# IMPERIAL INTERNATIONAL COLLEGE
### Online Education for High School

## CAREER GUIDANCE REPORT
## PREPARED FOR:

# John Doe

Date: 20 June 2019

*"Education is the most powerful weapon
which you can use to change the world."*
Nelson Mandela

BROUGHT TO YOU BY:  Imperial International College In
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**THE CAREER GUIDANCE REPORT FOR:**
John Doe

Congratulations on taking ownership of your career journey, ensuring you are prepared for your future. The information contained in this report will assist you to select the right subjects, to pursue the most suitable tertiary qualification and career path.

**REPORT RESULTS OF THE EVALUATION EXERCISE:**

**1. YOUR PERSONALITY TYPE:**

| Your personality type: | Investigative (Thinker) |
|---|---|
| Personality description: | Investigative individuals are analytical, intellectual and observant and enjoy research, mathematical or scientific activities. They are drawn to ambiguous challenges and may be stifled in highly structured environments. People who fall into this category enjoy using logic and solving highly complex, abstract problems. Because they are introspective and focused on creative problem solving, investigative types often work autonomously and do not seek leadership roles. They place a high value on science and learning and perceive themselves as scholarly and having scientific or mathematical ability but lacking leadership and persuasive skills. The preferred work environment of the investigative type encourages scientific competencies, allows independent work and focuses on solving abstract, complex problems in original ways. |

**2. YOUR CAREER CLASSIFICATION:**

| Career classification: | Realistic |
|---|---|
| Person profile: | These people prefer to work with their hands, use tools, take care of animals or work outdoors. |
| Work environment: | Careers involving the principles of mechanics and physics. These people are likely to be technically orientated and practical. |

| Career classification: | Investigative |
|---|---|
| Person profile: | These people prefer to work on their own and in a research environment where they can observe, investigate, learn and try to find solutions to problems. |
| Work environment: | Careers involving ideas and scientific principles. They are likely to enjoy applying logic to solve problems. |

## 3. PREPARING FOR YOUR FUTURE

Making a career choice is one of the most important decisions you will ever have to make. This report and the Online Career Guidance tool will assist refine and focus your career search, by aligning the evaluation result to a specific career orientation classification. This information is not designed to be prescriptive, we encourage research into other career choices, which may have not been identified based on the results.

To make informed choices, use the information contained in your report as well as the toosl available on the Online Career Guidance website.

Now that you have completed this process you can go back to the website and look at all of the details about any job that they have listed in their database. Furthermore - you now have unlimited access to all of the extra tools available on their website.

## 4. CAREER OPPORTUNITIES

Based on your personality and career classifications, these are some potential career opportunities to consider:
- Job 1: Engineer - Instrumentation
- Job 2: IT Analyst Programmer
- Job 3: Engineer - Mechatronics
- Job 4: IT Artificial Intelligence Programmers

The following pages provide comprehensive details on each of the careers, to highlight the work environment, equipment used, the upside and downside of each job, possible employers as well as the required subjects for each of the recommended tertiary qualifications and institutions.

> *This interest and personality evaluation exercise was designed by Dr. Lee Conway, who has completed an MA in Clinical Psychology, as well as a D Litt et Phil. Dr. Conway has over 20 years in competency-based assessment and profiling, extensive experience in mentoring and coaching skills for scholars, students and the work force; as well as development of competency-based assessments and NQF standards-based competency assessment.*

**Job Title:  Engineer - Instrumentation**
**Career summary for:**

| | |
|---|---|
| **Job Title:** | Engineer - Instrumentation |
| **What is this job about?** | Instrumentation engineers are responsible for the installation, testing, designing, and maintenance of instruments used by industrial organisations, academic institutions and scientific laboratories. There are various types of fields an instrumentation engineer can specialise in. Mechanical instrumentation engineers work with equipment like thermometers, watches and odometers, while optical instrumentation engineers work with cameras, telescopes and spectroscopes. An electrical instrumentation engineer works with various gauges, voltmeters and ammeters. A medical instrumentation engineer designs and develops items such as pincers and scissors. Chemical instrumentation engineers develop instruments used by chemical engineers in particular. Instrumentation engineers are constantly researching improved techniques. Instrumentation engineers often travel to specific sites in order to implement new or improved designs. Designing usually involves drawing and building small three-dimensional models. |
| **The working environment:** | Indoors in well-equipped offices or laboratories in a modern, pleasant environment; out of doors implementing designs. |
| **What tools will I need for this job?** | Research material, books, computers, hand tools, power tools, testing equipment, materials used to build models. |
| **Upside of this job:** | Creating something that will improve technology; variety of fields of specialisation to choose from; being able to work with various people; won't get bored easily. |
| **Downside of this job:** | Having to work long hours; concentrating for long periods can become strenuous on your eyes. |
| **How can I find out more?** | Learn how to build scale models. Speak to an instrumentation engineer about his/her work and obtain as much information as possible. |
| **Career personality traits:** | Mechanical aptitude; patient and accurate; self-motivated; interest in designing and building models; good mathematical ability; able to work alone or as part of a team; willing to keep abreast of latest technological advances. |
| **Other related job choices:** | Electrical engineer, mechanical engineer, aeronautical engineer. |
| **Possible employers:** | Government departments, educational institutions, instrument manufacturing companies, medical institutions, electrical institutions. |
| **Top companies to work for:** | Adcock Ingram |

