

# Hoërskool Louis Trichardt

## SUBJECT & CAREER INFORMATION



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# OUR TOP PRIORITY IS ACADEMICS!

## Compulsory subjects:

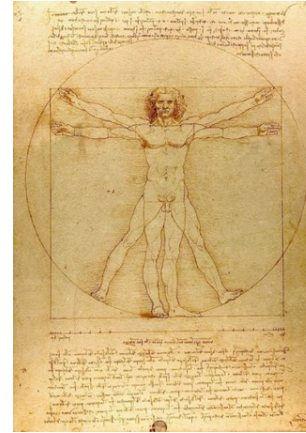
- Home Language
- First Additional Language
- Mathematics / Mathematical Literacy
- Life Orientation

## CHOICE SUBJECTS:

- Business Studies
- Economics
- Accounting
- Physical Science
- Life Science
- Geography
- Hospitality Studies
- Engineering Graphics and Design
- Information Technology (IT)
- Computer Applications Technology (CAT)
- Tourism
- Design

## 4. Art is the future.

“As information and intelligence become the domain of computers, society will place a new value on the one human ability that can't be automated: emotion (Jensen, 1999, p.84).” While other in-demand courses sound terribly enticing at the moment, you might want to include art and design education within those options, seeing as the future would need emotional connection the same way it would with technical aspects.



In the words of former President Barack Obama, “The future belongs to young people with an education and the imagination to create.”

*The Vitruvian Man drawing by  
Leonardo da Vinci, circa 1490*

## 5. Art is for those who want to turn vision into reality.

Historian Eugene Ferguson shares a little something about art: “Pyramids, cathedrals, and rockets exist not because of geometry, theories of structures, but because they were first a picture – literally a vision – in the minds of those who built them. ” Studying art and design is hard, making art is even harder, but not entirely impossible for those with vision and intent to persevere and see it through.

*WTC Hub in New York City designed by famed Spanish architect Santiago Calatrava.*

**Artist James McNeill Whistler once said, “An artist is not paid for his labour, but for his vision.”**

These are only some of the many reasons why you should seriously consider art and design as an education. While society continues to have evolving views regarding art and its continuous developments, it is important to assess both the idealistic and realistic sides of the education you wish to pursue, and decide for yourself how far you are willing to go for it and how much hard work you're going to put into it. After all, success follows the bold.







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## DESIGN

“No culture or country can just exist without even the very basics that the creative industries provide. Design is therefore not a luxury, but rather a necessity that reacts on basic human needs.” - **Suné Stassen: Creative Consultant and Design Activist**

How can our learners benefit from education in design and also contribute to the development of the South African design industry?

### 21st century demands for the market place:

- Be effective visual communicators
- Understand designed products in our daily lives in the light of history
- Be creative, innovative, think outside of the box
- Have original ideas, work well with others
- Understand how design impacts our daily lives and improves our life standards
- Young people who understand what good design is
- Be socially and environmentally responsible, be entrepreneurs
- Acquire vital life skills that can be used in other subjects
- Problem solvers, investigators that gather information
- Design, technology and science works successfully together to make top-quality products for export

### The four design fields:

1. Visual Communication/Information/Graphic design
2. Environmental: Architecture/Interior design/Landscape design
3. Industrial design- Product design(3D)/ Jewellery design
4. Surface design (2D)-Textiles and Pattern, Fashion Design

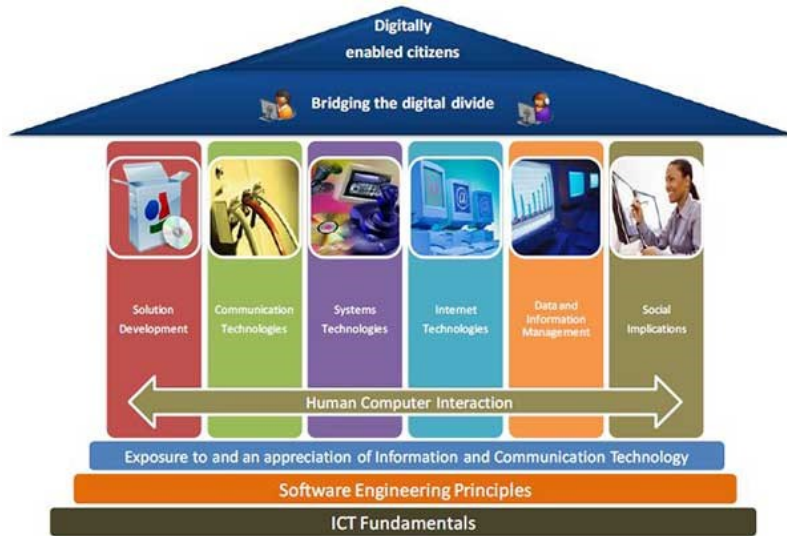
## INFORMATION TECHNOLOGY:

