UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Engineering, Built Environment and Information Technology

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

School of Information Technology
Skool vir Inligtingtegnologie

Department of Computer Science
Departement Rekenaarwetenskap

COS301:Software Engineering

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Contents

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2 Curriculum

COS 301 exposes you to challenges, principles, theories, methods, and tools commonly encountered in industrial-size software development projects. In this course, students are exposed to most of the engineering principles (with the exclusion of formal methods) and acquire the skills typically required of a software engineer to achieve the aims of software engineering while adhering to the value base of software engineering.

2.1 Aims of software engineering

Software Engineering aims to introduce engineering principles into software development. The engineering principles aim to ensure that the resultant system satisfies both functional and non-functional requirements, has predictable outcomes and hence repeatability, uses design metrics — preferably with defined construction tolerances, uses mathematical models where applicable, ensures that the system is failure tolerant, achieves component reuse, separate design from implementation, and have control over quality by making appropriate quality attribute trade-offs.

2.2 Value base of software engineering

An engineering approach requires professionalism, including adherence to a code of conduct and potentially legal accountability, adherence to standards and methods, sensible division of work across roles with defined responsibilities and skills requirements, solid quality assurance with the option of mathematical proof of correctness and completeness, and solid tool support for all aspects of the development and maintenance processes.

2.3 Cognitive skill levels

It is expected that students should master the fundamentals of SE on all the cognitive skill levels:

Knowledge: Remembering previously learned material. Test observation and recall of information; that is, "bring to mind the appropriate information" (such

as dates, events, places, knowledge of major ideas, and mastery of subject matter).

Comprehension: Understanding information and the meaning of material presented. For example, being able to translate knowledge to a new context, interpret facts, compare, contrast, order, group, infer causes, predict consequences, and so forth.

Application: Using learned material in new and concrete situations. For example, using information, methods, concepts, and theories to solve problems requiring the skills or knowledge presented.

2.4 Curriculum topics

The following table lists the curriculum study units covered by this module

Table 1: The curriculum study units covered by this module

Area	**Study unit**	**Topic**
Computing essentials	Construction tools	Development environments
		UI interface frameworks and tools
		Unit testing tools
Mathematical and Engineering fundamentals	Engineering foundations	Engineering design
		Theory of measurement
	Engineering economics	Value considerations
		Evaluating cost-effective solutions
Professional practice	Group dynamics and psychology	Dynamics of working in teams
		Interacting with stakeholders
		Dealing with uncertainty
	Communication skills	Reading and writing source code
		Reading and writing documentation
		Team and group communication
		Presentation skills
Software modeling and analysis	Types of models	Domain modelling
		Architectural design
Requirements analysis and specification	Requirements fundamentals	Definition of requirements
		Requirements characteristics
		Quality requirements
		Traceability
		Prioritization, trade-off analysis
	Eliciting requirements	Elicitation sources
		Elicitation techniques
	Requirements specification	Documentation basics
		Specification techniques
Software design	Design concepts	Fundamental design issues
		Design for quality attributes
	Architectural design	Styles, patterns, and frameworks
		Trade-offs among various attributes
		Requirements traceability in architect
Software verification & validation	Terminology and Foundations	Planning the V&V effort
		Documenting V&V strategy
		Metrics and measurement
	Testing	Integration testing
		Regression testing
		Testing tools and automation
Software process	Process concepts	Themes and terminology
		SE process improvement
		Quality analysis and control
Software quality	Concepts and culture	Definitions of quality
		Cost and impacts of bad quality
		Quality attributes of software
	Process assurance	Quality planning
		Process assurance techniques
	Product assurance	Root cause analysis
		Defect prevention
		Quality metrics and measurement

2.5 Employable skills

It is expected that students develop the appropriate employability skills such as the following:

Communication The success or failure of a software engineering project can often be attributed to the effectiveness of communication among the various stakeholders of the system under development. Proper communication entails regular, preferably minuted, communication between team members and the client. Communication also includes the quality of comments in code and of git commit messages, the quality and coherence of the documentation of the project, as well as presentation skills when demonstrating your project.

Management and planning It is well known that software engineering management and planning involve balancing a software project's scope, budget, time-to-market and quality. The consequences of bad planning may include the project's failure and interpersonal disasters. We encourage using software tools for project management, configuration management, version control, etc. Tools to visualise planning and progress, such as burn-down charts and Gantt charts, are also very useful in this context.

Teamwork and collaboration Teamwork is not merely the ability to work well as a team member. It includes aspects such as getting along with people of different ages, genders, races, religions or political persuasions; defining one's role in a team; identifying the strengths of the other team members; and being able to lead a team effectively. This is achieved through positive interdependence between the team members, effective communication, and individual and group accountability.