| | Afrox |
| --- | --- |
| | ArcelorMittal |
| | Aveng Trident Steel |
| | Mediclinic |
| | Pfizer |
| | Universities |

## Tertiary qualification and subject choice selection options for the career of a: Engineer - Instrumentation

| | |
|---|---|
| **Tertiary institution:** | University of Stellenbosch (SUN) |
| **Type of qualification:** | Bachelor Engineering Degree |
| **Tertiary qualification:** | BEng - Electrical and Electronic |
| **Length of study:** | 4 years |
| **Faculty** | Engineering |
| **Institution website:** | www.sun.ac.za |
| **Grade 10 subject choice selection recommendation for this qualification** <br><br> (you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics,Physical Sciences <br><br> Choose 1: Any other 2 subjects |

**Job Title:  IT Analyst Programmer**
**Career summary for:**

| | |
|---|---|
| **Job Title:** | IT Analyst Programmer |
| **What is this job about?** | Analyst programmers are responsible for analysing current systems and enhancing them with the necessary programming skills.  Analyst programmers change the "look" of a software programme. They do analytical design evaluations and investigate the possible changes that could be made to the applicable software programme, varying from cosmetic changes such as adding different colours to identify the status of certain data, to making changes to the flow of the information. Cosmetic changes can be seen by the users of such an application, whereas changes to the flow of information cannot be seen by the users, but enhance the speed and accuracy of the software programme. Analyst programmers are responsible for reporting on the changes made to software programs by adding different version numbers to track them. |
| **The working environment:** | Comfortable offices, training and conference facilities as well as meeting rooms. |
| **What tools will I need for this job?** | Computer, Internet and e-mail connectivity, development software and tools, report writing programs, software manuals, newsletters, source code and related dictionaries. |
| **Upside of this job:** | Intellectually challenging; daily advancements of the software provides satisfaction, especially when there is positive feedback from the users. |
| **Downside of this job:** | Sitting for long hours in front of a computer could be strenuous on your back and eyes; concentrating for hours at a time can be exhausting. |
| **How can I find out more?** | Learn more about programming with multimedia kits, the Internet and books. Try writing small programs in a basic<br><br>programming language with the help of a manual. |
| **Career personality traits:** | Analytical thinker; accurate and systematic worker; interest in computer systems; technically minded; problem-solver; innovative thinker; able to concentrate for long periods of time. |
| **Other related job choices:** | Software developer, website designer, systems analyst. |
| **Possible employers:** | IT software development companies or any other company that develop their own in-house applications. |
| **Top companies to work for:** | ABSA/Barclays |

| | |
|---|---|
| | Bytes Technology |
| | Dimension Data |
| | First National Bank |
| | Gijima AST |
| | Hetzner |
| | IBM |
| | Nedbank Group |
| | Nedbank Group |
| | Microsoft |
| | Standard Bank |

## Tertiary qualification and subject choice selection options for the career of a: IT Analyst Programmer

| | |
|---|---|
| **Tertiary institution:** | Nelson Mandela Metropolitan University (NMMU) |
| **Type of qualification:** | Bachelor Commerce Degree |
| **Tertiary qualification:** | BCom - Information Systems |
| **Length of study:** | 3 years |
| **Faculty** | Business and Economic Sciences |
| **Institution website:** | www.nmmu.ac.za |
| **Grade 10 subject choice selection recommendation for this qualification** <br><br> (you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics <br><br> Choose 1: Recommend Information Technology <br><br> Choose 1: Any other 2 subjects |

| | |
|---|---|
| **Tertiary institution:** | North-West University (NWU) |
| **Type of qualification:** | Bachelor Commerce Degree |
| **Tertiary qualification:** | BCom - Information Systems |
| **Length of study:** | 4 years |
| **Faculty** | Economic and Management Science |
| **Institution website:** | www.nwu.ac.za |
| **Grade 10 subject choice selection recommendation for this qualification** <br><br> (you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics <br><br> Choose 1: Recommend Information Technology <br><br> Choose 1: Any other 2 subjects |

