CONSTRUCTION SUPERVISION - LEVEL 4

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INTRODUCTION

A. What is Supervision about?
Supervision provides students with a focus on supervisory activities and functions such as planning, leading, monitoring, controlling, organising, and motivating, in order to ensure that work is productive in accordance with the requirements of the civil engineering and building construction industry.

B. Why is Supervision important in the Construction learning programme?
Activities in this supervisory discipline play an important role in the completion of building and civil construction projects. The subject also encourages a realisation of the need for quality in building projects. Success in this subject could lead to entrepreneurship and job creation.

C. The link between Construction Supervision learning outcomes and the Critical and Developmental Outcomes
The students will be able to identify activities and performance levels that ensure productivity. Students will learn about effective teamwork, will interpret health and safety programmes, work with policies and will deal with applicable documentation. They will communicate effectively in work processes, and deal with work instructions. Students will be required to understand the world as set of related systems and will be able to use science and technology appropriately as required in this discipline.

D. Factors that contribute to achieving Construction Supervision Learning Outcomes
- Thorough preparedness for teaching and learning activities
- A conducive teaching and learning environment with adequate effective student support
- Motivation
- Commitment
- Positive attitude
- Interest in the construction supervision processes.
1 DURATION AND TUITION TIME
This is a one-year instructional programme comprising 200 teaching and learning hours. The subject may be offered on a part-time basis provided the student meets all the assessment requirements.

Students with special education needs (LSEN) must be catered for in a way that eliminates barriers to learning.

2 SUBJECT LEVEL FOCUS
This one year course is designed to introduce FET college learners to basic skills that will be required to supervise and manage construction projects once they have graduated and acquired the necessary workplace experience. The content has been designed in accordance with legislated principles and best practices. These principles apply equally to subordinates and supervisors. Emphasis has been placed on the need to respect the rights and opinions of others as well as the need for harmonious working relations.

3 ASSESSMENT REQUIREMENTS

3.1 Internal assessment (50 percent)

3.1.1 Theoretical component
The theoretical component forms 40 percent of the internal assessment mark.

Internal assessment of the theoretical component in Construction Supervision Level 4 takes the form of observation, class questions, group work, and informal group competitions with rewards, individual discussions with students, class, topic and semester tests and internal examinations. Lecturers can observe students when marking exercises from the previous day and asking class questions.

Assignments, case studies and tests can be completed at the end of a topic. Tests and internal examinations must form part of the internal assessment.

3.1.2 Practical component
The practical component forms 60 percent of the internal assessment mark.

Practical components include applications and exercises. All practical components must be indicated in a Portfolio of Evidence (PoE).

Internal assessment of the practical component in Construction Supervision Level 4 takes the form of assignments, practical exercises, case studies and practical examinations in a simulated business environment.

Students may complete practical exercises daily. Assignments and case studies can be completed at the end of a topic. Practical examinations can form part of internal practical assessment.

- Some examples of practical assessments include, but are not limited to:
  A. Presentations (lectures, demonstrations, group discussions and activities, practical work, observation, role-play, independent activity, synthesis and evaluation)
  B. Exhibitions by students
  C. Visits undertaken by students based on a structured assignment task
  D. Research
  E. Task performance in a “Structured Environment”
• **Definition of the term “Structured Environment”**

For the purposes of assessment, “Structured Environment” refers to a simulated workplace or workshop environment. Activities in the simulated workplace or environment must be documented in a logbook with a clear listing of the competencies to be assessed. The following information must be contained in the logbook:

- Nature of department or environment in which practical component was achieved
- Learning Outcomes
- Activities in the environment with which to achieve the Learning Outcomes
- Time spent on activities
- Signature of facilitator or supervisor and student

For the logbook to be regarded as valid evidence, it must be signed by an officially assigned supervisor.

• **Evidence in practical assessments**

All evidence pertaining to evaluation of practical work must be reflected in the students’ Portfolio of Evidence. The assessment instruments used for the purpose of conducting these assessments must be part of the evidence contained in the PoE.

3.1.3 **Processing of internal assessment mark for the year**

A year mark out of 100 is calculated by adding the marks of the theoretical component and the practical component of the internal continuous assessment (ICASS).

3.1.4 **Moderation of internal assessment mark**

Internal assessment is subjected to internal and external moderation procedures as set out in the *National Examinations Policy for FET College Programmes*.

3.2 **External assessment (50 percent)**

A national examination is conducted annually in October or November by means of a paper(s) set and moderated externally. The practical component will also be assessed.

External assessment details and procedures are set out in the *Assessment Guidelines: Construction Supervision Level 4*.