Interpersonal relations Interpersonal skills have two components, namely social sensitivity and emotional engagement. Social sensitivity is the capacity to maintain healthy social relationships. Emotional engagement is the level of empathy one has for the other team members and one's devotion to the project as a whole. Students should develop interpersonal skills to deal with team disharmony without causing harm. Students should not hesitate to ask for support from staff to resolve issues. Issues often get bottled up for too long, causing interpersonal disasters and project failure.

3 Module information

3.1 Outcomes

This module exposes students to challenges encountered in software development projects of industrial scale, applying sound software engineering principles and practices.

3.2 Career outcomes

Candidates who completed this course will have gained an understanding of the concepts and principles of software engineering. They should be able to work in a professional software development team and should be able to guide the team on best practices and software development processes.
Students will have an understanding of required engineering practices and software engineering tools used for software development, quality assurance, configuration management, and project management.

3.3 Course outcomes

Skills acquired in this module include

- The ability to interface effectively with a client,
- The ability to plan and execute a larger software development project,
- The ability to develop software within a modular architecture requiring the integration of modules developed by different teams,
- The ability to work within a software development team with specialized roles and responsibilities,
- To understand and be able to select and use appropriate software development methodologies,
- The ability to use software engineering tools, including design tools, development tools, build tools, testing tools, and configuration management tools,
- To perform the requirements elicitation, documentation, and validation of a realistic software development project,
- To design an architecture and the functionality for a software product,
- To introduce and enforce quality assurance practices and
- To provide suitable documentation for a software development project.

3.4 Credits

The module credits are 27 based on 2 lectures and 2 practical per week as a year module. The module is based on the ACM/IEEE Computing Curriculum for Computer Science with an emphasis on Software Engineering, covering many of the topics of the Guide to the Software Engineering Body of Knowledge (SWEBOK) and the SCM/IEEE Guidelines for Undergraduate. Degree Programs in Software Engineering.

4 Position in the academic program

4.1 Prerequisite modules

The prerequisite modules are COS212 and COS214. If registered for BSc (CS), you must be in your final year.

4.2 Assumed knowledge

It is assumed that you have mastered adequate content of the entire degree program to contribute knowledge and skills to the project to the satisfaction of the other team members. In particular, the curriculum study units listed in Table 2 must be applied when implementing your project.

Table 2: The curriculum study units assumed

Area	**Study unit**
Computing essentials	Computer Science foundations Construction technologies and tools
Mathematical and engi- Engineering fundamentals	Mathematical foundations Engineering foundations for software
Software modeling and analysis	Modeling foundations Information modelling (e.g. class diagrams) Behavioural modelling (e.g. state diagram, interaction diagram) *These are covered in Chapters 7 - 11 in the textbook*
Software design	Object-oriented design Design principles (information hiding, cohesion, and coupling) Design patterns (*See https://www.cs.up.ac.za/cs/lmarshall/TDP/TDI* Database design
Software verification & validation	Unit testing and test-driven development Exception handling (testing edge cases and boundary conditions) Black-box functional testing techniques
Software security	Security fundamentals Computer and network security Developing secure software

4.3 Related modules

This module relates to most undergraduate modules in that this module will lead you to practically apply the knowledge and skills acquired during your undergraduate studies. This is the first introductory course in software engineering. This course is complemented and rounded off by the following honours-level module:

COS 730: Software Engineering I: This aims to deepen the understanding of requirements engineering, software development methodologies, and quality assurance. The course further enables Software Architects to define, validate,

document, and analyze software architectures to provide an infrastructure within which non-functional requirements like performance, scalability, security, integrability/ accessibility, reliability, auditability, testability, and cost can be appropriately addressed.

5 Study material

You should acquire your own copy of the prescribed textbook. The course slides are not a replacement for either the lectures or the textbook. Apart from the textbook you may be given access to lecture slides and additional notes in electronic format published on the ClickUP module website.

5.0.1 Prescribed textbook

Title: Object-Oriented Software Engineering: An Agile Unified Methodology
Author: David Kung
Edition: Second Edition
Publisher: Pearson Education (US)
ISBN:
eBook 9781260792683
[through out the studyguide it will be referred to as Kung]

Title: Software Architecture in Practice - Fourth Edition (4th ed.),
Author: Len Bass, Paul Clements, and Rick Kazman,
Edition: Fourth Edition
Publisher: Pearson Education
`http://https://www.amazon.com/Software-Architecture-Practice-Practice_c3-Engineering-ebook/dp/B009GMUL84`

[through out the study guide it will be referred to as Bass]

5.1 Recommended text/material

The following study material is optional. It may assist in deepening the student's understanding of various aspects of the course.

