Faculty of Engineering,
Built Environment and
Information Technology

Fakulteit Ingenieurswese, Bou-omgewing en
Inligtingtegnologie / Lefapha la Boetšenere,
Tikologo ya Kago le Theknolotši ya Tshedimošo

Study Guide

Department of Informatics

Systems Analysis and Design II

INF 271

Last updated: 4 February 2022

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1 Introduction

1.1 Welcome

A warm welcome to you as a student in the Department of Informatics! We hope you are going to enjoy your studies this year! Informatics studies the application and use of computer and information systems within the organisation. Our students' strengths lie in their broad background of the economic and management sciences, which implies that the world of business is nothing new to them. The use of Information Technology in organisations is growing exponentially and new, more complex and challenging applications are explored and developed on a daily basis. The work of an informatics specialist is extremely interesting, but studying Informatics has an added benefit in that there is a very small chance that the qualified Informatician will ever be without work.

South Africa is an advanced user of Information Technology, and work opportunities for IT graduates have never been problematic. The work world and environment that we prepare you for through our degree in Informatics, is international and a substantial number of our students are successful when they, in the process of expanding their professional skills, seek employment overseas. We also take great care to ensure that our curriculum is in line with the curricula of overseas universities and we take part in and participate in overseas conferences where educational approaches and curricula are presented and discussed. Our BCom (Informatics) degree is one of only a handful of qualifications outside the USA that is internationally accredited by ABET (see www.abet.org). Our best wishes accompany you - may you find pleasure in gaining this sought after knowledge!

1.2 Educational approach

The general objective with this module is to emphasise understanding rather than merely focusing on memorizing the content. This is done to stimulate creative thinking and the development of innovative skills amongst students. Student-centred and co-operative learning and teaching methods are applied during lectures as well as practical sessions, in order to optimally develop the above skills.

You are expected to participate in discussions during all sessions. Your fellow students are dependent on the inputs you provide, therefore your participation is crucial. After all, you are also dependent on their contributions.

Please read our Departmental Brochure on ClickUP. It is our hope that you will find your studies informative, formative and enjoyable.

1.3 Responsibilities of the student

Full detail about what is required from you as a student will be posted on ClickUP under the links Schedule and notes, as well as Assessment.

2 Administrative information

2.1 Contact details

	Name	Building and room number	Telephone number	Email address
Module coordinator	Dr K Pillay	IT 5-100	012 420 5422	komla.pillay@up.ac.za
Lecturer	Dr MJ Hattingh	IT 5-67	012 420 5322	marie.hattingh@up.ac.za
Assistant Lecturer	Christine Olckers	IT 5-72	012 420 4177	Christine.olckers@up.ac.za
Assistant Lecturer	Stefanus Strydom	IT 5-72	012 420 4177	Stefanus.strydom@up.ac.za
Teaching assistants	Luke Partridge	N/a	N/a	u19010240@tuks.co.za

Consultation hours will be published on ClickUP. Please book a slot in the appointment calendar. If no slot is available, please email the module coordinator/lecturer/assistant lecturer, and we will see if we can accommodate you.

2.1.1 Timetable

Face-to-face or online classes will be in times/venues mentioned below. Use the University of Pretoria's timetable which is available on the Student Portal to determine where and when you have classes.

There is one lecture per group per week. You can attend either Group 1 or Group 2 lecture, depending on your schedule for other modules and lecture venue capacity.
To ensure that we comply with Covid-19 Level 1 regulations, students will be required to pre-book Group 1 lecture session should they wish to attend on campus. Details of the pre-booking system will be announced on ClickUP.

Group 2 lectures will be online on Blackboard Collaborate. No booking is required for this lecture. This lecture will be recorded.

Contact session	Day	Time	Venue
Theory Lecture (Group 1)	Tuesday	10:30-12:30	HB 4-1
Theory Lecture (Group 2)	Wednesday	7:30-9:20 (Class to start at 8:00)	Online
Practical	Thursday	As booked	Red Lab (Informatorium) Or Online

2.2 Practical sessions

There are six (6) practical sessions scheduled on a Thursday. These practical sessions will take place in the labs on campus and online. You must book for only one 1-hour practical sessions – instructions to be posted in due course.

