



# Introduction to ICT

## CSc1L1

Introduction to ICT, also known as CSc1L1, is a semester course which is offered in the first semester of the year, when it is written off. The course is written off at the end of the semester in which it is taken. It is a compulsory course in the Pharmacy faculty, and is taken as a service course by students from across the spectrum of faculties at Rhodes.

At the end of the CS1L course students should be familiar with modern computing environments. They should be relatively proficient in the use of word processors, spreadsheets, presentation software and desktop publishing tools, and be able to select the appropriate tools or combinations thereof to solve mathematical problems of varying complexity, represent data in various ways, create documents, presentations, posters, and similar documents. They should also be familiar with relevant social issues relating to computing and the Internet including an understanding of online risks, social networks, health risks such as RSI, and the impact of computing on society, including topical issues.

NOTE: If you plan to take CSc102 or any higher credit in Computer Science, you must register for CSc101 rather than CSc1L.

### COURSE CO-ORDINATOR

Your course co-ordinator is **Prof Nomusa Dlodlo**, Room 002, Hamilton Building (N.Dlodlo@ru.ac.za).

### ENTRANCE REQUIREMENTS AND SUBMINIMA

Entrance requirement: none

Minimum performance for the granting of supplementary examinations: 35%

### LECTURES AND PRACTICALS

There are: 4 formal lectures per week  
4 formal tests per semester (during lecture periods)  
Occasional spot tests  
1 formal practical session per week (3 hours per session)  
Additional after hours reading and exercises are recommended.

Lectures:	Monday	4	10:30am
	Tuesday	5	11:25am
	Wednesday	No lecture	
	Thursday	2	8:40am
	Friday	3	9:35am

Practicals: Tuesday, Wednesday or Thursday afternoons at 14h00 – not all afternoons depending on numbers.

Lectures will be held in the BIOSCIENCE MAJOR LECTURE THEATRE. Practical sessions will be held in the JACARANDA LABORATORY (ground floor of the New Arts Building). You will be allocated to a particular session and tutor – you cannot choose your own time.

Practical work **MUST BE COMPLETED** in the formal lab session and handed in at the **END OF YOUR PRACTICAL SESSION**. You are encouraged to discuss the problems set on practical afternoons with each other, and to seek help from each other (and, of course, from your tutor). However, you are expected to hand in your **OWN INDIVIDUAL SOLUTION**, unless you have specifically been asked to work as part of a team. Students who don't abide by this will be dealt with severely.

### TEXTBOOKS AND HANDOUTS

There is no textbook for this course. Course material is available online via the RUCONNECTED COURSE.

A non-refundable amount of R52-00 will be charged to your University account at the start of the course for class handouts and consumables.

## **COURSE OBJECTIVES AND OUTLINE**

The Introduction to ICT course is intended to do more than teach basic computer literacy skills on current packages. It provides a combination of theoretical knowledge and practical skills that together comprise a mental framework that will enable the student to adapt and learn new IT packages as they change, to solve new IT problems and use additional package features that are not explicitly taught in this course. The course has a strong practical focus with the intention of enabling students to use ICTs as tools for productivity and problem solving in their lives.

The course is delivered as four modules as described below:

### **Introduction [3 weeks]**

This section provides an introduction to modern computing environments and use of the Internet. Key areas covered include:

- Introduction to computing hardware and peripherals
- Information storage and retrieval
- Searching for information sources online
- Word processing
- Ethics in computing

### **Presentation Software [3 weeks]**

Being able to present information and data in an accessible format is an important part of communication. This module introduces presentation software in the form of PowerPoint (MS Office) and discusses the main ideas behind presentation software. It also offers initial concepts on digital imaging, to enable better practical manipulation of images. So, the key areas discussed include:

- Using PowerPoint
- Basic concepts of digital imaging

### **Spreadsheets and Problem Solving [3 weeks]**

Building on the concepts in the introductory module, students are introduced to spreadsheets and their application in the solution of a number of common information processing problems. This is followed by a focus on using spreadsheets as a tool for modelling and solving a number of real world problem types.