- Title: Clean Architecture
  Author: Jessica Walker
  ISBN:
  eBook 798474305431

- Title: Clean Craftsmanship
  Author: Robert C. Martin
  Edition: Ninth Edition

Publisher: Pearson Education (US)
ISBN:
eBook 9780136915713

- Title: Design Patterns: Elements of Reusable Object-Oriented Software with Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and the Unified Process
  Author: Erich Gamma, Richard Helm, Ralph Johnson, John Vlissides & Craig Larman
  ISBN13: 9780582844421
  Publisher: Pearson Education Limited

  Title: Soft Skills
  Author: John Sonmez
  ISBN: eBook 9780999081440

- OMG's Unified Modeling Language Superstructure, version 2.4.1
  `http://www.omg.org/spec/UML/2.4.1/Superstructure/PDF/`
- Software Architecture in Practice by Len Bass, Paul Clements, and Rick Kazman
  `http://https://www.amazon.com/Software-Architecture-Practice-Practice_c3-Engineering-ebook/dp/B009GMUL84`
- The Guide to the Software Engineering Body of Knowledge (SWEBOK)
  `http://www.swebok.org`
- Tackling Design Patterns (2017) by Linda Marshall and Vreda Pieterse
  `https://www.cs.up.ac.za/cs/lmarshall/TDP/TDP.html`

5.2 The ClickUP module page

The ClickUp module page is used as the main portal for communication with the students. It hosts the following content:

- Lecture slides **(no lecture slide available for this module, please read the prescribed/recommended materials and other resources for study)**
- Announcements
- Marks
- Extra notes
- Consultation booking
- Demo booking
- Short description of the module
- Peer reviews
- Contact information of Staff
- Study guide

5.3 GitHub

You will be assigned your GitHub repository within the COS 301 2024organization for the capstone projects. All students are expected to own a GitHub repository **(with your name as it appears in your academic record & you tuks.co.za email address)** You are required to create and maintain the following items for your project:

- In your GitHub page, ensure you have a README file detailing what each team member did. This applies to every demo.
- A code repository (Github) for all your code
- A wiki and/or LaTeX rendered PDF for all your documentation
- All documentation will be passed through a plagiarism checker. The university has zero tolerance for plagiarism.

6 Course Organisation

6.1 Lectures

Lectures are held twice every week. Students are encouraged to attend lectures weekly as classwork will be given during some classes. The marks from these class assignments are given as bonus marks at the end of the year.

Monday	11:30 - 12:20	**IT 2-23**
Tuesday	13:30 - 14:20	**IT 2-26**

6.2 Lecture Presentation Mode for Semester Two

COS 301 lectures will resume according to the official University of Pretoria lecture timetable and **on campus**.

A hybrid approach that combines live online sessions and/or in-person contact sessions will be used to present other learning material for semester two. Demo presentations will be virtual on Blackboard Collaborate - All team members should attend the Demo session.
Lectures for the first-semester cover **Chapters 1-3 & 5 from textbook [Kung] and Chapters [1, 4, 13 & 14 from textbook [Bass] & guest lectures**. The second-semester lectures cover **Chapters 10, 12, 16, 18-21, 23-24 - [Kung] and Chapters 16-18 & - [Bass] & guest lectures** as well as aspects of Group dynamics. Students will also be exposed to some industry lecturers (presentations) to convey typical challenges, skills requirements, opportunities, and practices used in the industry. Guest lectures are essential due to the nature of COS 301. It requires developing a real-world solution to problems that produces a software product for an industry client. **We have secured industry guest lecturers to ensure your system's dev employs the latest technologies while applying software engineering techniques lecture slides.**

- **Class tests** will be held on:
  - **20 March**
  - **26 April**
  - **30 August**
  - **11 October**
- Semester tests will be written on-campus.
- **Project day is on the 25th October 2024, and it will be on campus at the Rautenbach Hall.**
- **Consultations**: Could be on campus or virtual via ClickUp – Teams ensure to book at least 24hrs beforehand. Teams must consult with a lecturer assigned to them at least once every week. A team could request that these consultations be online(virtual on Blackboard Collaborate) or on-campus by selecting a consultation slot on the COS 301 calendar.

