

Qualification Guide – Software Developer

Welcome as a learner in the Occupational Certificate: Software Developer. You are well on your journey towards a fulfilling learning experience.

1. Duration

This qualification can be attained within 20 months.

2. Method

This qualification can be completed either via Distance learning or Full-Time. Distance learning offers learners the ability to complete the qualification in their own time, making learning material available via our online portal.

Full-time learners attend classes at our Centurion campus and have access to our online portal

3. Accreditation

Occupational Certificate: Software Developer is registered on the SAQA database at NQF Level 5. It is accredited by the Quality Council for Trades & Occupations [QCTO]. Thus, upon successful completion of this program, you will receive an accredited Occupational Certificate: Software Developer NQF Level 5.

4. Further your studies

Learners who have successfully attained this qualification will receive automatic access to the Occupational Certificate: Software Engineer NQF Level 6.

5. Entry Requirements

- A grade 12 certificate.
- An equivalent NQF Level 4 qualification.

6. Hardware & Software Requirements

After the successful payment of the registration fee, you will receive a laptop with all the required software pre-installed, ready to be used for your learning journey. This laptop belongs to you, even after you have completed your studies.

Alternatively, learners can provide their own laptop, given the following specifications are met, and subject to approval by HJN Training:

- Core i7 Processor
- 16GB DDR4 RAM
- 500GB Hard drive
- Windows 11 Operating System.

Internet access will be provided for full-time students at the Centurion campus. Distance & Full-time learners are required to have internet access when studying remotely, and to be able to access the online portal off-campus.

Learners enrolled for Distance learning must have access to the internet with a minimum speed of 2.5 Mbps. If a learner does not have access to the internet, an enquiry can be made with HJN Training for recommendations.

7. Cost

The following is a breakdown of all the costs for this qualification:

7.1 Tuition Fees

The total cost for this qualification is R60 000 (Distance and Full-Time) for 20 months, or R55 000 for 20 months, for learners who provide their own laptop (see heading 6).

7.2 Registration Fees

Registration Fee (with new laptop): R8000; or

R3000 for learners who have access to their own laptop for use during their studies, with at least the minimum specifications (see heading 6).

7.3 Payments Structure

- **With new laptop** – After the registration fee of R8000 is paid, an advanced monthly fee of R2600 can be paid over 20 months.
- **Students with their own laptop** – After the registration fee of R3000 is paid, an advanced monthly fee of R2600 can be paid over 20 months.
- Please contact our office or send a request via our website hjntraining.co.za, for more information.

7.4 Examination Fee (At extra cost)

Examination fees – R200.00 per module per learner AND

Re-examination fees – R500.00 per module per learner.

To be paid May or October.

8. Assessment

The qualification requires learners to conduct formative, summative, and practical assessments.

- Formative assessments (assignments) must be submitted, and they are found competent to qualify for examination.
- Summative assessments (assignments) must be submitted and found competent.
- Examinations will be every six months (6) June or October.

- Formative assessment

Each learner must submit an assignment (formative assessment) for each module.

- Summative assessment

Each learner must do a summative assessment (examination) for each module (during June or October).

- Examination

Each learner must do an examination for each module (during June or October).

9. Workplace Experience

In addition, the qualification requires learners to obtain workplace experience in the form of practical on the job training related to software development knowledge obtained during the learning process, with an assigned mentor overseeing off-site on-the-job training. A workplace can be recommended by HJN Training, or a valid institution can be sourced by the learner him-herself (pending prior verification from HJN Training).

10. How to enroll

Complete the enclosed registration form and attach the following documents:

- A copy of your ID/Passport
- Copy of your latest qualifications
- Proof of registration payment
- Proof of deposit payment
- Email all above documents to headoffice@hjntesting.co.za

11. How to pay your fees:

Please make use of the specified banking details which is applicable to you and email your proof of payment to headoffice@hjntesting.co.za. To get these bank details you would have to contact our head office @ 0860 995 220.