Examples of these include:

- Tracking drugs in pharmacy
- Investment management
- Bond repayments

### **Human Computing [3 weeks]**

This module deals with the human aspects of computing, covering issues of both a personal and a wider social nature. Key elements include:

- Impact of computing on society
- Computing and ethics

Of course, it is too much to hope that computer problems can all be solved simply by finding the right “package”. In many cases, special packages have to be produced – and in any event, the general purpose tools for word processing, spreadsheets, communications and so on also have to be produced somewhere! Such software packages are developed by writing computer programs. Design and implementation of computer programs is covered in other Computer Science courses.

It is important that you are up-to-date with the material covered in lectures before doing your practicals so that you are in a position to get started on the assignment straight away. This is how you will be able to take maximum advantage of the tutorial help available.

## **YOUR TIME COMMITMENT**

The Department of Computer Science expects a CSc1L student to spend a minimum of 11 hours per week on Computer Science. This time should be divided up approximately as follows:

- 4 hours per week on attending lectures in Computer Science
- 4 hours per week on lecture revision, further reading and extra practical work, including class assignments
- 3 hours per week on practicals

## **PERFORMANCE AND ASSESSMENT**

### **DP regulations**

Please see DP Regulations under Departmental Dynamics.

### **Evaluation**

- For your Introduction to ICT DP to be granted, you are required to maintain an average of at least 50% for your practicals, and achieve an average of at least 40% for your tests.
- Test dates are marked on the course programme and are written during the lecture periods, normally in the Great Hall or Great Hall Verandah, and there will be a make-up test for those granted a Leave of Absence in the last week of lectures in the Department.
- The assessment of students in CSc1L1 is based on a total of:
- 25% semester mark (calculated from the results of practicals and test assessments)
- 75% 3-hour examination (theory and practical in one examination, written in the laboratory)

### **SUPPLEMENTARY EXAMINATIONS**

A mark of between 35% and 50% may result in a student being allowed to write a Supplementary examination (see the "Entrance Requirements & Subminima" section). These concessions are not automatic; they depend on your overall performance in all your courses, including those that might have been attempted in previous years. Supplementary exams for the first semester are written with the second semester exams in November. Queries in this regard should be directed to your Dean.



# Business Problem Solving with Computers

## CSc112

CSc112 is a semester course, which is offered in the **second** semester of the year. The course is written off at the end of the semester. CSc112 is the entry-level course for majoring in Information Systems, and is **required** for entry into IS201. It may also be taken in other degree structures where knowledge of computer fundamentals, including computer programming, is desirable.

### COURSE CO-ORDINATOR

Your course co-ordinator is **Prof Nomusa Dlodlo**, Room 002, Hamilton Building (N.Dlodlo@ru.ac.za).

### ENTRANCE REQUIREMENTS AND SUBMINIMA

Entrance requirement: none

Minimum performance for the granting of supplementary examinations: 35%

### LECTURES AND PRACTICALS

There are:        5 formal lectures per week  
                       Tests during the semester  
                       1 formal practical session per week (3 hours per session)  
                       Additional after-hours reading and exercises are recommended.

	Stream 1	Stream 2
Lectures: Monday	1 (7:45am)	2 (8:40am)
Tuesday	2 (8:40am)	3 (9:35am)
Wednesday	3 (9:35am)	4 (10:30am)
Thursday	4 (10:30am)	5 (11:25am)
Friday	5 (11:25am)	1 (7:45am)

Practicals: Weekday afternoons starting at 14h00.

Lectures will be held in the BIOSCIENCE MAJOR LECTURE THEATRE. Practical sessions will be held in the JACARANDA LABORATORY (basement floor of the New Arts Building). You will be allocated to an afternoon practical session and tutor.

Practical work **MUST BE COMPLETED** in the formal lab session and handed in at the **END OF YOUR PRACTICAL SESSION** for CSc112. You are encouraged to discuss the problems set on practical afternoons with each other, and to seek help from each other (and, of course, from your tutor). However, you are expected to hand in your **OWN INDIVIDUAL SOLUTION**, unless you have specifically been asked to work as part of a team. Students who don't abide by this will be dealt with severely.

