered in 2020)

DURATION OF INSTRUCTIONAL PROGRAMME
A minimum of two years part-time.

ASSESSMENT AND EXAMINATION
See General Rules G12/G13
PASS REQUIREMENTS
See General Rules G14 & G16

EXEMPTIONS
See General Rules G8

SYLLABI
The syllabus for each subject indicated in the instructional programme above is published at the end of the handbook.

B. TECH: QUALITY (BTQALI)
Course Objective
This course enables specialists in production, commerce, educational and service organizations to become qualified Quality Practitioners. The course is designed to develop innovative and entrepreneurial skills and culminates in an interactive project. This course will be phased out in 2019.

ENTRANCE REQUIREMENTS
Applicants must be in possession of a Bachelor’s degree, National Diploma or equivalent qualification and be in possession of a minimum of two years industrial experience. In addition, a further departmental entrance test will be conducted.

REGISTRATION

See General Rules G16 and G23

INSTRUCTIONAL PROGRAMME
The programme comprises of seven (7) subjects:
Subject
| Quality Management Systems 3 | (Semester 1) |
| Statistical Quality Techniques 3 | (Semester 1) |
| Quality Planning and Implementation 4 | (Semester 2) |
| Quality Auditing Techniques 4 | (Semester 2) |
| Project 4 | (Annual) |
| Continual Quality Improvement 4 | (Semester 1) |
| Quality Techniques 4 | (Semester 1) |

DURATION OF INSTRUCTIONAL PROGRAMME
A minimum of two years part-time.

ASSESSMENT AND EXAMINATION
There would be two tests per subject per semester. Assessments are also based on assignments and presentations held during each semester.
1 X 3 hour paper for each subject at the end of the semester.
Project IV. Assessment for the latter is based on continuous evaluation, a presentation and a mini dissertation
PASS REQUIREMENTS
See General Rules G14/G16

EXEMPTIONS
See General Rules G8

SYLLABI
The syllabus for each subject indicated in the instructional programme above is published at the end of the handbook in alphabetical order.
MASTER OF PHILOSOPHY IN QUALITY MANAGEMENT
This is a dissertation based qualification. Students must prove that they understand a particular problem in the industry in which they have done research, are able to analyse and set it out logically, are able to arrive at logical conclusions or a diagnosis, and are then able to make proposals for the improvement/the elimination of the problem. For further information, please address enquiries to the Department of Operations and Quality Management.

ADMISSION REQUIREMENTS
B. Tech: Quality or an equivalent qualification. See General Rules G24 (1).

REGISTRATION

DURATION
See General Rules G24 (2).

ASSESSMENT AND DISSERTATION
See General Rules G24 (4).

DOCTOR OF PHILOSOPHY IN BUSINESS QUALITY MANAGEMENT
This is a thesis based qualification. In thesis students must provide proof of original and creative thinking, development work and problem-solving, and make a real contribution to the solving of a particular problem in the industry to which their research applies. For further information, please address enquiries to the Department of Operations and Quality Management.

ADMISSION REQUIREMENTS
An appropriate Magister Technologiae or an equivalent qualification. See General Rules G25.

SYLLABI
Note 1 Unless otherwise indicated all Year/Course marks will comprise 40% of the final examination mark. The examination shall comprise 60% of the final mark.
Note 2 Unless otherwise indicated all courses are of one semester duration.

MODULE CONTENT: HIGHER CERTIFICATE IN OPERATIONS MANAGEMENT

DUT Cornerstone 101
The module will start with the analysis of a current issue (one critical event or development will be and analysed; the event in focus will be selected on the basis of its connections to the theme of journeys and its relevance to the issues of ethics, diversity and critical citizenry). The topics will include such topics as the following, not necessarily in this sequence:

Our journeys: moving into higher education
• Journeys from self to community (including forms of community engagement
Financial Literacy
Savings and budgeting
Debt Reduction and Asset Building (bank statement and bank recon) (interest rate, compound and simple)
Building a good credit rating
Consumer Protection (link with law)
Wages and taxation (basic categories, direct and indirect, vat, individual tax)
Investment Planning
Retirement (Building a pension fund / provident fund)

Introduction to Technology
Overview of computer terminology
Overview of the Ethics of Information Technology.
Access to the internet, upload and downloading files
Overview of Ms Word
Overview of a presentation package such as PowerPoint

Essentials of Operations management
Introduction to Operations Management, Product and service design, Facilities Layout, Location Planning & Analysis.