4 **WEIGHTED VALUES OF TOPICS**

<table>
<thead>
<tr>
<th>TOPICS</th>
<th>WEIGHTED VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Supervision and motivation</td>
<td>20%</td>
</tr>
<tr>
<td>2. Quality checks</td>
<td>10%</td>
</tr>
<tr>
<td>3. Safety controls</td>
<td>10%</td>
</tr>
<tr>
<td>4. Project management, costs and productivity</td>
<td>20%</td>
</tr>
<tr>
<td>5. Labour relations and legislation</td>
<td>15%</td>
</tr>
<tr>
<td>6. Discipline and conflict management</td>
<td>15%</td>
</tr>
<tr>
<td>7. Record keeping and administration.</td>
<td>10%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100</strong></td>
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</tbody>
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5 **CALCULATION OF FINAL MARK**

Internal assessment mark: 
Student’s mark/100 x 50 = a mark out of 50 (a)

Examination mark: 
Student’s mark/100 x 50 = a mark out of 50 (b)

Final mark: 
(a) + (b) = a mark out of 100

All marks are systematically processed and accurately recorded to be available as hard copy evidence for, amongst others, reporting, moderation and verification purposes.
6 PASS REQUIREMENTS
A student must obtain at least 50 percent in ICASS and 50 percent in the examination in order to achieve a pass in this subject.

7 SUBJECT AND LEARNING OUTCOMES
On completion of Construction Supervision Level 4, the student should have covered the following topics:

| Topic 1: | Supervision and motivation |
| Topic 2: | Quality checks |
| Topic 3: | Safety controls |
| Topic 4: | Project management, costs and productivity |
| Topic 5: | Labour relations and legislation |
| Topic 6: | Discipline and conflict management |
| Topic 7: | Record keeping and administration |

7.1 Topic 1: Supervision and motivation

7.1.1 Subject Outcome 1: Define the role players and their responsibilities on the construction site.

Learning Outcomes
The student should be able to:
- Identify different site personnel and role players on a construction site.
- Describe the functions and responsibilities of various construction site personnel.
- Briefly describe the role of the supervisor and the PLONC process.
- Explain the hierarchy of an organisation with reference to an organogram.
- List the duties and qualities of a supervisor.
- Discuss the role of supervision where subcontractors are employed.

7.1.2 Subject Outcome 2: Describe the factors that motivate humans.

Learning Outcomes
The student should be able to:
- Describe how to motivate people by having a motive and by anticipating consequences.
- Discuss motivation in terms of Maslow's Hierarchy of Needs and Hertzberg's Hygiene and Non-Hygiene factors.
- Explain the "Law of Security" as a motivating force.
- Explain the "Law of Self-Fulfilling Prophecies".
- Explain the rationale for a good supervisor to praise subordinates in public and to reserve criticism for private.
7.2 Topic 2: Quality checks

7.2.1 Subject Outcome 1: Define and apply specified quality checks

Learning Outcomes
The student should be able to:
• Describe the importance of inspection and control on the construction site.
• Explain the benefits of setting criteria for what is acceptable at the start of a job.
• Explain the function of the “Resident Engineer” and “Clerk of Works” and the benefits of cooperating with these people.
• Describe the use of milestones to monitor progress.
• Explain and demonstrate the use of checklists to monitor compliance with standards.
• Explain the importance of a good safety record.
• Explain the difference between doing a job “to perfection” and doing a job “within allowable tolerances” as agreed in the contract or set by national standards.
• Explain and illustrate the importance of learning from mistakes.
• Explain the importance of signing off work at different stages of a project.

7.3 Topic 3: Safety controls

7.3.1 Subject Outcome 1: Describe and apply control systems and strategies.

Learning Outcomes
The student should be able to:
• List and describe controls needed to complete a construction project successfully.
• Describe control strategies to combat cost and time overruns on construction projects.
• Explain control techniques to prevent theft of building materials from a small construction project.
• Explain control techniques to prevent theft of tools and equipment on construction sites where other contractors are employed.
• Describe control mechanisms to keep a construction site orderly and safe where different subcontractors are employed.
• Discuss alternative interventions where a subcontractor is unable to deliver what has been contractually agreed in terms of time and quality.
• Discuss the advantages of interim payments subject to suspense conditions.
• Explain legislative requirements in respect of controlling hazards on site.
• Explain the requirements for safety barriers and signage on construction sites.
• Describe the legal requirements regarding the appointment of Health and Safety Representatives and Health and Safety Committees and their functions and responsibilities.
• Discuss the requirements regarding the appointment and minimum qualifications of a first aid provider on a construction site.
• Explain the purpose of a reserve first aid provider.
• Describe the obligations and duties of the first aid provider.
• Discuss the rights and obligations of a supervisor when witnessing unsafe practice according to health and safety legislation.
• Explain the importance of compiling a “dilapidation report” prior to undertaking major excavations, blasting and demolition work.