12. Qualification Content

Below is an outline of all modules and unit standards you will learn in this qualification:

OCCUPATIONAL CERTIFICATE: SOFTWARE DEVELOPER, SAQA ID 118707, TOTAL CREDITS 220

12.1 KNOWLEDGE MODULES / SUBJECTS

	MODULE		ID	UNIT STANDARD TITLE	LEVEL	CREDITS
1.	MODULE 1 COMPUTERS AND COMPUTING SYSTEMS	Core	251201-005- 00-KM-01		Level 4	12
			KM-01-KT01	Problem solving skills for IT Professionals		
			KM-01-KT02	Techniques for safety		
			KM-01-KT03	System components		
			KM-01-KT04	Motherboards		
			KM-01-KT05	Processors		
			KM-01-KT06	Memory		
			KM-01-KT07	BIOS and CMOS		
			KM-01-KT08	Hard drives and storage devices		
			KM-01-KT09	Power supplies and voltage		
			KM-01-KT10	Ports, cables, and connectors		
			KM-01-KT11	Networking and network operating systems		
			KM-01-KT12	Networking and wireless connections		
			KM-01-KT13	Input and output devices		

			KM-01-KT14	Installing and managing printers		
			KM-01-KT15	Mobile devices, multimedia, and laptop computers		
			KM-01-KT16	Preventative maintenance		
			KM-01-KT17	Troubleshooting procedures		
			KM-01-KT18	Operating systems		
			KM-01-KT19	Managing files		
			KM-01-KT20	Applications utility, troubleshooting, and optimization		
			KM-01-KT21	Configuring device drivers		
			KM-01-KT22	Recovery		
			KM-01-KT23	Cloud computing		
			KM-01-KT24	Security fundamentals		
			KM-01-KT25	Programming and development		
2.	MODULE 2 DESKTOP AND PROFESIONAL SOFTWARE TO COMMUNICATE AND VISUALIZE INFORMATION.	Core	251201-005- 00-KM-02		Level 4	8
			KM-02-KT01	Electronic Communication		
			KM-02-KT02	Software Apps for office use		
			KM-02-KT03	Operating a software package		
			KM-02-KT04	Text documents using an appropriate software package		
			KM-02-KT05	Presentations using and appropriate software package		
3.	MODULE 3 AUTOMATED WEBSCRAPING AS A DATASOURCE	Core	251201-005- 00-KM-03		Level 4	8
			KM-03-KT01	Sources of data		
			KM-03-KT02	Web scraping and access to accurate data		
			KM-03-KT03	Big Data		
			KM-03-KT04	Data quality		
			KM-03-KT05	Best practices for data governance		
			KM-03-KT06	Legislation (e.g. POPI Act)		
			KM-03-KT07	Wrangling		
			KM-03-KT08	Data structures		
4.	MODULE 4 LOGICAL THINKING AND BASIC CALCULATIONS	Core	251201-005- 00-KM-04		Level 4	2

			KM-04-KT01	Mathematical thinking skills for problem solving		
			KM-04-KT02	Conversion between decimal and binary systems		
			KM-04-KT03	Expressing size and magnitude		
			KM-04-KT04	Error in calculations		
			KM-04-KT05	Cartesian coordinate system		
			KM-04-KT06	Pythagorean theorem for finding the distance between two points		
			KM-04-KT07	Operator precedence		
			KM-04-KT08	Integer division		
			KM-04-KT09	Modulus		
			KM-04-KT10	Increments		
5.	MODULE 5 COMPUTING THEORY	Core	251201-005-00-KM-05		Level 4	2
			KM-05-KT01	Introduction to programming languages		
			KM-05-KT02	Programming basics		
			KM-05-KT03	Software applications		
6.	MODULE 6 SOFTWARE DEVELOPMENT WITH HTML5, OPENSOURCE FRAMEWORKS AND LIBRARIES	Core	251201-005-00-KM-06		Level 5	16
			KM-06-KT01	Core programming		
			KM-06-KT02	Object-Oriented Programming		
			KM-06-KT03	General Software Development		
			KM-06-KT04	Web applications		
			KM-06-KT05	Applications development		
			KM-06-KT06	HTML5		
			KM-06-KT07	CSS		
			KM-06-KT08	JavaScript		
7.	MODULE 7 UML AS STANDARD MODELLING LANGUAGE FOR SOFTWARE AND SYSTEMS DEVELOPMENT	Core	251201-005-00-KM-07		Level 5	4
			KM-07-KT01	Introduction		