Information Technology is the study of the various interrelated physical and non-physical technologies used for the capturing of data, the processing of data into useful information and the management, presentation and dissemination of data.

Information Technology studies the activities that deal with the solutions to problems through logical and computational thinking. It includes the physical and non-physical components for the electronic transmission, access, and manipulation of data and information.

### Outline of the curriculum:

The diagram below illustrates how the six main topic areas of the Information Technology curriculum support the teaching of digitally informed learners.



### Who should opt for this subject?

Information Technology is an academically demanding subject. It requires a very good mathematical background, an enquiring mind, problem-solving abilities and a rigorous work ethic. It is ideal for the academically able person who has an interest in programming and working on his computer. It is advised strongly that if a person does not achieve a B for Maths at the end of Grade 9 then he should not choose this subject.

## Responsible Grade 10 subject choices are important:

It is very disappointing when Grade 12 learners and their parents realise that the subjects the learners have taken do not allow them to apply for their chosen field of study. It is possible that they may have chosen the correct subjects, but they do not meet the minimum admission requirements.

### Steps to follow:

STEP 1: Gather information on possible career opportunities. Go to [www.pacecareers.com](http://www.pacecareers.com).

STEP 2: Take note of the structure of the National Senior Certificate (NSC) and the Independent Examination Board (IEB) Certificate.

Grade 9 learners are required to include at least SEVEN subjects in their subject package for Grade 10:

Four compulsory subjects and three other optional subjects from a list of the recognised NSC 20 credit subjects .

### National Senior Certificate (NSC) seven-point rating scale:

Achievement level	Description	Percentage
7	Outstanding achievement	80–100%
6	Meritorious achievement	70–79%
5	Substantial achievement	60–69%
4	Adequate achievement	50–59%
3	Moderate achievement	40–49%
2	Elementary achievement	30–39%
1	Not achieved	0–29%

STEP 3: Make sure you are aware of the admission requirements for studies at a tertiary institution.

**Admission requirements of the Department of Education:**

The statutory minimum requirements for degree studies is a National Senior Certificate (NSC) or an Independent Examination Board (IEB) Certificate with a minimum achievement level of 4 (50–59%) in four recognised NSC subjects. Please note that the different tertiary institutions will have different admission requirements.

**STEP 4: Take an important decision between Mathematics and Mathematical Literacy**

Not all learners have a love for Mathematics and not all learners have the same aptitude to master this subject equally well. Learners who do not like Mathematics and do not do well in this subject are unlikely to choose a field of study or career where Mathematics is a prerequisite. However, it is a reality that Mathematics is a compulsory subject for a number of programmes at tertiary level, and that learners who do not take Mathematics, will therefore not be considered for such programmes. Learners usually find it easier to master the content of Mathematical Literacy compared to the content of Mathematics since Mathematical Literacy is designed to focus on application of mathematical principles and concepts in everyday life, e.g. calculating areas, volumes and circumferences, calculating profit and loss, drawing up a budget, etc.

Remember that for a learner, a pass mark in Mathematical Literacy is better than a failing mark in Mathematics. This should also be the point of departure when the learner, together with his or her parents, has to decide between these two subjects. Learners and parents are strongly advised to consider the recommendation by the school and the Mathematics teacher when making this decision.