2.3   Grievance procedures

All issues should be reported in writing, providing details of the complaint or issue. First consult the lecturer concerned about the complaint or issue. If the matter is, however, not resolved, you should consult the class representative (the primary function of the class representative is to serve as a two-way communication channel between the class and the lecturer.) If the matter remains unresolved you should consult the module co-ordinator in the case of large module classes with multiple lecturers. Where the coordinator is unable to or fails to resolve the matter, you should consult the Head of Department. Should the matter remain unresolved, you may approach the Dean of the Faculty.

3   Study material and purchases

Please note that the following textbooks are prescribed. INF 271 has only prescribed material and no recommended material. To successfully complete the subject, students will be required to supplement class notes and class activities with material found in the prescribed textbooks.

Bentley, L.D. & Whitten, J.L, 2007. Systems Analysis and Design for the Global Enterprise. 7th Edition. McGraw-Hill: Boston.

You can download the Systems Analysis and Design Methods (PDF. 86 mb) textbook for free, or by scanning the QR code.
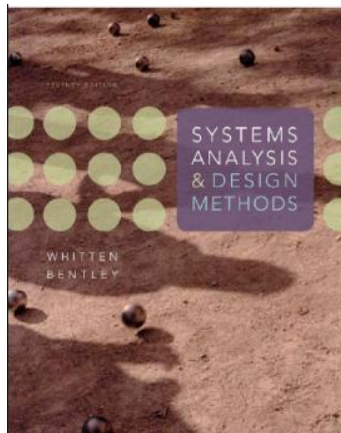
4   Rules, requirements and guidelines

Please refer to the **Departmental Brochure** for general rules, requirements and guidelines.

5   Student support

The University of Pretoria supports you in various ways free of charge. For academic support contact the tutors allocated to the module (see section 2.1), and/or the Faculty Student Advisor (see section 2.1).

Faculty student advisors	Academic support Goal setting & motivation Adjustment to university life Test/Exam preparation Stress management Career exploration	Individual consultations and workshops about - time management - study methods	
FLY@UP: The Finish Line is Yours	● Think carefully before dropping modules (after the closing date for amendments or cancellation of modules). ● Make responsible choices with your time and work consistently. ● Aim for a good semester mark. Don't rely on the examination to pass.	www.up.ac.za/fly@up email: fly@up.ac.za	

For e-learning support
- Report a problem you experience to the Student Help Desk.
- Approach the assistants at the help desks (adjacent to the Student Computer Laboratories in IT Building, NW2, CBT, etc).
- Visit the open labs in the Informatorium Building to report problems at the offices of the Student Help Desk.
- Call 012 420 3837.
- Email studenthelp@up.ac.za

Safety in the evening: Green Route
- From 18:00 till 06:00 Security Officers are available to escort you (on foot) to and from your residence or campus anywhere east of the Hatfield campus through to the LC de Villiers terrain.
- Departure point is at the ABSA ATM next to the Merensky Library.
- Phone the Operational Management Centre if you need a Security Officer to accompany you from your residence to campus.

For more support services see Addendum A

6 Module information

6.1 Purpose of the module

The general objective with this module is to emphasise understanding rather than memorising, in order to stimulate creative thinking and the development of innovative skills amongst students in the area of System Analysis and Design. Student-centred and co-operative learning and teaching methods are applied during lectures, tutorials, as well as practical sessions, in order to optimally develop the above skills, as well as to stimulate the development of communication skills, interpersonal skills and group dynamics essential in the process of System Analysis and Design.

Students are expected to participate in discussions during lectures and tutorial sessions. As fellow students are dependent on the inputs students make, everyone's participation is crucial.

In this course the student will be specifically trained in the process of identifying system requirements, documenting the system requirements for the 'as is' as well as the 'to be' information systems, both in terms of LOGICAL MODELLING and PHYSICAL MODELLING.

6.2 Module outcomes

After completion of this module, a student should be able to:

MO1: Construct a mental model towards becoming a business analyst through explaining the value of systems analysis and design.
MO2: Describe the components and processes involved in developing an information system.
MO3: Formulate the feasibility of a project in terms of the elements of a system proposal.
MO4: Identify and demonstrate different modelling techniques based on the functional requirements identified in a given case study.
MO5: Integrate organisational knowledge with an information technology solution in terms of input and output design.

6.3 Articulation with other modules in the programme

See Departmental Brochure for a full explanation of all Informatics modules.