Introduction to Project management Tools and Techniques
Liner Programming, Simplex Method, Transportation, Measures of location for ungrouped Data, Measures of location for grouped Data.

Fundamentals of Quality

Introduction to Organisational effectiveness

Essentials of Project management
The module will start with the analysis of a current issue (one critical event or development will be and analysed; the event in focus will be selected on the basis of its connections to the theme of journeys and its relevance to the issues of ethics, diversity and critical citizenry). The topics will include such topics as the following, not necessarily in this sequence:

**Our journeys: moving into higher education**
- Journeys from self to community (including forms of community engagement and service)
- Journeys of migration, discovery and coercion (including movement of labour)

**Environmental Sustainability**
1. Ecological studies
   - Ecosystems
   - Biodiversity
   - Conservation
   - Hydrological cycle
2. Climatology
   - Global warming and climate change
   - Effects on biodiversity
   - Strategies to curb facilitated climate change
3. Environmental health
   - What is environmental health?
   - Pollution
   - Environmental risk and society
   - Sustainable development
4. Environmental sociology
   - Traditional environmental knowledge
   - Poverty, abuse and crime
   - Resource management
   - Poverty, abuse and crime

**Law for Life**
1. Life scenario: Motor vehicle accident:
   - Criminal law- purpose, procedure, parties, bail, sentences
   - Civil law-purpose, procedure, parties, outcomes
   - Law of insurance-purpose, concept of risk, the contract of insurance, the parties, the premium, the insurable interest and the doctrine of subrogation
   - Road Accident Fund- effect on the common law, purpose of the fund, application, forms
2. Life scenario: A man wishes to get married, he already has one wife. Different types of marital regime in South Africa
   - civil unions
   - customary unions
   - same sex life partnerships
3. Life scenario: A man dies leaving three wives and eight children.
   - The law of testate and intestate succession.
   - The requirements for a valid will.
   - Drafting a valid will.
Introduction to Business
Business Environment
The nature of the business environment?
External, market and internal environments and their inter-relationship.
Environmental analysis
Business Management
The nature of business management.
Management concepts: Planning, organising, leading and controlling.
Decision-making process
Careers in Business Management
Marketing Management
What is Marketing Management?
The 4P’s (Product, Price, Promotion and Place)
Careers in Marketing Management
Retail Management
What is Retail Management?
Functions of Retailing
Retail mix
Role of retail in the supply chain
Careers in Retail Management
Human Resources Management
What is Human Resources Management & Personnel Management?
Careers in Human Resources Management
Public Relations Management
What is Public Relations Management?
Functions of Public Relations
Careers in Public Relations Management
Operations Management
What is Operations Management?
Concepts of efficiency, factories, products, layouts and quality.
Careers in Operations Management

Quantitative Approaches to Management Sciences
Basic Number Calculations
Working with Fractions
Working with Decimals
Decimal Fractions
Working with percentages
Using a calculator
Ratios
Powers and Roots
Algebra
Graphical representations – straight line graph
Tables and Charts
Statistics
**Time and Stress Management**
- Introduction to Stress and Stress Management
- Building Stress Management Skills
- Understanding Time Management
- Overcoming Barriers to Effective Time Management
- Purpose of Planning
- Personal Goal Setting

**Introduction to Business law**
- Basic framework of the South African legal system.
- General principles of the law of contract.
- The principles of consumer law in South Africa.
- Specialisation specific:
  - Legislation relating to packaging in South Africa.
  - Intellectual property law.
  - The law relating to electronic payment systems.
- Censorship
- Freedom of expression

**Business Communication and Information Literacy**
- Group roles, functions and behaviour, and reflection on own and others’ performance.
- Format and conventions for: various types of business letters; emails; reports; meetings documentation. Exercises for practice of the aforementioned. Functions and patterns of meetings and roles and functions of office bearers.
- Accessing and searching electronic catalogues and databases for specific items; evaluating items so found. Use of at least one referencing system.