6.3 Semester & Class Test

For COS 301, you need a 40% minimum average for each semester and class test - **there are no exceptions**. The class test will be held during the class/lecture time slots throughout the year. To assist you in passing the theoretical part of

- There will be **two semester tests** one in the first semester on the **15th of April**.
- The second-semester test will be during semester 2 on the **2nd of October**.
- A minimum of 40% is required for the semester tests to proceed with the module.
- There will be **4 class tests for 2024.** Two (2) for semester 1 and Two (2) for semester. Dates:
  - **20 March**
  - **26 April**
  - **30 August**
  - **11 October**
- Class tests are for knowledge testing and to ensure a deeper understanding of the content presented and the technical learning curve to complete your capstone project. Students are encouraged to participate to enhance their application of the lecture contents and technical materials to mini and capstone projects. NOTE: **NO SICK CLASS TEST**

Table 3: Practical Slots

Semester	Day	Time	Venue
1	Wednesday	7:30 - 9:30	Brown Lab
1	Friday	7:30 - 8:30	Blue Labs 1 and 2
2	Friday	7:30 - 10:30	Green and Purple Lab

6.4 Practical Slots

The university has allocated times and venues for you to work on COS301 specifically (and may be used for class tests). During MiniProject, this time may be used to meet the lecturing staff for meetings and feedback during the project. These slots can be found in table 3.

6.5 Project Aspects

Throughout the project, marks will be awarded for the following aspects:

- Software requirements specification (SRS) design & documentation
- Architectural design (component by component design) and documentation
- Software testing, plan, and reports
- Integration and integration testing,
- Implementation and code quality
- Technical and installation manual
- User manual
- Demo
- GitHub mono-repository. For more reference see the links below:
  `https://www.atlassian.com/git/tutorials/monorepos`
  `https://en.wikipedia.org/wiki/Monorepo`
- Individual GitHub profiles
- Individual GitHub contribution
- Participation in team activities
- Peer reviews (i.e., your teammate review & grade of your work and contribution to your project - the grading and feedback you give to your teammates, whether honest of filling stuff up, will then be evaluated to award you a mark for the peer review section - **Quality review is required to obtain marks here**).

6.6 Mini-Project/ SPRINTS

The mini-project is a learning opportunity to prepare you for the **Capstone Project**. The Capstone project consists of developing a complete software system's life-cycle, simulating how software development is carried out in the industry of a project by multiple teams and developers. Details of the mini-project will be discussed in a lecture.

6.7 Capstone Project

This module focuses on the capstone project, which is used to demonstrate all that you learned over your degree. The capstone project will rely on the experience you gained in the mini-project to complete your capstone project successfully.

Note: Multiple stakeholders will be involved in the capstone project (that is, the client (i.e., project owner, COS 301 staff, COS 301 Project Committee, CS staff, and Project Prize sponsors. Each of these stakeholders will have their requirements that must be fulfilled by your capstone project to pass the module and enter the project day. The COS 301 lecturers and the mentors assigned to you will guide you in achieving these requirements.

- Product Owner (Client)
- COS 301 Lecturers
- Lecturer Mentor (COS 301 ALs)
- Industry Mentor (Your project owner must give you a technical person in their company as your mentor)
- COS 301 Project Committee (six (6) CS staff)
- CS staff (Not the committee - they evaluate you on project day)
- Others (e.g., project day attendee)

6.7.1 Capstone Project

Scrum Meeting with Lecturer Mentor (COS 301 ALs), Project owner (client)/industry mentor is required of all teams to meet regularly. Meet with your *assigned* lecturer mentor or teaching assistant at least once every two weeks unless instructed otherwise. All teams should also meet constantly with their client (the project owner) and demo to them at least once every three (3) weeks ***(NOTE: Your client will grade you as part of project day marks***)

All students are required to work on their projects the entire year, even during semester examinations. Students are encouraged to work on their project consistently (it's a marathon, not a sprint). Teams must report any negligence or inconsistency in the working attitudes of a team member as soon as noticed - to their lecturer-mentor; any team that covers up other members' inconsistency will forfeit the mark for that sprint/demo.

6.7.2 Capstone Project - Agile development expected

The capstone project follows **Agile development** methodologies; therefore, you will be continuously updating documentation and updating implementation.

6.7.3 Capstone Project - use of External Libraries and service

Important notice

External Libraries and services are allowed but cannot then be counted as Use Cases or Features for marks by themselves. The service must be used with other services and code towards a use case to count for marks. i.e. You cannot just call an external AI service, have it perform all the processing and then claim your system has its "own" AI.

6.7.4 Capstone Project - Version control(Github)

Important notice

If your git mark is less than 40% you forfeit the marks for the demo, and not-useful GitHub commits will be disregarded(object files, meaningless commits, etc). You must average a minimum of ten (10) GitHub code commits per week. If there is a large disparity between the commitments of different group members, the entire group will fail.

