UNIVERSITY OF NAIROBI
SCHOOL OF COMPUTING AND INFORMATICS

UNDERGRADUATE PROJECT GUIDELINES

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1. INTRODUCTION

The regulations require that students to undertake a programming project in the second year and a computer systems projects in the fourth year. Over the years the project guidelines have been revised taking into consideration shortcomings and experiences. The latest revision is meant to address the shortcomings with appropriate improvements formulated and incorporated into the process.

2. OBJECTIVES OF THE PROJECT

The objectives of the second year programming project are:

- Analyze, design, program and implement a small computer application system.
- Develop a project report in line with SCI project requirements and guidelines.
- Present and demonstrate a computer application system effectively
- Apply systems analysis and design as wells programming techniques and tools

The objectives of the fourth year computer systems project are:

- Demonstrate the consolidation and integration of the understanding of computer systems analysis and design.
- Tackle and successfully complete a computing problem of some complexity
- Demonstrate experience in self-organization, project planning and control.
- Implement a system prototype during the project period.
- Develop and present a project report in line with SCI's project requirements and guidelines

3. PROJECT MANAGEMENT GUIDELINES

3.1 SELECTION OF PROJECTS BY STUDENTS

Students are required to make their selection of their project by submitting a Project Proposal (see Appendix for sample) and submitting this to the project coordinator.

3.2 ALLOCATION OF SUPERVISOR(S) AND PANELISTS TO STUDENT PROJECTS

Having received all project selections, the project coordinator will coordinate the allocation of supervisors to students and the formation of project panels. This allocation should be done taking into consideration competency area, research interests, and equitable supervision load amongst all staff.

4. ROLES AND RESPONSIBILITIES

4.1 STUDENT

Students are expected to show capacity for independent work and initiative. Over-reliance on the supervisor could adversely affect the student's project assessment. Students must accept responsibility for every aspect of the project. In cases of difficulty the Director should be consulted. The responsibilities of the students include:

1. Keeping in regular contact with the supervisor.
2. Discuss and agree with the supervisor on the type of guidance and feedback needed
3. Agree on a schedule of meetings with the supervisor for reports on progress, ensuring that the agreed schedule is adhered to and any deadlines met.
4. Take the initiative in discussing any problems encountered during the project work and/or its supervision, so that these can be resolved as soon as possible.
5. Ensure that their project is scheduled for examination during each applicable milestone evaluation period, by liaising with the supervisor
6. Submit the project report and any associated deliverables in the specified format and on time.

4.2 SUPERVISOR

The primary function of the supervisor is to maintain overall, general guidance of the project and to provide a critical sounding board for student ideas and offer technical advice where necessary. The supervisor will therefore:

1. Assist the student to clarify the research topic and give feedback on the viability of the proposed problem and/or student ideas.
2. Direct the student to relevant sources of information
3. Advise on general research aspects such as appropriate methodologies/techniques, the School research guidelines and policies
4. Maintain regular supervisory contact and monitor student progress, in accordance to School policy.
5. Read and comment on key ideas described in the drafts of the project report, where this is requested by the student, and return such work with constructive criticism and in reasonable time.
6. Participate in assessment of the students report and oral presentation.

4.3 PANEL

The primary role of the panel is to examine the student's work during each of the project milestones. The panelists are expected to:

1. Read and examine the written reports noting any issues that need clarification during the oral presentation.
2. Attend and evaluate the oral presentation at each milestone of the student's progress.

3. Give useful criticism and feedback to the student after the oral presentation to help the student improve their work.

5. CSC 227 – SECOND YEAR PROGRAMMING PROJECT

5.1 The second year project equivalent to one course unit and should be considered as such when applying the rule of 1/3 for students who have failed some courses.

5.2 The project can be attempted a maximum of four times.

5.3 All second year project proposals must be submitted within the first two weeks of the second semester. Any second year proposal submitted after the second week and not latter than the fourth week of the second semester shall attract a penalty (10 % of the project proposal mark).

5.4 No project proposals for second years shall be accepted after the fourth week of the second semester

5.5 All project proposals must be registered with the respective project coordinators within the stipulated period as stated above, failure to which such proposals will not be recognized and will not be scheduled for final presentations, consequently the affected students shall take their projects in the next academic year.

6. CSC 416 - FOURTH YEAR SYSTEMS PROJECT

6.1 The project is equivalent to four (4) course units

6.2 The project can be attempted a maximum of two (2) times. A candidate who fails on the second re-submission of the project shall, on the recommendation of the Board of Examiners and approval by Senate, be discontinued from the programme.

6.3 All fourth year project proposals must be submitted within the first three weeks of the first semester. Any proposal submitted after the third week and not later than the fifth week of the first semester shall attract a penalty (10% of the project proposal mark).

6.4 No project proposals for fourth years shall be accepted after the fifth week of the first semester

6.5 All project proposals must be registered with the respective project coordinators within the stipulated period as stated above, failure to which such proposals will not be recognized and will not be scheduled for final presentations, consequently the affected students shall re-take the projects in the next academic year.