| | |
|---|---|
| **Tertiary institution:** | Pearson Institute of Higher Education (formerly Midrand Graduate Institute) |
| **Type of qualification:** | Bachelor Science Degree |
| **Tertiary qualification:** | BSc - Informatics |
| **Length of study:** | 3 years |
| **Faculty** | Applied Science |
| **Institution website:** | www.pihe.ac.za |
| **Grade 10 subject choice** | Compulsory: Home Language,First Additional Language,Life |

| | |
|---|---|
| **selection recommendation for this qualification**<br><br>(you will need all the compulsory subjects and one subject from each subject group): | Orientation,Mathematics<br><br>Choose 1: Any other 3 subjects |

| | |
|---|---|
| **Tertiary institution:** | University of Cape Town (UCT) |
| **Type of qualification:** | Bachelor Business Science Degree |
| **Tertiary qualification:** | BBusSc - Computer Science Analytics |
| **Length of study:** | 4 years |
| **Faculty** | Commerce |
| **Institution website:** | www.uct.ac.za |
| **Grade 10 subject choice selection recommendation for this qualification**<br><br>(you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics<br><br>Choose 1: Recommend Information Technology<br><br>Choose 1: Any other 2 subjects |

| | |
|---|---|
| **Tertiary institution:** | University of Cape Town (UCT) |
| **Type of qualification:** | Bachelor Commerce Degree |
| **Tertiary qualification:** | BCom - Information Systems |
| **Length of study:** | 3 years |
| **Faculty** | Commerce |
| **Institution website:** | www.uct.ac.za |
| **Grade 10 subject choice selection recommendation for this qualification**<br><br>(you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics<br><br>Choose 1: Recommend Information Technology<br><br>Choose 1: Any other 2 subjects |

| | |
|---|---|
| **Tertiary institution:** | University of Fort Hare (UFH) |
| **Type of qualification:** | Bachelor Commerce Degree |
| **Tertiary qualification:** | BCom - Information Systems |
| **Length of study:** | 3 years |
| **Faculty** | Management and Commerce |
| **Institution website:** | www.ufh.ac.za |

| Grade 10 subject choice selection recommendation for this qualification<br><br>(you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics<br><br>Choose 1: Recommend Information Technology<br><br>Choose 1: Any other 2 subjects |
|---|---|

| Tertiary institution: | University of Johannesburg |
|---|---|
| Type of qualification: | Bachelor Commerce Degree |
| Tertiary qualification: | BCom - Information Systems |
| Length of study: | 3 years |
| Faculty | Management |
| Institution website: | www.uj.ac.za |
| Grade 10 subject choice selection recommendation for this qualification<br><br>(you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics<br><br>Choose 1: Recommend Information Technology<br><br>Choose 1: Any other 2 subjects |

| Tertiary institution: | University of Johannesburg |
|---|---|
| Type of qualification: | Bachelor Science Degree |
| Tertiary qualification: | BSc - Mathematical Statistics and Computer Science |
| Length of study: | 3 years |
| Faculty | Science |
| Institution website: | www.uj.ac.za |
| Grade 10 subject choice selection recommendation for this qualification<br><br>(you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics<br><br>Choose 1: Recommend Information Technology<br><br>Choose 1: Any other 2 subjects |

| Tertiary institution: | University of South African (UNISA) |
|---|---|
| Type of qualification: | Bachelor Science Degree |
| Tertiary qualification: | BSc - Informatics |
| Length of study: | 3 years |
| Faculty | Science, Engineering and Technology |

| | |
|---|---|
| **Institution website:** | www.unisa.ac.za |
| **Grade 10 subject choice selection recommendation for this qualification**<br><br>(you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics<br><br>Choose 1: Any other 3 subjects |

| | |
|---|---|
| **Tertiary institution:** | University of Witwatersrand (Wits) |
| **Type of qualification:** | Bachelor Commerce Degree |
| **Tertiary qualification:** | BCom - Information Systems |
| **Length of study:** | 3 years |
| **Faculty** | Commerce, Law and Management |
| **Institution website:** | www.wits.ac.za |
| **Grade 10 subject choice selection recommendation for this qualification**<br><br>(you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics<br><br>Choose 1: Recommend Information Technology<br><br>Choose 1: Any other 2 subjects |