**GUIDELINES:**

If your final Mathematics mark in Grade 9 is good, (60%+), take Mathematics. If your final Mathematics mark in Grade 9 is between 50% en 60%, think carefully about your future career plans before making the choice. If your final Grade 9 mark is below 50%, we STRONGLY recommend that you rather take Mathematical Literacy. The ideal solution would also be to, in the end, look at your final EXAM MARK, rather than the report mark. That will give you a good indication of your Mathematical abilities. If you are still unsure, talk to your Mathematics teacher. Learners and parents do not want to hear the following: Mathematics is a SKILLS subject in which a COMBINATION of VERY HARD WORK and also the NATURAL ABILITY to do it, is needed. Unfortunately, hard work alone or extra classes or private tutors will NOT HELP if you are not born with good Mathematical skills. This is similar to someone being born with the skill to be good in music, art or sport.

**Work hard at your Mathematics. Just like in sport, you have to PRACTICE and practice every day.**

# NOTES


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## **What can you study with Mathematical Literacy?**

### **Bachelor degrees:**

Nursing, Journalism, Psychology, Law, Management, Social work, Design: Visual art, Drama, Fashion Design, Multimedia, Somatology, Cosmetology, Sport, BEd – Education, Hotel and Catering, Tourism and many more.

### **National Diplomas:**

Radiography, Hospitality, Logistics, Marketing, Banking, Credit Controller, General Management.

### **Combination of subject choices:**

All subject choices available at Louis Trichardt High School offer university exemption (depending on the required average mark).

### **What has to be considered?**

- Aptitude
- Interests
- Expectations of learner (What does he/she want to become after school).

Your child needs to make important subject choices. Should you find it difficult to assist your child, please feel free to consult the principal or deputy principal at the school. Please keep in mind the following Departmental regulations in terms of subject changes in Grade 10, 11 and 12: In Grade 10 subjects changes are only allowed up to 31 May; in Grade 11 up to 31 March and in Grade 12 up to 31 January. The number of subjects to be changed, is also limited. This choice of subjects is therefore even more important.

In order for a subject to be taught, a minimum of 25 learners is required. An alternative subject must be chosen if the number of learners interested in a subject is too low. This rule does not apply to compulsory subjects.

### **The choice subjects that we offer:**

## BUSINESS STUDIES:

### Topics discussed:

Business environments and industries  
Socio-economic issues  
Social responsibilities  
Entrepreneurial qualities  
Forms of enterprise  
Creative thinking and business opportunities  
Business enterprises' sites and contracts  
Presentation of business information  
Self management and team achievements

### Skills of a Business studies student

- Analytical ability
- Interpretation and application skills
- Memorising skills

### Why is Business Studies a good choice?

It doesn't matter whether you want to start your own business one day or work for someone else, Business Studies provide you with enough information and knowledge to do both. Even if you become a qualified beauty therapist or an engineer, you should be able to run your own business.

### Possible careers

Enterprise management, Marketing, Human resources management, Public works, Entrepreneurial opportunities, Functional management.

**Choose Business Studies to teach you all about the world of business!**

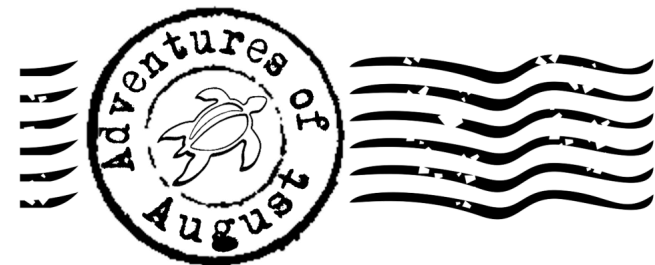
## TOURISM:

Tourism has been identified as a sector which can contribute significantly to economic development and job creation in South Africa. There is limited understanding amongst the youth as to what careers and job opportunities are available in Tourism. Historically, careers in Tourism have been understood to mean working for the airlines, car rental businesses, tour operators and travel agents.

Requirements - able to work with all kinds of people - good communication and organization skills - excellent knowledge of South Africa's places of interest, geography, its unique history, politics and flora and fauna - able to control groups of people and deal with unexpected situations.

Hospitality and hotel Industry: These make up a vastly diversified segment of the tourism Industry. Most hotels and resorts offer far more than just accommodation and the positions available can range from hotel management and front desk staff to house cleaning, food and beverage, catering and banquet staff, restaurant personnel and even grounds maintenance crews. Many resorts and hotels are part of a worldwide chain which can often afford an employee the ability to travel the world by transferring from one hotel location to another. The potential for job opportunities within the hospitality and hotel Industry is not only diversified but the chances for advancement are excellent.

