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 **Memorandum from the Parliamentary Office**

**NATIONAL ASSEMBLY**

**FOR WRITTEN REPLY**

**QUESTION 3506**

**DATE OF PUBLICATION OF INTERNAL QUESTION PAPER: 16/11/2018**

**(INTERNAL QUESTION PAPER NO 41 OF 2018)**

**Ms N P Sonti (EFF) to ask the Minister of Higher Education and Training:**

What (a) number of institutions of higher learning offer coding and software development as courses and (b) is the total student capacity in each case?

**NW4080E**

**REPLY:**

(a) - (b) Sixteen universities responded to the question posed and provided the following information:

| **University** | **(a) Coding** | **(b) Number of students** | **(a) Software development** | **(b) Number of students** |
| --- | --- | --- | --- | --- |
| Cape Peninsula University of Technology | Programming 1 | 360 | Application (App) Development Foundation 1 | 260 |
| Data Structures  | 40 | App Development Fundamentals 2 | 210 |
| Functional Programming  | 20 | App Development Practice 2 | 140 |
|  | Multimedia technologies | 30 |
| Android App Development | 40 |
| Web Development with Angular | 40 |
| App Development Practice 3  | 80 |
| Multimedia Technologies 3 | 30 |
| Development Software 4 | 70 |
| University of Cape Town | Information Systems I  | 803 | The modules include aspects of both Coding and Software Development. |
| Commercial Programming | 81 |
| IT in Business | 597 |
|  | Business Intelligence and Analytics | 126 |
| Applying Database Principles | 66 |
| IT Architecture | 50 |  |
| Systems Design and Development | 111 | The modules include aspects of both Coding and Software Development. |
| Systems Development Project | 43 |
| IT Applications | 80 |
| Enterprise Systems and BPM | 31 |
|  | Information Systems CW | 32 |
| Business and Systems Analysis  | 21 |
| Application and Technical Development | 45 |
| Systems Development Project II | 41 | The modules include aspects of both Coding and Software Development. |
| Computer Science 1015 | 591 |
| Computer Science 1016 | 475 |
| Computer Science 2001 | 289 |
| Computer Science 2002 | 260 |
| Computer Science 3002 | 164 |
| Computer Science 3003 | 147 |
| Computer Science Honours | 41 |
| Computer Science Coursework | 5 |
| Computer Science 1010 | 76 |
| Computer Science 1011 | 51 |
| Independent Research in Computer Science | 8 |
| Three Dimensional and Distributed Games Design | 75 |
| Information Technology Honours | 4 |
| Computer Science Dissertation | 30 |
| Information Technology Minor Dissertation | 27 |
| Databases for Data Scientists | 44 |
| Data Visualisation | 39 |
| MIT: Computer Networks | 16 |
| MIT: Programming In Python | 30 |
| MIT: Human Computer Interaction | 17 |
| MIT: Database Systems | 16 |
| MIT: Cyberlaw and Ethics | 15 |
| MIT: Software Engineering | 20 |
| MIT: Web Programming | 14 |
| MIT: Research Methods | 15 |
| Computer Science Thesis | 21 |
| Central University of Technology | Diploma in Information Technology (70% of the content is coding) | 300 | BTech in Information Technology (Software development) | 80 |
| Durban University of Technology | Applications Development 1A/1B | 673 | Applications Development Project 1 | 450 |
| Applications Development 2A/2B | 381 | Applications Development Project 2 | 274 |
| Applications Development 3A/3B | 188 | Applications Development Project 3A/3B | 198 |
| Mobile Computing 2A/2B | 364 | Development Software 3 | 127 |
| Development Software 4 | 160 |  |
| Advanced Development Software 4 | 160 |
| Computer Programming and IT  | 100 |
| University of the Free State | Programming and Problem Solving: Part 1 | 158 | The modules include aspects of both Coding and Software Development. |
| Programming and Problem Solving: Part 2 | 116 |
| Web Page Development  | 93 |
| Visual Basic for Applications (Visual Basic) | 170 |
| Data Structures and Advanced Programming | 88 |
| Databases (SQL): Part 1 | 103 |  |
| Databases (SQL): Part 2 | 53 |
| Software Design | 75 | The module includes aspects of both Coding and Software Development. |
|  | Software Engineering | 54 |
| Internet Programming  | 42 | The modules include aspects of both Coding and Software Development. |
| Object-oriented programming for Engineers | 54 |
| University of Johannesburg | Computer Science 1A | 510 | Computer Science 2B | 257 |
| Computer Science 1B | 425 | Computer Science 3A | 201 |
| Computer Science 2A | 249 | Computer Science 3B | 211 |
| Informatics 1A | 315 | Informatics 2A | 164 |