			KM-07-KT02	Modelling requirements		
			KM-07-KT03	Workflows: activity diagrams		
			KM-07-KT04	Classes and class diagrams		
			KM-07-KT05	Advanced class diagrams		
			KM-07-KT06	Object diagrams		
			KM-07-KT07	Sequence diagrams		
			KM-07-KT08	Communication diagrams		
			KM-07-KT09	Timing diagrams		
			KM-07-KT10	Interaction overview diagrams		
			KM-07-KT11	Classes internal structure: composite structures		
			KM-07-KT12	Component diagrams		
			KM-07-KT13	Packages		
			KM-07-KT14	State machine diagrams		
			KM-07-KT15	Deployed diagrams		
8.	MODULE 8 OBTAINING, QUERYING, MANIPULATING AND PRESENTING DATA WITH AND WITHOUT MVC	Core	251201-005- 00-KM-08		Level 5	6
			KM-08-KT01	Understanding core database concepts		
			KM-08-KT02	Creating database		
			KM-08-KT03	Manipulating data		
			KM-08-KT04	Understanding Data		
			KM-08-KT05	Administering a database		
9.	MODULE 9 SOFTWARE DEVELOPMENT LIFE CYCLE, PROGRAMMING LANGUAGES, ALGORITHMS AND SECURITY	Core	251201-005- 00-KM-09		Level 5	3
			KM-09-KT01	Introduction to software development		
			KM-09-KT02	Software Development Life Cycle		
			KM-09-KT03	The need for a solution		
			KM-09-KT04	Popular SDLC models		
			KM-09-KT05	Phase 1: Requirement collection and analysis		
			KM-09-KT06	Phase 2: Feasibility study		
			KM-09-KT07	Phase 3: Design		
			KM-09-KT08	Phase 4: Coding		
			KM-09-KT09	Phase 5: Testing		
			KM-09-KT10	Phase 6: Installation/Deployment		
			KM-09-KT11	Phase 7: Maintenance		

			KM-09-KT12	Software development logging and commenting		
			KM-09-KT13	Programming and programming languages		
			KM-09-KT14	Coding		
			KM-09-KT15	Overview of algorithms in information technology		
			KM-09-KT16	Algorithms		
			KM-09-KT17	Programming language concepts and terminology		
			KM-09-KT18	Security topics every software developer must know		
			KM-09-KT19	Machine learning		
10.	MODULE 10 INTRODUCTION TO SOFTWARE DEVELOPER GOVERNANCE, LEGISLATION AND ETHICS	Core	251201-005-00-KM-10		Level 4	2
			KM-10-KT01	Governance		
			KM-10-KT02	Legislation governing workplaces		
			KM-10-KT03	Introduction to ethics and security		
			KM-10-KT04	Ethics at work		
			KM-10-KT05	Security		
			KM-10-KT06	Performance management		
			KM-10-KT07	Business planning		
			KM-10-KT08	Costing of products		
			KM-10-KT09	Resources		
11.	MODULE 11 4IR AND FUTURE SKILLS	Core	251201-005-00-KM-11		Level 4	2
			KM-11-KT01	4 IR emerging trends		
			KM-11-KT02	Computing Knowledge		
			KM-11-KT03	Future skills and competencies (4IR)		
			KM-11-KT04	4 IR trends affecting businesses		
			KM-11-KT05	Interpersonal skills		
			KM-11-KT06	Interpersonal skills		
			KM-11-KT07	Communication principles and methods		
			KM-11-KT08	Written business communication		
			KM-11-KT09	Presentation skills		
			KM-11-KT10	Teamwork in the workplace		
			KM-11-KT11	Committees and meetings		
			KM-11-KT12	Job descriptions and profiles		
			KM-11-KT13	Customers and stakeholders		
			KM-11-KT14	Customer service		
12.	MODULE 12 DESIGN THINKING PRINCIPLES FOR	Core	251201-005-00-KM-12		Level 4	1