Career choices can be found in its many different sectors that include: accommodation; attractions; food & beverage; transportation; adventure tourism; events & conferences; tourism services; and the travel trade.



## COMPUTER APPLICATIONS TECHNOLOGY:

In the last few decades, computers have become a normal part of life. They are used to send e-mails, write reports, manage our finances, or just to surf the internet. CAT is the study of the components of a computer system and how to use it to solve everyday problems. It will prepare you for life in the technological world. This is a very practical skills-based subject which will help you at university, college, and in the work place.

Computer Applications Technology aims at developing computing skills in the following packages: Word, Excel, Access, Explorer, Outlook and Power Point and basic HTML (webpage). Learners will be able to use the Internet, and understand the role that it plays, find relevant information, process it, make decisions, and learn how to use ICTs responsibly. A fairly high level of competency is expected.

If you enjoy working with computers and its many applications, then CAT is a good subject to take. The great advantage of this subject is that it provides skills that can be applied immediately in the classroom and the workplace. Like all matric subjects, CAT will require consistent application and hard work. CAT is a designated subject: this means that it can be used for determining university acceptance to university. CAT is also used in the calculation of Admission Points Scores (APS) at all universities and colleges.

## Curriculum

Solution Development  
Systems Technologies  
Network Technologies  
Internet Technologies  
Information Management  
Social Implications

## ECONOMICS:

### Topics discussed:

- Macro economics
- Micro economics
- Economic convictions
- Current economic issues

### Skills of an Economics student

- Reasoning ability
- Lateral thinking
- Holistic approach to science
- Sound knowledge of global matters
- Abstract thinking
- Lively interest in financial analyses

## POSSIBLE CAREERS

Banking, financing, Government administration, accounting careers, consumer analyst, economist and analyst.



## ACCOUNTING:

### Reasons why the subject is of importance:

It helps you as an individual with better insight into your own budget and management of your own financial matters. Accounting provides a better grasp of decisions made by management in the working environment. It helps to develop the following characteristics - ethical behaviour - sound judgement - thoroughness - orderliness - accuracy - neatness.

### Characteristics of an accounting student:

- Diligent
- Above average numeric ability
- Dedicated
- Organised

### Possible Careers:

- Accountant
- Auditor
- Banking
- Financial management
- Broker
- All BCom degrees



## ENGINEERING GRAPHICS AND DESIGN:

Engineering Graphics and Design (EGD) teaches internationally acknowledged principles that have both academic and technical applications. The emphasis in EGD is on teaching specific basic knowledge and various drawing techniques and skills so that the EGD learners will be able to interpret and produce drawings within the contexts of Mechanical Technology, Civil Technology and Electrical Technology. In the past, this subject was called Technical Drawing and was purely Mechanical Engineering based, but with the changing world and scope of education, the syllabus was changed to include Civil Drawing and Architecture which altered the scope of the subject dramatically and made it more relevant to a wider variety of future careers. Since the change, EGD has grown dramatically in numbers, both from the number of schools who have seen the merits of offering the subject, and in the number of pupils who choose EGD as a subject until Matric.

### The aims of this subject are to:

- Learn the design process
- Draw and interpret both Engineering and Architectural Drawings
- Learn complex manual drawing techniques
- Learn a variety of AutoCAD (Computer Aided Design) packages
- Complete complex design projects, looking at comparative research
- Time management skills

### Curriculum

General drawing principles for all technological drawings

Free-hand drawing

Instrument drawing

First- and third-angle orthographic projections

Descriptive and solid geometry

Mechanical working drawing

Civil working drawing

Isometric drawing

Perspective drawing

Electrical diagrams

Interpenetrations and developments

Loci of helixes, cams and mechanisms

The Design Process

CAD (Computer-Aided Drawing/Design)

## HOSPITALITY STUDIES:

Hospitality Studies prepares and trains aspiring individuals to work in the hospitality industry, predominantly in the Food and Drink Service, or Food Preparation and Cooking. Due to the practical nature of the subject you will be given various practical's which may include setting up a menu and preparing the food.