### TEXTBOOKS AND HANDOUTS

There is no textbook for this course. Course material is available online via RUConnected.

A non-refundable amount of R52-00 will be charged to your University account for CSc112 at the start of the course for class handouts and consumables.

### COURSE OBJECTIVES AND OUTLINE

In the CSc112 course, we expose students to the fundamentals of using computers and information technology (IT) to solve problems. The course provides an introduction to critical thinking and fundamental problem solving skills. Some problems are solved using packages like spreadsheets, some are solved without the use of a computer, and some are solved by programming. No previous programming or computer experience is necessary for this course, although basic computer literacy is helpful.

#### Introduction to the Operational Environment

This module brings alive the exciting world of modern computing. The module provides a clear insight into modern desktop environments, networks and servers; explores how data is represented and stored electronically; file structures and hierarchy; and modern trends and technologies.

## **Information Systems Theory**

This module introduces students to the theory that underlies the study of information systems. It introduces students to the history of systems thinking, and the systems approach to information systems, after which the concepts of systems and its applicability to information systems are presented. Systems in organisations and then information and information systems as systems conclude the module. Practical side of the course consists of drawing systems diagrams of case study scenarios.

## **Business Spreadsheets Decision Support**

### **- Spreadsheets**

Spreadsheets are an important tool in providing solutions to individuals and organisations. The spreadsheet is a 'bread-and-butter' tool in any modern organisation. Respectable proficiency in the use of spreadsheets is essential to any commerce graduate.

### **- Business Problem Solving**

The solving of business problems is a fundamental activity in an organisation. Most solutions to problems involve the application of IT in some form. This module focuses on higher-level solution options available to an organisation. Upon completion of the course, the student should be able to:

- Apply a range of techniques to identify a problem and its causes and effects
- Develop the ability to solve problems and create innovative IT solutions

## **Databases and Analytics**

### **- Databases**

Databases are an essential data storage and manipulation resources in an organisation. A fundamental need in any organisation is the safe and proper storage of operational data, and the extraction of business (summative, trend, etc) information for all the functional levels in an organisation. Commerce students should have a solid grounding in the purpose and application of databases.

### **- Big Data Analytics using Databases**

The focus will be on laying the ground of the clear understanding of data and big data. The various concepts are introduced with contextual examples given of the concepts of data.

With the base knowledge of what data and big data is, we build up by introducing new concepts of business intelligence and analytics and how to link the data that is produced to these two concepts and how businesses can be at an advantage when they use them.

## **YOUR TIME COMMITMENT**

The Department of Computer Science expects a CSc112 student to spend a minimum of 12 hours per week on Computer Science. This time should be divided up approximately as follows:

- 5 hours per week on attending lectures in Computer Science
- 4 hours per week on lecture revision, practical preparation and further reading
- 3 hours per week on practicals

**IMPORTANT:** It is important that you are up-to-date with the material covered in lectures when you arrive at the computer laboratory for your practical session so that you are in a position to get started on the assignment straight away. This is how you will be able to take maximum advantage of the tutorial help available at practical sessions, and to ensure that you complete the assignments set for the practical session.

## **PERFORMANCE AND ASSESSMENT**

### **DP regulations**

Please see DP Regulation under Departmental Dynamics.

### **Assessment**

- For your DP to be granted, you are required to maintain an average of at least 40% for your practicals and achieve an average of at least 40% for your tests.
- The examination system is based on a mark per minute in all exams.
- A practical examination is scheduled before other examinations begin. Bring your university ID card to the practical exam, just as you do for normal written exams.

The assessment of students is based on a total of:

- 25% semester mark (calculated from the results of practicals and test assessments)
- 75% 3-hour examination (theory and practical in one examination, written in the laboratory)

### **SUPPLEMENTARY EXAMINATIONS**

A mark of less than 50% may result in a student being allowed to write a Supplementary examination (see the "Entrance Requirements & Subminima" section), Supplementary exams are written in January of the following year, and are awarded by your faculty board. Queries in this regard should be directed to your Dean.