	INNOVATION				
			KM-12-KT01	Introduction to design thinking	
			KM-12-KT02	The human element	
			KM-12-KT03	Creativity	
			KM-12-KT04	Innovation	
			KM-12-KT05	Design	
			KM-12-KT06	Design thinking methodology	
			KM-12-KT07	Application of design thinking	

12.2 PRACTICAL SKILLS MODULES / ASSIGNMENTS

ID	TITLE	LEVEL	CREDITS
251201-005-00-PM-01	Use Software to Communicate and Visualise Information	4	3
251201-005-00-PM-02	Use and Manage Spreadsheets and Workbooks	4	3
251201-005-00-PM-03	Use Desktop Applications to Analyse, Visualise and report on Data	5	3
251201-005-00-PM-04	Use a Visual Analytics Platform and Visualisation Tools to Analyse, Visualise and report on Data	5	3
251201-005-00-PM-05	Query and Massage Data	5	3
251201-005-00-PM-06	Apply Logical Thinking and Maths	4	3
251201-005-00-PM-07	Apply Code to use a Software Toolkit/Platform in the Field of Study or Employment	5	3
251201-005-00-PM-08	Develop Software using HTML5, Opensource Frameworks and Libraries	5	16
251201-005-00-PM-09	Design and Build Web Applications, Desktop Graphical User Interfaces or Mobile Apps	5	8
251201-005-00-PM-10	Use a Cloud Automation Platform to Create Solutions	4	8
251201-005-00-PM-11	Develop Software using Python	5	12
251201-005-00-PM-12	Apply the Development Cycle when Developing Software	5	16
251201-005-00-PM-13	Participate in a Design Thinking for Innovation Workshop	4	4
251201-005-00-PM-14	Function Ethically and Effectively in a Team	4	4

12.3 WORK EXPERIENCE MODULES

ID	TITLE	LEVEL	CREDITS
251201-005-00-WM-01	Technical Requirement Analysis and Refinement	4	15
251201-005-	Modelling Processes	4	15

00-WM-02			
251201-005-00-WM-03	Programming for Software Solution Development	5	25
251201-005-00-WM-04	Capstone Project	5	10

Based on our extensive hands-on software development experience, we are committed to ensuring that you start and make great strides in the field of Software Development within the ICT industry. Welcome to HJN Training, should you need any more information please do not hesitate to call us on 078 177 4023 / 0860 995 220.

Thank you



Juandré Michau
Member
HJN TRAINING



P.O. Box 52085, Wierda Park 0149
 Tel: 0860 995 220
 Mobile: 078 177 4023
 E-mail: headoffice@hjntraining.co.za

REGISTRATION FORM

SECTION 1: PERSONAL DETAILS

First Name: _____ Surname: _____
 ID Number: _____ **(ID COPY TO BE ATTACHED)**
 Race: White: African: Coloured:
 Gender: Male: Female: Indian: Home Language: _____
 Highest qualification attained: _____ Signature: _____

SECTION 2: COMMUNICATION DETAILS

Work no: _____ Home no: _____
 Cell no: _____ Fax no: _____
 E-mail: _____

Postal address – for all correspondence: _____

Code: _____
 Employer Name: _____ Contact no: _____
 Employer Address: _____ Suburb: _____

SECTION 3: PROGRAM DETAILS: Please indicate with a √ the qualification you are registering for:

!!!! REGISTRATION FEE IS NOT REFUNDABLE!!!!

<u>QUALIFICATIONS</u>	<u>NQF LEVEL</u>	<u>TERM</u>	<u>Full-Time</u> <u>Distance</u>	
			√	√
• Occupational Certificate: Software Engineer	6	24 Months or Distance	<input type="checkbox"/>	<input type="checkbox"/>
• Occupational Certificate: Software Developer	5	20 Months or Distance	<input type="checkbox"/>	<input type="checkbox"/>
• Occupational Certificate: Artificial Intelligence Software Developer	5	18 Months or Distance	<input type="checkbox"/>	<input type="checkbox"/>

SIGNATURE OF LEARNER: _____ Date: _____