**Bachelor of Science (Honours) in Technical Design and Technology**

**Course overview:**

This programme is true to the nature of technology because although it relates significantly with areas such as mathematics, science, engineering, computing and art to name but a few, it also creates new combinations and boundaries of such technologically related domains. Within this course there are study-units that are intended to enable technological capability that is to 'do' technology as opposed to just learning about it. However, there are other study-units which are then targeted towards developing a reflective perspective on technology and its interaction with the human being, that is, how technology may be used or misused, learnt and taught.

The components making up this course can be categorized under the following headings:

1. Engineering Sciences and Visual Communication conceptual knowledge – Resistant materials, Electrical and Electronic Systems and Control and, Graphics

This category provides the main space and time for developing knowledge about manufacturing processes, processes that control a technological function, and processes that are highly dependent on competency in a visual language rather than only a verbal or symbolic one.

2. Technological procedural knowledge (laboratory/workshop practice)

This category provides the time and resources to support the engineering sciences mentioned in point 1. This category, together with the design category in point 3, provides the main channel for "doing technology".

3. Design principles and processes (conceptual and procedural knowledge)

This category provides the main space for developing designerly ways of knowing and doing. It is one cross-curricular theme which will link most of the work done under categories mentioned in points 1 and 2.

4. Mathematics

This is another cross curricular theme which will link most of the work done under categories mentioned in points 1, 2 and 3.

5. Field visits

This category provides the space and time for industrial experiences or participation in community experiences which involve technology education, for example a yearly Design and Technology Expo for schools, a robotics competition, a roaming technology popularization team etc.

6. Technology studies

This provides the main space for reflective thought about technology and its possible social, political, cultural, environmental impact and how such issues may be permeated within a curriculum for school students, for the general public or other target audiences.

The content of the course is based on the National Minimum Curriculum subjects of Design and Technology, Graphical Communication and vocational Engineering Technology.

**Learning outcomes:**

By the end of the course, you will be able to:

1. Develop a values-based philosophy for technology education both as a learner, and also as a communicator or facilitator of technological knowledge.

2. Give a wide perspective of the definition of technological knowledge by integrating multiple disciplines of technological conceptual and procedural knowledge.

3. Draw on transferable conceptual and procedural skills within the domain of technology to solve real-world problems.

4. Develop powerful cognitive frameworks which are based on relationships between technological content matter and human interaction with technological products.

5. Develop a perspective that design and technology is a major human achievement and therefore is relevant to modern everyday life.

6. Evaluate the impact of technology on society from different perspectives, for example, environmental, economic, cultural, emotional, social, technical, aesthetic etc and participate in discourses about technological issues as an informed citizen in a democratic society.

7. Communicate technological knowledge in a variety of ways and help others become technologically literate, competent, creative and enterprising.

8. Act as an ambassador for technological knowledge and its related professions.