6.8 Schedule for Mini-Project

Date	Event
27 Feb	Team Allocation – System's requirements
28 Feb	Mini project requirements session - SPRINT 1 begins
08 Apr	Mini project - SPRINT 1 ends + Evaluation 1
09 Apr	Mini project - SPRINT 2 begins
06 May	Final evaluation session - SPRINT 2 evaluations
06 May	Mini project ends

6.9 Schedule for Capstone Project

Date	Event
12 Feb	Clients invited to submit project proposals
28 Feb	Clients project proposals received
04 - 11 Mar	COS 301 Project proposals received are selected
03 Apr	Projects are published to the teams & Team registrations c
11 Apr	Projects are published to the teams 17 Apr
Capstone Project bidding open 08:30	
18 Apr	Capstone Project bidding closes 08:30
29 Apr	Capstone Project tenders submitted by teams 09:00
30 Apr	Capstone Project team tenders submitted to clients
03 May	Client selection of a team to develop their project received
08 May	Capstone projects allocated to teams
20, 21 May	Capstone Demo 1 and documentation evaluations
24, 25 June	Capstone Demo 2 and documentation evaluations
12, 13 Aug	Capstone Demo 3 and documentation evaluations
30, 01 Sept/Oct	Capstone Demo 4 - Exam Demo with COS 301 Project Co
23 Oct	Final evaluation starts
25 Oct	Project Day
30 Nov	Final evaluation ends

6.10 Agile Process

COS 301 - 2024employs a fully agile approach for the Capstone Project. Your team is recommended to have a **two weeks** sprint session planned with your lecturer and industry mentor present. Your team will present what you have done in the last two weeks and plan for the next two weeks. Note: The two-week sprint is recommended. The daily scrum is also highly encouraged. Your team could do **this every other day, such that you have seven scrums in the 14-day sprint.**

The **two weekly sprints and the daily scrums are strongly recommended**. Choose a day/every other day for your scrum and a day every two weeks for your sprint. For example, the sprint for **Team X** is Tuesday at @14:00 every two weeks. Scrum every other day, Friday @9:00, then send a calendar invite to your AL or Lecturer.

6.11 Capstone Project Guidelines

When forming teams for the capstone project, it is crucial to choose team members wisely. Look for members who are not only competent but also committed, considering you will be working together for the next six months. Conflicts are likely to arise, so be ready to expect and handle them. If a member(s) in your group is slacking off or not delivering their part, do not hesitate to report it to the lecturers or academic mentors early on. Otherwise, the whole team could be held responsible. So, take your time to pick the right team members – the responsibility rests on the team as a whole.

If your project does not meet the expected standard by demo 4, there's a good chance your team will need to re-demo. Teams should stick to the demo spec instructions closely, and after each demo, take in the criticism given, and reach out to your industry mentor, academic mentor, and lecturers for input on how to improve. Zero tolerance for conflicts between teams and lecturers and/or academic mentors, so keep the communication lines open.

6.12 Written tests and exam

6.12.1 Regulation

Two dates are reserved for written tests. Only students who did not write a scheduled test and have submitted a **valid** doctor's note will be admitted to an Aegrotat test if needed. The medical certificate should be submitted to the course coordinator within two (2) days (including weekends) after the scheduled test.

6.12.2 Lecture Schedule

The dates and scope for the written tests are as follows:

Date	Time	Venue	Scope
15th of April	17:30	IT 4-1	Chapters 1, 2, 3 & 5 [Kung] and Chapters 1, 2, 3, 4, 5 & 8 [Bass] & guest lectures
2nd of October	17:30	IT 4-1	Chapters 10, 12, 16, 18-21, 23-24 [Kung] and Chapters 10, 11, 13, 14, 15-18 & 26 [Bass] & guest lectures

7 Marks

Marks for all events will be published on your ClickUp to individual students' profiles. Students are responsible for verifying the correctness of these marks. Please file complaints about marks via e-mail to the course coordinator, **within five (5) working days after mark publications**. Details about the publication dates and deadlines for complaints are announced on ClickUP.

7.1 First semester

Activity	Weight
Mini Project	40
Capstone Project Demos 1 & 2	20
Semester Test 1	30
Class Test 1	5
Class Test 2	5
TOTAL	100

The mini-project consists of two phases. The first phases each contribute 40% mini project mark while the implementation phase contributes 60%. In each phase, the relevant aspects of the project stipulated in Section 6.5 will be evaluated. The marks breakdown of each phase is published with the instructions for the phase. The two demos of the capstone project contribute respectively 8% and 12% to the semester mark.

Important notice 1: - First Semester sub-minimum

A sub-minimum of 40% of the first-semester mark is required to continue into the second semester, such that you score a 40% for class tests 1 & 2 each.

A 50% of capstone project 1, capstone project 2 & mini project each - *(in the worst case a minimum of, the combination of these components marks should be at 50% at the end of first semester - see table)*

Semester 1 sub-minimum	
Activity	**sub-minimum**
Semester 1 & Class Tests	40%
Capstone Project Demos 1	50%
Capstone Project Demos 2	50%
Mini project	50%

7.2 Second semester

The mark breakdown of the different aspects of each demo is published with the instructions for each demo. However, the following aspects stated in Section 6.5 are still applied.