| Informatics 1B | 260 | Informatics 2B | 181 |
| Informatics 100 | 461 | Informatics 3A | 184 |
|  | Informatics 3B | 227 |
| University of Limpopo | C++ Programming for First Years  | 300 | C++ Programming for First Years | 300 |
| JAVA Programming for Second Years | 200 | JAVA Programming for Second Years | 200 |
|  | Research Project to Third Years in Groups | 50 groups |
| MangosuthuUniversity of Technology | Computer Applications | 40 | Development Software 2 | 100 |
| Introduction to Programming | 40 | Development Software 3 | 80 |
| Nelson Mandela University | Technical Programming 1 | 140 | Software Development 1 | 590 |
| Technical Programming 2 | 150 | Software Development 2 | 180 |
| Internet Programming | 130 | Software Development 3 | 150 |
|  | Software Development 4 | 115 |
| Programming:* First year
* Second year
* Third year
* Honours modules
 | 240 | * Data Structures
* Database design
* Algorithmics
* IS Project Management
* Information Systems (systems analysis and design)
* Web Systems development
* Multi-Media development
* Blockchain development
* Artificial Intelligence
 | 300 |
| North-West University | First year: * Introduction to Computers and Programming
* Structured Programming
* User Interface Programming
 | 420 |  |
| Second year:* User Interface Programming
* Programming
* Data Structures and Algorithms
 | 160 | Second year* Systems Analysis and Design (ITRW213, ITRW225)
 | 150 |
| First year:* Structured Programming
 | 77 | Second year:* Software Engineering
 | 117 |
| Extended programme:* Structured Programming
 | 96 |  |
| Second year:* Data Structures and Algorithms,
* Imperative and Object Oriented Programming
 | 125 |
| First year:* Introduction to Computing and Programming
* Structured Programming
 | 110 | Second year:Systems Analysis and Design (ITRW213 and (ITRW225) | 140 |
| Second year:* Systems Analysis and Design (ITRW211, 212, 222)
 | 140 |  |
| University of Pretoria | * BCom: Informatics
* BIT: Information Technology
* BSc: Mathematical Statistics
* BSc: Actuarial and Financial Mathematics
* BEng: Computer Engineering
* BEng: Electrical Engineering
* BEng: Electronic Engineering
* BIS: Multimedia
* BIT: Information Technology
* BSc: Information Technology: Information and Knowledge Systems
* BSc: Information and Knowledge Systems
* BSc (Computer Science): Computer Science
 | 3 323 | * BCom: Informatics
* BIT: Information Technology
* BSc: Mathematical Statistics
* BSc: Actuarial and Financial Mathematics
* BEng: Computer Engineering
* BEng: Electrical Engineering
* BEng: Electronic Engineering
* BIS: Multimedia
* BIT: Information Technology
* BSc: Information Technology: Information and Knowledge Systems
* BSc: Information and Knowledge Systems
* BSc (Computer Science): Computer Science
 | 2 683 |
| Rhodes University |  | Information Systems 201 | 264 |
| Information Systems 202  | 163 |
| Information Systems 301  | 107 |
| Information Systems 302  | 110 |
| Computer Science 112 | 343 |
| Computer Science 101 | 90 |
| Computer Science 102 | 79 |
| Computer Science 201 | 64 |
| Computer Science 202 | 62 |
| Computer Science 301 | 35 |
| Computer Science 302 | 41 |
| Information Systems 201 | 264 |
| Information Systems 202 | 163 |
| Information Systems 203 | 136 |
| Information Systems 301 | 107 |
| Information Systems 302 | 110 |
| Introduction to ICT (CS1) | 85 |
| Introduction to ICT (CS2) | 65 |
| Introduction to ICT (CS3) | 34 |
| Honours | 15 |
| University of South Africa | Formal Logic 2 | 360 | Introduction to Programming 1 | 3 673 |
| Computer Graphics | 248 | Introduction to Programming 2 | 1 000 |
| Formal Logic 3 | 237 | Advanced Programming | 400 |
| Digital Logic | 535 | Introduction to Interactive Programming | 950 |
| Formal Program Verification | 50 | Introduction to Web Design | 954 |
|  | Graphical User Interface Programming | 714 |
| Interactive Programming | 674 |
| Internet Programming | 747 |
| Object-Oriented Analysis | 1 103 |
| Information and Communication Technology Project | 219 |
| Stellenbosch University | Computer Programming modules in Science and Engineering | 1412 | The modules include aspects of both Coding and Software Development. |
| University of the Western Cape | Java and C# | 30 | BSc Computer Science: HonoursComputer Science: Masters  | 30 |
| University of Zululand | Python and Java at First Year Level (SCPS111/112) | 160 | Software Development is offered at Second Year and Third Year levels (SCPS212/311) | 60 |