7.3.2 Subject Outcome 2: Describe health and safety on a construction site

Learning Outcomes
The student should be able to:
• Explain the legal implications of the OHS Act on a construction site.
• Describe the principles of a safety management plan on a construction site.
• Explain and illustrate how to identify, remove, reduce and report potential hazards in the work area.
• Identify protective requirements and equipment and demonstrate their use.
• Explain the implications of working in confined spaces.
• Explain the implications of the handling, transportation, storage and utilization of hazardous materials on a construction site.
• Describe correct location of fire extinguishers, hoses and alarms.
• Identify and correctly use different fire extinguishers.
• Describe and apply the correct procedures for identification of emergencies.
• Describe the correct procedure for reporting injuries.

7.4 Topic 4: Project management, costs and productivity

7.4.1 Subject Outcome 1: Explain and apply supervisory activities.

Learning Outcomes
The student should be able to:
• Define and differentiate between the terms “management” and “leadership” with examples.
• Describe the importance of supervision on a construction site.
• Describe the roles and responsibilities of the construction site supervisor and construction site manager.
• Plan and conduct site meetings with site personnel, construction teams and other role players.
• Explain and illustrate the principle of regular input and feedback on proceedings and developments.
• Explain and illustrate coordination and monitoring of implemented follow up actions subsequent to meetings.

7.4.2 Subject Outcome 2: Monitor and control cost and productivity of construction work.

Learning Outcomes
The student should be able to:
• Describe the measuring and recording of activity production and resource costs on a construction project.
• Explain the allocation of construction resources to relevant activities.
• Describe and record the actual usage cost of resources.
• Measure and record team activities and production outputs.
• Compile a production and cost activity report.
• Calculate actual total costs of production and actual unit costs.
• Calculate activity profit or loss by comparing actual total cost with allowed total cost.
• Explain and illustrate cost control of construction activities.
• Compare actual unit cost for an activity with allowable unit cost.
• Utilise information and take decisions to control cost of construction activities.
• Implement productivity improvement measures on a construction project.
• Establish and review productivity targets.
• Identify and implement measures to improve productivity in accordance with the activity report.
• Monitor the implementation of productivity improvement measures.

7.5 Topic 5: Labour relations and legislation

7.5.1 Subject Outcome 1: Describe rights and obligations of employees and employers

Learning Outcomes
The student should be able to:
• Explain the legal rights and obligations of employers and workers.
• Define the following terms: “unfair labour practice”, “employee” and “unfair dismissal” in terms of the Basic Conditions of Employment Act 75 of 1997.
• Explain the obligations of employers and workers with regard to safety.

7.5.2 Subject Outcome 2: Explain different labour relations.

Learning Outcomes
The student should be able to:
• Discuss the importance of proper communication on a construction site
• Explain the objectives and functions of work councils.
• Explain the functions of unions in labour issues.
• Explain different ways of dealing with strikes.
• Explain the different grievance and disciplinary procedures.
7.6 Topic 6: Discipline and conflict management

7.6.1 Subject Outcome 1: Describe disciplinary procedures

Learning Outcomes
The student should be able to:
• Explain the importance of maintaining discipline.
• Explain and illustrate the importance of “leading by example”.
• Describe the statutory guidelines when dealing with disciplinary matters.
• Explain the relevant procedure, and address a subordinate who has committed an offence or who is in breach of a company rule.

7.6.2 Subject Outcome 2: Explain conflict management in the construction environment.

Learning Outcomes
The student should be able to:
• Identify and describe various types and causes of conflict in the construction industry.
• Identify and explain ways of dealing with conflict in the construction environment.
• Explain the steps involved in resolving conflict.
• Discuss common pitfalls of conflict handling.
• Explain the effects of conflict on productivity in the construction environment.
• Explain ways of preventing conflict in the construction environment.

7.7 Topic 7: Record keeping and administration

7.7.1 Subject Outcome 1: Describe and illustrate accurate record keeping of a construction project.

Learning Outcomes
The student should be able to:
• Discuss the importance of recording and maintaining records according to company policies and legislation.
• List important records that should be filed on a construction site.
• Explain and illustrate the importance of using a site diary.
• Explain the reasons for date-stamping incoming mail.
• Explain the purpose of backup copies of all important documents.

7.7.2 Subject Outcome 2: Implement and maintain an administration system.

Learning Outcomes
The student should be able to:
• Implement a record keeping documentation system.
• Complete documentation accurately and legibly.
• Maintain an administration system.
• Update records regularly in accordance with site procedures and a quality management system.
• Store records in a manner, which ensures ease of retrieval and currency.
• Compile and submit appropriate reports timeously.
• Verify data in records for accuracy and precision.
• Draft accurate and relevant reports within prescribed deadlines.
• Submit reports to relevant role players within prescribed deadlines.
8 RESOURCE NEEDS FOR THE TEACHING OF CONSTRUCTION SUPERVISION – LEVEL 4

8.1 Physical resources
Building infrastructure, fixtures, networks, plant, workshops and machinery

8.2 Human resources
Minimum educator qualifications and training, ongoing upskilling requirements

8.3 Other resources
• Educator and student teaching and learning materials, teaching and learning aids, etc.
• Budget, consumables, learning materials/resources.