7.2.1 Calculation of second-semester mark

Activity	**Weight**
Semester Test 2	30
Class Test 2	10
Demo 3	20
Demo 4	40
TOTAL	100

Important notice 2: - Second Semester

A sub-minimum of 50% each of the second semester Demo marks is required. However, 40% of the combined semester 2 test and class test 2 are required for you to gain exam entrance to (Capstone Project Day). However, FAILING CAPSTONE DEMO 4 MEANS YOU CANNOT CONTINUE WITH THE MODULE or PRESENT FOR PROJECT DAY.

Semester 2 Sub-minimum	
Activity	**Sub-minimum**
Semester Test 2 & Class Tests	40%
Capstone Project Demos 3	50%
Capstone Project Demos 4	50%

8 Final evaluation

The COS 301 lecturers will do the project's final evaluation, other lecturers in the CS department, industry partners, and the teams' product owner (project client). The relevant aspects mentioned in Section 6.5 will be considered during the final evaluation. The marks breakdown is published with the instructions for the final evaluation setup.

Important notice 3: - Participate in all components of COS 301

To pass the module, you are required to participate in all the components of the COS 301 module as indicated in Section 8.1

8.1 Final mark calculation

The academic work of the First Semester is introductory, they, therefore, count lower (35%) compared to the Second Semester's total which counts for (65%) of the year mark.

Source	Weight
First Semester Test	10
First Semester Class Tests	5
Second Semester Test	20
Second Semester Class Tests	5
Mini Project	10
Demo 1	5
Demo 2	5
Demo 3	10
Demo 4	20
Project Examination	10
TOTAL	100

8.2 Examiners

Capstone project final examiners include CS Staff, module external examiner, project owner, industry mentors, external industry examiners, and any other person nominated by the course coordinator.

Important notice 4: No Special Exams

There are no Chancellor / Special Exams of any kind for this module; if you fail Demo 4, you have failed the module.

9 Other Process

9.1 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. Suppose the matter is, however, not resolved. In that case, 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 coordinator, especially in the case of large module classes with multiple lecturers. Where the co-ordinator is unable to or fails to resolve the matter, you should consult the Head of the Department. Should the matter remain unresolved, you may approach the Dean of the Faculty.

9.2 Plagiarism policy

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 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 original work. Indicate precisely and accurately when you have used information provided by someone else. Referencing must be done in accordance with a recognized 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.

9.3 Support services

9.3.1 Safety in the evening and emergencies

- For any safety or emergency-related matters, e.g. if you need a security officer to accompany you from your residence to campus, phone the Operational Management Centre (details on the back of your student card).
- The 24-hour, multi-disciplinary UP Crisis Line offers professional and confidential support to victims of crime in times of trauma. Phone the UP Crisis Line on 0800 00 64 28 for assistance and immediate action.
- Hatfield residence students: From 18:00 till 06:00, security officers can escort you (on foot) to and from your residence or campus anywhere east of the Hatfield Campus through to the Hillcrest Campus.

9.3.2 E-learning support

- Report a problem you experience to the Student Help Desk on your campus.
- Visit the open labs in the Informatorium Building or IT labs on your campus to report problems at the offices of the Student Help Desk.
- Approach the assistants at the help desks—campus specific (for example: adjacent to the Student Computer Laboratories in IT Building, NW2, CBT or Aldoel Building IT labs, etc). Call 012 420 3837. Email studenthelp@up.ac.za

9.3.3 Other support services:

Unit	Services	Telephone/Email
FLY@UP: The Finish Line is Yours	• Think carefully before dropping modules (after the closing date for amendments or cancellation). • Make responsible choices with your time and work consistently. • Aim for a good semester mark. Don't rely on the examination to pass	fly@up.ac.za
Disability Unit	• Academic support for students with learning disabilities: • Assistive technological services • Facilitation of test and examination accommodations • Test and exam concession applications • Accessible study venues and a computer lab • Referrals for recommended textbooks in electronic format	012 420 2064 email: du@up.ac.za
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 Roosmaryn Building, Hatfield campus	012 420 2371/4001
Centre for Sexualities, AIDS and Gender	Identifies and provides training for student peer counsellors.	012 420 4391
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 studenthelp@up.ac.za	012 420 3051