6.4 Module structure
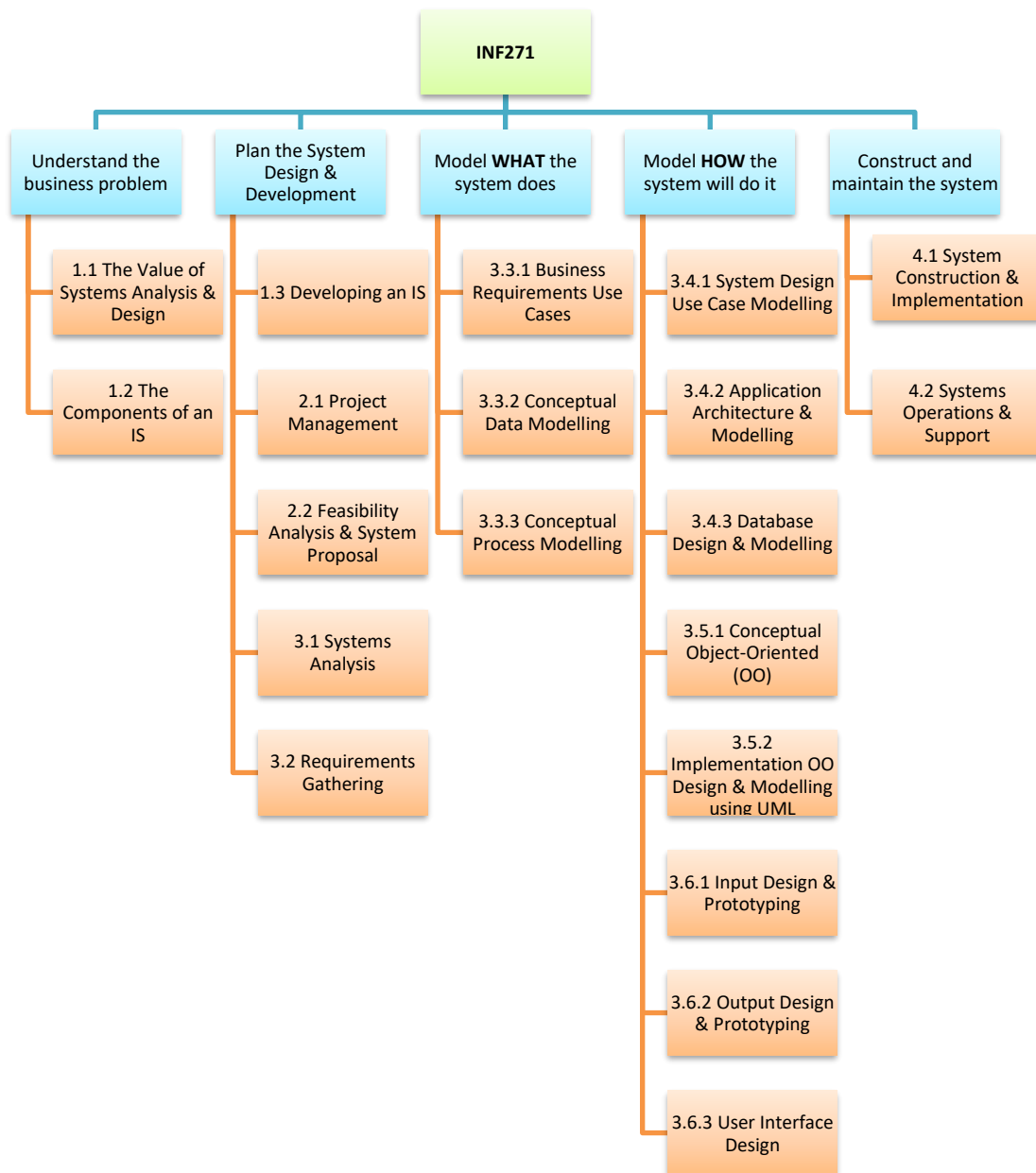
6.5 Learning presumed to be in place

It is assumed the student has successfully completed INF 171.

6.6 Credit map and notional hours

The number of credits allocated to a module give an indication of the volume of learning required for the completion of that module and is based on the concept of notional hours. Given that this module carries a weighting of 14 credits, it follows that you should spend an average of 140 hours of study in total on the module (1 credit=10 notional hours). This includes time for lectures, assignments, projects, tests and exams. This means that you should spend approximately 140 hours/14 week=10 hours per week.