**Financial Literacy**
- Savings and budgeting
- Debt Reduction and Asset Building (bank statement and bank recon) (interest rate, compound and simple)
- Building a good credit rating
- Consumer Protection (link with law)
- Wages and taxation (basic categories, direct and indirect, vat, individual tax)
- Investment Planning
- Retirement (Building a pension fund / provident fund)

**Academic Literacy**
- Students will be introduced to the concept of academic literacies and the link between reading literature and literacy. Also academic research and the writing of assignments will be discussed. The problems associated with referencing and plagiarism will be addressed. Distribution of novel and learner guides will take place. Text reading targets
for the structured completion of students’ own reading of the novel will be set.
Students will discuss in groups selected passages from novel with respect to register,
culture and purpose. Oral feedback session.
Students will identify parts of sentence construction and compare direct and indirect speech.
Students will complete a short written quiz to assess their progress in the reading of
the novel. (online exercises)
Analysis of paragraphs. Students will identify topic sentences and other functionalities.
Group work discussions and critical thinking on themes related to gender relations and
language.
Students will write a short (15 lines) paragraph each related to group discussions on
gender. Formative assessment and feedback to be given.
Students to read aloud in class from the novel!
Research Report Writing Workshop. Developing the basics of the academic research
writing process.
Further developed by online exercises.
Proof-reading and correction exercises. Focus on punctuation and accuracy.
Writing and re-writing exercises. Focus on expression and clarity.
Group discussions and worksheet on multilingualism and translation in texts. Focus on
glossary and dictionary use.
On-line self-assessments of students’ progress with the prescribed novel.
Students will complete a short written quiz to assess their progress in the reading of
the novel.

Textual analysis: Students will analyse selected passages from the novel and in groups
complete worksheet on transculturation/intercultural communication.
Summary writing: purposes and strategies.
Summary writing exercises.
Summary writing: selecting relevant information.
Summary writing exercises.

Self-reflection:
How has reading the novel helped develop my academic literacy/literacies?
What role does culture play in the modern lifestyle of both work and leisure?
Submission of short written piece based on this reflection.

Year 2
Operations Management I
Location Planning & Analysis. Introduction to Quality.

Operations Management Techniques I
Linear programming: model formulation. Linear programming: Graphical solution. Linear
programming: Simplex method of solution. Transportation models.
Introduction to Technology
Overview of computer terminology
Overview of the Ethics of Information Technology.
Access to the internet, upload and downloading files
Overview of Ms Word
Overview of a presentation package such as PowerPoint

Organizational Effectiveness 1
Introduction to Effectiveness; Functions of management services; Productivity; Productivity & the Quality of life; Work study & productivity; Problem solving techniques; People within organizations; The human factor in enterprise operation; Work study & management; Work study & supervision; Work study & the worker; The management services practitioner.
Methods & Systems Improvement. Method study & the selection of jobs; Record, examine, develop; Movement of workers in the working areas. Evaluate, define, install, maintain.
Improving Administrative System. The importance of method study in the office; The procedure for improving methods of work in the office; design and control of forms; Office layout.
Work Measurement: Time study. The equipment; Selecting and timing the job; Rating; From study to standard time.

Operations Management 2

Operations Management Techniques 2

Organizational Effectiveness 2

Work Preparedness
Techniques for identifying personal strengths and weaknesses
Career planning and goal setting
Employment barriers and overcoming them
Sources of career and job opportunity information
Job search techniques
Styles, types and applications of the CV (resume)
The written CV
Researching prospective employers
Preparation for interviews
Interviewing techniques
Dress and hygiene practices
Ethical behaviour and punctuality
Realistic expectations
Operations Management 3

Operations Management Techniques 3

Organizational Effectiveness 3

Project Management
Introduction to Project Management
The Project Management Process
Dealing with Project Stakeholders
Project Leadership
Teamwork
Communication and Information Systems
Project Risk Management
The 9 knowledge areas of Project Management (PMBOK)
An introduction to Project Tools

Work Sampling
Planning the work sampling study
Determining the number of observations required
Determining the observation frequency
Designing the work sampling form
Using control charts
Recording observations
Analysis of data
Machine and operator utilisation
Determining allowances
Determining standard time
Self-observation
Preparation of report
Conducting presentations
Supply Chain Management
Key issues of supply chain management
Recent trends in supply chain management
Complexities that are involved with global supply chain
Strategic, tactical and operational responsibilities of supply chain management
Requirements of an effective supply chain
Challenges in creating an effective supply chain
Procurement
Purchasing interfaces
The purchasing cycle
Centralised vs decentralised purchasing
Ethics in purchasing
Supplier Management
Choosing suppliers
Suppliers audits
Supplier certification
Supplier relationship management
Logistics
Movement within a facility
Incoming and outgoing shipments
Tracking goods
Evaluating shipping alternatives
Supply chain strategies
Many suppliers
Few suppliers
Vertical integration
Keiretsu networks
Virtual companies