10 Calendar 2024

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Academic Calendar 2024

January

	S	M	T	W	T	F	S
1		1	2	3	4	5	6
2	7	8	9	10	11	12	13
3	14	15	16	17	18	19	20
4	21	22	23	24	25	26	27
5	28	29	30	31			

February

	S	M	T	W	T	F	S
5					1	2	3
6	4	5	6	7	8	9	10
7	11	12	13	14	15	16	17
8	18	19	20	21	22	23	24
9	25	26	27	28	29		

March

	S	M	T	W	T	F	S
9						1	2
10	3	4	5	6	7	8	9
11	10	11	12	13	14	15	16
12	17	18	Th	Fr	21	22	23
13	24	25	26	27	28	29	30
14	31						

April

	S	M	T	W	T	F	S
14		1	2	3	4	5	6
15	7	8	9	10	11	12	13
16	14	15	16	17	18	19	20
17	21	22	23	24	25	26	27
18	28	29	30				

May

	S	M	T	W	T	F	S
18				1	We	3	4
19	5	6	7	8	9	10	11
20	12	13	14	15	16	17	18
21	19	20	21	22	23	24	25
22	~~26~~	~~27~~	~~28~~	~~29~~	~~30~~	~~31~~	

June

	S	M	T	W	T	F	S
22							~~1~~
23	~~2~~	~~3~~	~~4~~	~~5~~	~~6~~	~~*~~	~~8~~
24	~~9~~	~~10~~	~~11~~	~~12~~	~~13~~	~~14~~	~~15~~
25	~~16~~	~~17~~	~~18~~	~~19~~	~~20~~	~~21~~	~~22~~
26	~~23~~	~~24~~	~~25~~	~~26~~	~~27~~	~~28~~	~~29~~
27	30						

July

	S	M	T	W	T	F	S
27		1	2	3	4	5	6
28	7	8	9	10	11	12	13
29	14	15	16	17	18	19	20
30	21	22	23	24	25	26	27
31	28	29	30	31			

August

	S	M	T	W	T	F	S
31					1	2	3
32	4	Fr	6	7	8	9	10
33	11	12	13	14	15	16	17
34	18	19	20	21	22	23	24
35	25	26	27	28	29	30	31

September

	S	M	T	W	T	F	S
36	1	2	3	4	5	6	7
37	8	9	10	11	12	13	14
38	15	16	Fr	18	19	20	21
39	22	23	24	25	26	27	28
40	29	30					

October

	S	M	T	W	T	F	S
40			1	2	3	4	5
41	6	7	8	9	10	11	12
42	13	14	15	16	17	18	19
43	20	21	22	23	24	25	~~26~~
44	~~27~~	~~28~~	~~29~~	~~30~~	~~31~~		

November

	S	M	T	W	T	F	S
44						~~1~~	~~2~~
45	~~3~~	~~4~~	~~5~~	~~6~~	~~7~~	~~*~~	~~9~~
46	~~10~~	~~11~~	~~12~~	~~13~~	~~14~~	~~15~~	~~16~~
47	~~17~~	~~18~~	~~19~~	~~20~~	~~21~~	~~22~~	~~23~~
48	~~24~~	~~25~~	~~26~~	~~27~~	~~28~~	~~29~~	~~30~~

December

	S	M	T	W	T	F	S
49	~~1~~	~~2~~	~~3~~	~~4~~	~~5~~	6	7
50	8	9	10	11	12	13	14
51	15	16	17	18	19	20	21
52	22	23	24	25	26	27	28
1	29	30	31	1	2	3	4

	Public Holidays		UP Examinations		Special Lecture Days (days swapped)
	Welcome Day		UP Supplementary Examinations		# Choose UP Day
	Registration/Orientation First Year Students		UP Recess		Spring Day
	INSYNC first year concert	0	Summer/Winter School		Cooling off period for all **non academic** student activities before & during exam period
	RAG of Hope Day			*	Provision for National Election Day in Semester 1 or 2 depending on the day of election