## Job Title:  Engineer - Mechatronics
## Career summary for:

| | |
|---|---|
| **Job Title:** | Engineer - Mechatronics |
| **What is this job about?** | Mechatronics is a multidisciplinary field of engineering that includes a combination of systems engineering, precision mechanical engineering, electrical engineering, telecommunications engineering, control engineering and computer engineering.  Mechatronic engineering is an interdisciplinary engineering field that specialises in the control of advanced hybrid systems.  Originally, mechatronics just included the combination of mechanics and electronics, hence the word is a combination of mechanics and electronics; however, as technical systems have become more and more complex the word has been broadened to include more technical areas.  An emerging variant of this field is biomechatronics, whose purpose is to integrate mechanical parts with a human being, usually in the form of removable gadgets such as an exoskeleton.  There is almost no product in the world that is solely electronic, electrical or mechanical in nature. This means that the lines between each discipline are becoming increasingly blurred, and there is a growing demand for engineers whose knowledge is strong across all of these areas. |
| **The working environment:** | Mechatronical engineers work in a variety of settings. They work indoors in plants, offices, lecture-rooms and laboratories.  Some Mechatronic Engineers may be required to travel, especially those involved in new product development. Some work settings may be very noisy. |
| **What tools will I need for this job?** | Power producing and power using machines, computers, graphs, statistics and reports, drawings and layouts, testing and analysing equipment. |
| **Upside of this job:** | Solving problems; challenge and variety of the work; many areas of specialisation; good salaries and advancement opportunities. |
| **Downside of this job:** | Having to work long hours to finish a project; long period of preparation and study required to register as a professional engineer; keeping up with the latest technological advances in your field. |
| **How can I find out more?** | Look for part-time or vacation work in electronics, construction or in manufacturing.  Take up hobbies through which you can learn more about mechanics.  Read widely and work on your computer skills. |
| **Career personality traits:** | Good decision-maker; creative and analytical mind; innovative and resourceful; aptitude and preference for research, experimenting and planning; mathematical ability and mechanical aptitude; able to communicate effectively and work well with others; meticulously accurate in calculations and drawings. |

| | |
|---|---|
| **Other related job choices:** | Aeronautical engineer, civil engineer, electrical engineer, industrial engineer, mechanical engineering technician, mining engineer, instrument engineer. |
| **Possible employers:** | Manufacturing industries, government departments, research institutes/organisations, mining companies, consulting engineering firms, educational institutions (lecturers, researchers). |
| **Top companies to work for:** | Anglo American<br><br>Coca-Cola Beverages Africa (CCBA)<br><br>Denel<br><br>BMW<br><br>Siemens |

## Tertiary qualification and subject choice selection options for the career of a: Engineer - Mechatronics

| | |
|---|---|
| **Tertiary institution:** | Nelson Mandela Metropolitan University (NMMU) |
| **Type of qualification:** | Bachelor Engineering Degree |
| **Tertiary qualification:** | BEng - Mechatronics |
| **Length of study:** | 4 years |
| **Faculty** | Engineering, Built Environment and Information Technology |
| **Institution website:** | www.nmmu.ac.za |
| **Grade 10 subject choice selection recommendation for this qualification** <br><br> (you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics,Physical Sciences <br><br> Choose 1: Any other 2 subjects |

| | |
|---|---|
| **Tertiary institution:** | University of Stellenbosch (SUN) |
| **Type of qualification:** | Bachelor Engineering Degree |
| **Tertiary qualification:** | BEng - Mechatronics |
| **Length of study:** | 4 years |
| **Faculty** | Engineering |
| **Institution website:** | www.sun.ac.za |
| **Grade 10 subject choice selection recommendation for this qualification** <br><br> (you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics,Physical Sciences <br><br> Choose 1: Any other 2 subjects |

| | |
|---|---|
| **Tertiary institution:** | University of Cape Town (UCT) |
| **Type of qualification:** | Bachelor Science Degree |
| **Tertiary qualification:** | BSc - Engineering: Electrical, Electrical and Computer and Mechatronic Engineering |
| **Length of study:** | 4 years |
| **Faculty** | Engineering and the Built Environment |
| **Institution website:** | www.uct.ac.za |
| **Grade 10 subject choice** | Compulsory: Home Language,First Additional Language,Life |

| | |
|---|---|
| **selection recommendation for this qualification**<br><br>(you will need all the compulsory subjects and one subject from each subject group): | Orientation,Mathematics,Physical Sciences<br><br>Choose 1: Any other 2 subjects |