Entrepreneurship
Introduction to entrepreneurship
The entrepreneurial life/ starting the business
The business plan
Financial and marketing plan
Business Organizations:
Types of businesses
Legal forms of ownership
Franchising
Sole proprietorship
Partnership
Corporation
Analysing a business environment
Evaluating a business
Customer relationship
Quality Management Systems
Background to QMS
Investigating quality mechanisms in an organisation
Stakeholder consultation
Planning the QMS
Designing the QMS
Implementation processes

MODULE CONTENT – ADVANCED DIPLOMA IN MANAGEMENT SCIENCES (OPERATIONS MANAGEMENT)

RESEARCH METHODOLOGY


ORGANISATIONAL BEHAVIOUR

Introduction to organisational behaviour
Managing demographic and cultural diversity in organisations
Individual differences and perception
Motivation theories
Managing groups and teams
Communication
Leadership
Conflict and negotiations
Organisational culture
Organisational change

PROJECT MANAGEMENT

Introduction to Project management
The Project lifecycle
Project management process
Project Methodology
Project stakeholder management
Project time management
Project procurement management
Project Resource Management
Project cost management
Project quality management
Project Risk Management
ADVANCED OPERATIONS MANAGEMENT IV


ADVANCED OPERATIONS MANAGEMENT TECHNIQUES IV


FINANCE FOR NON FINANCIAL MANAGERS

Basic Accounting concepts
Cash Management including cash flow statements
Financing options (debt versus equity: choosing the best option)
Time value of money
Risk and return
Analysis and interpretation of financial statements
Job costing
Cost Volume Profit Analysis

MODULE CONTENT – ADVANCED DIPLOMA IN MANAGEMENT SCIENCES (QUALITY MANAGEMENT)

RESEARCH METHODOLOGY


QUALITY MANAGEMENT SYSTEMS 3


STATISTICAL QUALITY TECHNIQUES 3

Modern quality management & improvement; The DMAIC problem solving process; Describing variations; The normal distribution; Elementary probability rules; Introduction to hypothesis testing; Simple linear regression & correlation; How SPC
works; Variable control chart; Attributes control charts; Determining process & measurement systems capabilities.

QUALITY AUDITING TECHNIQUES 4

ORGANISATIONAL BEHAVIOUR

- Introduction to organisational behaviour
- Managing demographic and cultural diversity in organisations
- Individual differences and perception
- Motivation theories
- Managing groups and teams
- Communication
- Leadership
- Conflict and negotiations
- Organisational culture
- Organisational change

PROJECT MANAGEMENT

- Introduction to Project management
- The Project lifecycle
- Project management process
- Project Methodology
- Project stakeholder management
- Project time management
- Project procurement management
- Project Resource Management
- Project cost management
- Project quality management
- Project Risk Management
MODULE CONTENT

B. TECH: OPERATIONS MANAGEMENT (BTOPM1)

OPERATIONS MANAGEMENT IV (OPMN401)

FINANCIAL PLANNING AND CONTROL III (FPLC301)

OPERATIONS MANAGEMENT TECHNIQUES IV (OPMT401) - Subject to change

INTRODUCTION TO MARKETING MANAGEMENT I (IMKM101)
(Marketing Management)

RESEARCH METHODOLOGY (RMPM101)
B. TECH: QUALITY (BTQALI)
QUALITY MANAGEMENT SYSTEMS 3 (QUMS301)

STATISTICAL QUALITY TECHNIQUES 3 (SQTQ301)
Modern quality management & improvement; The DMAIC problem solving process; Describing variations; The normal distribution; Elementary probability rules; Introduction to hypothesis testing; Simple linear regression & correlation; How SPC works; Variable control chart; Attributes control charts; Determining process & measurement systems capabilities.

QUALITY PLANNING AND IMPLEMENTATION 4 (QPIM401)

QUALITY AUDITING TECHNIQUES 4 (QATE401)

PROJECT 4: QUALITY (PROJ401)
Project Methodology Project Management skills. Presentation of a colloquium. Submission of a 240 hour project.

CONTINUAL QUALITY IMPROVEMENT 4 (CQUI401)

QUALITY TECHNIQUES 4 (QUAT401)

E&OE