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UNIVERSITY OF PRETORIA
ACADEMIC CALENDAR 2024
MAIN DATES

1 January		South African Official Public Holiday
3 January	1.	Academic year commences
	2.	Commencement of online registration for senior students
15 – 27 January		Summer School
29 January-3 February		Chancellors and Special examinations (Summer School modules after 31 January)
31 January		Closing date submission of final marks for Summer School
7 February		Closing date submission of final marks for Chancellors and Special examinations
10 February	1.	Anniversary of the University's founding
	2.	Welcome Day
9-11 February		Special orientation for non-RSA students
12-16 February		Orientation programme for new first-year students at Hatfield Campus
16 February	1.	Closing date submission of final marks for Autumn Graduation
	2.	Closing date for awarding undergraduate and postgraduate qualifications by Faculty Administration
17 February		INSYNC first-year concert
19 February		Lectures commence for quarter 1 and semester 1
24 February		RAG of Hope Day
1 March		Last day of registration for quarters 1 and 2 or semester 1 (No student is permitted to register for a module after the first two weeks of lectures have passed, with the exception of cases that have been approved by the Registrar)
18 March		Closing date for amendments or cancellation of modules (quarter 1, 2, and semester 1)
19 March		Thursday timetable is followed
20 March		Friday timetable is followed
21 March-1 April		March/April recess
21 March		South African Official Public Holiday
29 March		South African Official Public Holiday
1 April		South African Official Public Holiday
17 April		Lectures end for quarter 1
18 April		Lectures commence for quarter 2
27 April		South African Official Public Holiday
1 May		South African Official Public Holiday
2 May		Wednesday timetable is followed
25 May-4 July		Cooling-off period for all **non-academic** student activities before and during the examination period
6 June		Lectures end for quarter 2 and semester 1
*7 June		*Timetable of extra lecture day is followed (*Provision for National Election Day in semester 1 depending on the day of the election – if no election is held in semester 1, this will become an Examination preparation day)*
8-27 June		Examinations of first-quarter, second-quarter, and first-semester modules
16 June		South African Official Public Holiday
17 June		Public Holiday in terms of legislation
28 June-4 July		Supplementary examinations of first-quarter, second-quarter, and first-semester modules
5-21 July		July recess

8 July		Last day for submission of supplementary examination marks of first-quarter, second-quarter, and first-semester modules
8-20 July		Winter School
22 July		Lectures commence for quarter 3 and semester 2
24 July		Closding date submission of final marks for Winter School
26 July		Closing date submission of final marks for Spring Graduation
2 August		Last day of registration for quarters 3 and 4 or semester 2 (No student is permitted to register for a module after the first two weeks of lectures have passed, with the exception of cases that have been approved by the Registrar)
5 August		Friday timetable is followed
9 August		South African Official Public Holiday
19 August		Closing date for amendments or cancellation of modules (quarter 3, 4, and semester 2)
9 September		Lectures end for quarter 3
10 September		Lectures commence for quarter 4
14 September		# Choose UP Day
17 September		Friday timetable is followed
18 September		Spring Day (**no lecture day**)
19-29 September		September recess
24 September		South African Official Public Holiday
4 October		International Students' Day
26 October-5 December		Cooling-off period for all **non-academic** student activities before and during the examination period
7 November		Lectures end for quarter 4, semester 2
**8 November*		*Timetable of extra lecture day is followed (*Provision for National Election Day in semester 2 depending on the day of the election – if no election is held in semester 2, this will become an Examination preparation day)*
9-27 November		Examination of third-quarter, fourth-quarter, second-semester, and year modules
29 November-5 December		Supplementary examinations of third-quarter, fourth-quarter, second-semester and year modules
5 December		Academic year ends
9 December		Last day for submission of supplementary examination marks of third-quarter, fourth-quarter, second-semester, and year modules
16 December		South African Official Public Holiday
23 December		University closes at 10:00
25 December		South African Official Public Holiday
26 December		South African Official Public Holiday
3 January 2025		Academic year commences

GRADUATION CEREMONIES 2024

15 April-17 May	Autumn Graduation Ceremonies
2-6 September	Spring Graduation Ceremonies
10 December	Graduation Ceremony for LLM in Human Rights

School Terms

Please consult the Department of Education: https://www.education.gov.za

South African Official Public Holidays: https://www.gov.za/about-sa/public-holidays

UNIVERSITY OF PRETORIA
ACADEMIC CALENDAR 2024
Explanation of lecture days for 2024

Semester 1: **19 February – 6 (*7) June**

Quarter 1: 19 February – 17 April

Mo = 7, Tu = 8, We = 8, Th = 6, Fr = 6 (35 lecture days)

Tuesday *19 March – Thursday timetable is followed*
Wednesday *20 March - Friday timetable is followed*

Quarter 2: 18 April – 6 (*7) June

Mo = 7, Tu = 7, We = 6, Th = 8, Fr = 7 (35 lecture days)

Thursday *2 May – Wednesday timetable is followed*
Friday **7 June – Timetable of extra lecture day is followed*
***** (***Provision for National Election Day in semester 1 depending on the day of the election – if no election is held in semester 1, this will become an Examination preparation day)***

Semester 2: **22 July – 7 (*8) November**

Quarter 3: 22 July – 9 September

Mo = 8, Tu = 7, We = 7, Th = 7, Fr = 6 (35 lecture days)

Monday *5 August – Friday timetable is followed*

Quarter 4: 10 September – 7 (*8) November

Mo = 7, Tu = 8, We = 7, Th = 7, Fr = 6 (35 lecture days)

Tuesday *17 September – Friday timetable is followed*
Friday **8 November – Timetable of extra lecture day is followed*
(Provision for National Election Day in semester 2 depending on the day of the election – if no election is held in semester 2, this will become an Examination preparation day)