AGRICULTURAL TECHNOLOGY

Dear Grade 12 Agricultural Technology learner
The subject Agricultural Technology focuses on technology used in agriculture. The subject covers the knowledge of how processes, tools, equipment, structures and skills are utilized by farmers to cultivate agricultural land and produce food and products, through various production processes, thus sustaining and maintaining quality of life and increasing economic, aesthetic and sound cultural values.

Scope of Knowledge
- Technology, society and the environment
- Technological process
- Specific knowledge and understanding
- Application of knowledge

Subject requirements
Schools must have adequate human resources and access to appropriately equipped workshops where the practical demonstrations, lessons and practical work (PAT) can be done. Make sure that you have a textbook, exercise book, calculator, ruler, eraser, pen and pencil.

Time Allocation for Agricultural Technology
Four hours per week are allocated to Agricultural Technology. A two-hour continuous period must be allocated per week for practicals. Practical classes in the afternoons can be used to finish the PAT and various practical activities as decided by the school.

Content Checklist
Below is a checklist you should use to ensure that you have covered the Grade 12 content in full. In Grade 12 the main content topics are Safety, Structural Materials, Energy, Construction Processes, Tools and Equipment and Irrigation and Water Supply, Communication, Drawings and Measurements, Calculations and Calibrations.

Overview of Topics

Safety
Safety hazards*:* three steps of a hazard control system
OHS Act: farm safety regulations according to the OHS Act.

Structural Materials
- Metal alloys
- Synthetic materials
- Electric fences

Energy
- Alternative energy: wind, solar geothermal and bio-energy

Construction Processes
- Advanced welding techniques

Tools and Equipment
- Harvesting or processing machines/equipment
- Tractor systems

Irrigation and Water Supply
Overhead irrigation systems (macro irrigation systems):
- irrigation scheduling
- waste water removal
- water purification/softening.

Communication
- Computer and irrigation control systems
- Computers controlling and monitoring engines implements and equipment (GPS; CIS; VRT).

Drawings
- Produce freehand design drawings of structures, buildings or implements.

Measurements, Calculations and Calibrations
- Problem solving in data collected.

Assessment
- **SBA**: 25% — **100 marks**
- **PAT project**: 25% — **100 marks**
- **Final external examination** (Nov): 50% — **200 marks**

The following **formal assessment tasks are compulsory**:
- One practical task
- Two control tests
- Trial examination. This examination has exactly the same content distribution and format as the final examination
- PAT
- November examination

The **external examination paper** is structured as follows:
- **November Exam Paper**: (3 hrs) — **200 marks**
- **Section A**: Question 1 (Short Questions) — **40 marks**
- **Section B**:
  - **Question 2**: Materials and Structures — **35 marks**
  - **Question 3**: Energy — **20 marks**
  - **Question 4**: Skills and Construction Processes — **35 marks**
  - **Question 5**: Tools, Implements and Equipment — **40 marks**
  - **Question 6**: Water Management — **30 marks**

Tips for success
- Ask your teacher for the content framework for Grade 12. This will give you the detailed content for Agricultural Technology. Paste it in your exercise book. Tick off every topic as it is taught in class, and write the relevant textbook page numbers next to the topic.
- Prepare yourself to draw, design, sketches and do calculations. Read case studies or scenarios very carefully, interpret diagrams, study sketches (also the labelling) and apply your knowledge.
- Work through as many past Agricultural Technology papers as possible to prepare for the examinations.
- PAT must be done accurately and neatly according to the PAT guidelines and must be finished in the prescribed time.
- Assignments and practical tasks must be done according to the guidelines and handed in on time.