### Purpose

Hospitality orientates and prepares young people for a career in the hospitality industry, teaching them about cultural and other influences on South African cuisine, food purchasing, storage and control, managing resources, etc.

### Should I take this subject?

Opportunities for learners taking this subject are unlimited due to the great emphasis placed on entrepreneurship. Due to the practical nature of this subject a portion of the marks are allocated for practical assignments.

### Curriculum

- Hospitality sectors and careers
- Kitchen and restaurant options
- Nutrition and menu planning
- Food commodities
- Food and beverage services
- Health, safety and security



## PHYSICAL SCIENCES:

Physical sciences are concerned with the physical and chemical properties of objects, as opposed to the study of living things in the Life Sciences. We need to understand how the physical environment works so that we can benefit from it and care for it responsibly.

Indigenous knowledge which communities have held for generations has been the source of many new scientific developments. Disciplines of the physical sciences include astronomy, geosciences, mathematics, materials science, meteorology, physics and chemistry.

### Purpose

The Physical Sciences develop a range of skills, such as observing, measuring and comparing, designing and conducting experiments, interpreting and communicating results to an audience, using and applying knowledge and laws to everyday circumstances and unique situations.

### Should I take Physical Sciences?

If you are interested in Physics and Chemistry and you are good at Mathematics then take Physical Science. If you enjoy a challenge and you are considering entering a career in the engineering or scientific field, take Physical Science! Do not take Physical Science if you have no interest in Science, and you find it difficult to understand the concepts. If you find Mathematics difficult, then do not take Physical Science.

### Curriculum

Matter and Materials  
Chemical Systems  
Chemical Change  
Mechanics  
Waves, Sound and Light  
Electricity and Magnetism

### Careers

Engineering  
Information Technology  
Science and Mathematics  
Health Sciences

## LIFE SCIENCES:

'Life Sciences' is the scientific study of living things from a molecular level to their interactions with one another and their environments. To be accepted as a science, it is necessary to use certain methods for broadening existing knowledge, or discovering new things. These methods must lend themselves to replication and a systematic approach to scientific inquiry. The methods include formulating hypotheses and carrying out investigations and experiments as objectively as possible to test these hypotheses. Repeated investigations are carried out and adapted. The methods and results are analysed, evaluated and debated before the community of scientists accepts them as valid.

### Curriculum

The Cell and Cell Division

DNA, RNA and Genetics

Plant and Animal Tissues

The Skeletal, Muscular, Respiratory, Circulatory, Nervous, Digestive, Endocrine and Excretory Systems

Reproduction, Mutations, Cloning, Stem Cell Research, Fertility Treatments and Contraception

Viruses, Bacteria, Protista, Fungi etc.

## CAREER OPPORTUNITIES:

Medical (MBChD), Physiotherapy, Occupational therapy, Radiology, Speech therapist, Audiology, Sport Science, Veterinary / nursing, Somatology, Anthropology, Parasitology, Entomology, Agricultural Scientist, Botany and Zoology, Environmental studies, Nature conservation. Life Science is important to anyone who has a lively interest in the composition and interaction of nature and eco systems.

## GEOGRAPHY:

Geography is the study of Earth's landscapes, people, places and environments. Geography is unique because it links the social sciences (human geography) with the natural sciences (physical geography). Human geography investigates the activities and impact of people on earth, their cultures, societies and economies, and physical geography examines the natural processes and features, such as the atmosphere, landforms and ecosystems.

### Purpose

Geography helps you understand the basic physical systems that affect everyday life (e.g. earth-sun relationships, water cycles, winds and ocean currents). You find out where places are, and the physical and cultural characteristics of those places so that we can function more effectively in our increasingly interdependent world, and develop a commitment towards sustainable development.

### Curriculum

Map work

Resources and Management (soil, water, energy)

Climatology

Geomorphology

Settlement Geography

Bio-geography

Environmental management

Population geography

Development geography

Economic geography

Geographical information systems (GIS)

### Careers

Geography as a subject is related to a variety of careers. Here are a few related careers fields: Science and Maths, Social Sciences and Engineering.

Town planner, Geologist, Teaching, Tourism and Architect.