Orientation,Mathematics,Physical Sciences

Choose 1: Any other 2 subjects

**Job Title:  IT Artificial Intelligence Programmers**
**Career summary for:**

| Job Title: | IT Artificial Intelligence Programmers |
|---|---|
| **What is this job about?** | Artificial Intelligence (AI) programmers create computer systems that enable computers to do things that actually require a human mind - e.g. a computer playing chess against a human being. Their systems need to make decisions, recognise patterns and operate robotic systems. Artificial intelligence is a field involving many disciplines such as computer science, philosophy, linguistics as well as psychology. Practical application work is usually done to test new technologies and to create new products. Artificial intelligence programmers research and then create systems to demonstrate their theories and solve practical problems. As part of their research when designing systems, AI programmers will often interview experts such as doctors or mechanics, to try and understand their thought processes for diagnosing various problems in their specific fields of expertise. The types of systems they design are used for various functions such as systems that schedule freight shipments and check credit criteria to systems that are capable of diagnosing diseases. Many AI systems have been tried and tested, but the most successful seems to be expert systems and neural systems. An expert system is capable of "knowing" many things before a programmer starts working with it, whereas a neural system knows very little at the start of programming. |
| **The working environment:** | Work takes place predominantly in university laboratories or in large corporations who have their own research labs. They might freelance as consultants. |
| **What tools will I need for this job?** | Computers, research material, robotics, networks, systems, computer science software applications. |
| **Upside of this job:** | Highly intellectual, interesting, challenging and stimulating career; with a good reputation, you can become self-employed; prospect of excellent remuneration; satisfaction of a system that works. |
| **Downside of this job:** | Long hours; mentally demanding; many years study; pressure to come up with a system that works; sometimes employers decide to terminate research due to lack of funds or changed priorities. |
| **How can I find out more?** | Take courses in psychology, linguistics, anthropology or philosophy to understand the background of the study of intelligence. Study AI applications such as game playing programs and robots. Do research on how AI is being used by large corporations either in computer publications or on the Internet. |
| **Career personality traits:** | Analytical thinker; accurate and systematic worker; interest in computer systems; technically minded; problem-solver; innovative |

| | thinker; able to concentrate for long periods of time. |
|---|---|
| **Other related job choices:** | Knowledge engineer, expert system designer, robotics engineer, computer science lecturer, computer hardware designer, scientific/engineering programmer. |
| **Possible employers:** | Robot manufacturing companies, government departments, research laboratories, university laboratories, large vehicle corporations. |
| **Top companies to work for:** | ABSA/Barclays<br><br>Bytes Technology<br><br>Dimension Data<br><br>First National Bank<br><br>Gijima AST<br><br>Hetzner<br><br>IBM<br><br>Nedbank Group<br><br>Nedbank Group<br><br>Microsoft<br><br>Standard Bank |

# Tertiary qualification and subject choice selection options for the career of a: IT Artificial Intelligence Programmers

| | |
|---|---|
| **Tertiary institution:** | Belgium Campus |
| **Type of qualification:** | Bachelor Degree |
| **Tertiary qualification:** | B - Computing:  Business Intelligence/Software Engineering |
| **Length of study:** | 4 years |
| **Faculty** | |
| **Institution website:** | www.belgiumcampus.co.za |
| **Grade 10 subject choice selection recommendation for this qualification**<br><br>(you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics<br><br>Choose 1: Any other 3 subjects |

| | |
|---|---|
| **Tertiary institution:** | University of South African (UNISA) |
| **Type of qualification:** | Bachelor Science Degree |
| **Tertiary qualification:** | BSc - Chemistry and Computer Science |
| **Length of study:** | 3 years |
| **Faculty** | Science, Engineering and Technology |
| **Institution website:** | www.unisa.ac.za |
| **Grade 10 subject choice selection recommendation for this qualification**<br><br>(you will need all the compulsory subjects and one subject from each subject group): | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics,Physical Sciences<br><br>Choose 1: Any other 2 subjects |

| | |
|---|---|
| **Tertiary institution:** | University of Zululand (UNIZULU) |
| **Type of qualification:** | Bachelor Science Degree |
| **Tertiary qualification:** | BSc - Chemistry and Computer Science |
| **Length of study:** | 3 years |
| **Faculty** | Science and Agriculture |
| **Institution website:** | www.unizulu.ac.za |
| **Grade 10 subject choice selection recommendation for** | Compulsory: Home Language,First Additional Language,Life Orientation,Mathematics,Physical Sciences |

| | |
|---|---|
| **this qualification**<br><br>(you will need all the compulsory subjects and one subject from each subject group): | Choose 1: Any other 2 subjects |
| **this qualification**<br><br>(you will need all the compulsory subjects and one subject from each subject group): | Choose 1: Any other 2 subjects |