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7 Assessment

In this section of the study guide it is important to share with the students the titles and the exact descriptions of all assessment tasks in the module.

7.1 Assessment plan

Include dates, opportunities and criteria.

Assessment type	Assessment task	About	Assessment tool	Due date
Assignment (Group)	Submit on ClickUP	ALL	Rubric	See schedule
Tutorial Activities (Individual & group)	Submit on ClickUP	Per Lesson Topic	Memo	Per Schedule
Formal semester theory test 1	Written	MO1, MO2, MO5	Memo	See Student Portal
Formal semester theory test 2	Written	MO3, MO4, MO5	Memo	See Student Portal
Formal theory exam	Written	All	Memo	November 2022

7.2   Calculation of module mark and final mark

Module Average [as calculated at the end of the year]	
● Semester test 1	20%
● Semester test 2	20%
● Practicals & Quizzes Practicals (24%) Quizzes (6%)	30%
● Assignment Deliverable 1 (10%) Deliverable 2 (10%) Deliverable 3 (10%)	30%
Final year average [40% required to write exam]	**100%**

Absence from a module test must be supported by official and valid documentation (e.g. a relevant medical certificate) and must be submitted at the Informatics Help desk within three days of the date of the test. A special module test for all legitimate absentees can be taken on the specified date.

Pass requirements:
● A sub-minimum of 40% as a year module mark is needed to gain access to the exam.
● According to faculty regulations you have to obtain a final mark of 50% or more to pass this module.

Final Module Average [as calculated at the end of the exam]	
● Year mark	50%
● Exam mark	50%
Final module average [need 50% to pass module]	**100%**

Please refer to the **Departmental Brochure** for general rules and requirements related to supplementary exam qualification.

7.3   Assessment policy

Please refer to the **Departmental Brochure** for general rules related to assessment. Make sure to review the departmental brochure for all departmental rules and requirements as listed and related to University regulations and requirements. Test and assignment information and dates are available on ClickUP. Please make a note of these dates. **Class Tests/Class Activities are done during class time only. No special arrangements will be made in this regard. Please submit assignments and practical exercises on time. No late submissions will be accepted.**

There is no option for promotion in this module. A sub-minimum of 40% as a module mark is needed to gain access to the exam. According to faculty regulations you have to obtain a final mark of 50% or more to pass this module. A student's semester mark will be taken into consideration when calculating the final mark. All assignments due will be posted onto ClickUP. Completed practicals/assignments should be uploaded onto ClickUP. **All tests, assignments and activities will contribute towards your final mark.**

7.4   Plagiarism

Plagiarism is a serious form of academic misconduct. It involves both appropriating someone else's work and passing it off as one's own work afterwards. Thus, you commit plagiarism when you present

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someone else's written or creative work (words, images, ideas, opinions, discoveries, artwork, music, recordings, computer-generated work, etc.) as your own. Only hand in your own original work. Indicate precisely and accurately when you have used information provided by someone else. Referencing must be done in accordance with a recognised system. Indicate whether you have downloaded information from the Internet. For more details, visit the library's website: http://www.library.up.ac.za/plagiarism/index.htm.

8   Addendum A: Support services

Please download a QR code reader on your cell phone. To download a QR code reader open your mobile app store (App Store, Google Play or Windows Marketplace) and search for QR code readers.

Student Counselling Unit	Provides counselling and therapeutic support to students.	012 420 2333	
Student Health Services	Promotes and assists students with health and wellness.	012 420 5233 012 420 3423	
The Careers Office	Provides support for UP students and graduates as they prepare for their careers.	careerservices@up.ac.za 012 420 2315	
Department of Security Services	24-hour Operational Management Centre 24-hour Operational Manager cell Crisis Line	012 420-2310 012 420-2760 083 654 0476 0800 006 428	
Department of Student Affairs	Enquiries concerning studies, accommodation, food, funds, social activities and personal problems.	012 420 2371/4001 Roosmaryn Building, Hatfield campus	
Centre for Sexualities, AIDS and Gender	Identifies and provides training of student peer counsellors.	012 420 4391	
Disability Unit	Ensure an integrated and inclusive learning experience for students with disabilities.	012 420 2064	

Fees and funding	http://www.up.ac.za/enquiry www.up.ac.za/fees-and-funding	012 420 3111	
IT Helpdesk	For student IT related queries	012 420 3051 studenthelp@up.ac.za	