6.6 A fourth year proposal shall have two types of objectives, namely

- Research Objectives: Linked to and inform the system development objectives.
- System Development Objectives: Guide the development of the system e.g. systems design, testing, implementation etc.

7. MILESTONES

7.1 CSC 416: FOURTH YEAR PROJECT

Once the student has selected a project and a supervisor appointed, the student can officially start the project. The project will have three key milestones with associated deliverables.

	Task	Presentation Period	Product
Milestone 1	Proposal presentation	6th week of 1st Semester	Project Proposal
Milestone 2	Progress presentation	1st week of 2nd Semester	Progress Report
Milestone 3	Final presentation	1 week before start of exams (Week 13)	Project Report

7.2 CSC 227: SECOND YEAR PROJECT

	Task	Presentation Period	Product
Milestone 1	Proposal presentation	1st week of 2nd Semester	Project Proposal
Milestone 2	Final presentation	Last week of 2nd Semester	Progress Report

8. MARKS DISTRIBUTION

8.1 CSC 416: FOURTH YEAR PROJECT

Item	Marks
Milestone 1	10%
Milestone 2	10%
Milestone 3 - Panel Presentation	60%
Milestone 3 - Supervisor Assessment	20%
Total	**100%**

- To progress from milestone 1 to milestone 2, the candidate must attain 40% of the total mark for milestone 1 i.e. 4 out of 10.
- To progress from milestone 2 to milestone 3, the candidate must attain 40% of the total mark for milestone 2 i.e. 4 out of 10.
- For a project to be deemed to have passed, the candidate must have passed milestones 1 and 2. The candidate must also attain a minimum of 40% of Milestone 3 mark from panel presentation (at least 24 out of 60) and at least 40% of the aggregate marks from milestones 1, 2 and 3 i.e. at least 40 out of 100.
- Marks for Milestone 1 and Milestone 2 shall be communicated to the candidates.

8.2 CSC 227 SECOND YEAR

Item	Marks
Milestone 1	10%
Milestone 2 - Panel Presentation	40%
Milestone 2 - Supervisor Assessment	50%
Total	**100%**

- For a project to be deemed to have passed, the candidate must attain a minimum of 40% of the aggregate Milestones mark at each milestone. This implies that the panel shall give a mark for every project presented.

9. POSTPONEMENT OF PROJECT PRESENTATION

9.1 Postponement of a project can occur due to unforeseen technical (or otherwise) difficulties that result in degraded performance or failure to function of the student's project.

9.2 The panel may at its own discretion, grant the students an extra day to setup their project. As a result of failure to present at the scheduled time, the student shall not forego any marks.

9.3 If the student does not present within the periods referred to in 9.1 and 9.2 without a written explanation prior to the exam day, to the Director SCI, then they shall be deemed to have failed and will have to resubmit their project in the next academic year.

9.4 If the candidate writes to the Director SCI prior to the exam day as in 9.3 above, then the candidate will be expected to present the project within one week following the examination day.

10. RESUBMISSION

10.1 Resubmission occurs if the student fails to score 40% in the total project assessment marks, the student is deemed to have failed.

10.2 During resubmission, the student can choose either of the following options:

- ***Resubmit the same project***
  The same supervisor or a different supervisor will guide the student. If the supervisor is different, the student will have to provide him/her with a copy of their proposal.
- ***Submit a different project***
  The student will have to present a new proposal to their chosen supervisor.

10.3 A resubmitted project grade will be a PASS if the student passes and FAIL otherwise.

10.4 The resubmission shall take place within the next examination period.

11. PANELS

11.1 A properly constituted panel shall consist of at least 4 members of SCI academic staff including the supervisor

11.2 The supervisor must be present during the project presentation of their student

11.3 All panelists are expected to keep time or report any lateness prior to the commencement of the exercise

11.4 If a supervisor, for a good cause cannot be present, they shall appoint and brief a representative (an SCI Member of academic staff)

11.5 The supervisor shall not give marks during the panel assessment

11.6 If the panel decides that a student has failed, the supervisor need not assess the student report. The student will have to resubmit as applicable

11.7 The panel chair should send the compiled marks to the coordinator within two days of the assessment exercise

12. PRESENTATION

12.1 The student shall prepare a power point document that they will use for the presentation. This document shall give an overview of the work carried out by the student and a brief description of the project

12.2 All students should present themselves and register at their respective panels at 9.00 AM on the particular day. In case of lateness or failure to attend, the University examination rules shall apply

12.3 The supervisor shall take note the concerns raised and the improvements suggested during the presentation

13. DELIVERABLES

13.1 CSC 416 FOURTH YEAR PROJECTS

- The student must provide the following items to their supervisor before they can be cleared:
  - i) Two black hardcover bound copies of their project report
  - ii) Two appropriately labeled (name, registration number, year of presentation) CDs each of which contains the following:
    - ✓ A soft copy of the project report
    - ✓ The power point file used in the project presentation
    - ✓ The system source code
    - ✓ The executable or installable version of the system

13.2 CSC 227 SECOND YEAR PROJECTS

- The student must provide the following items to their supervisor before they can be cleared:
  - i) Two spiral bound copies of their project report
  - ii) Two appropriately labeled (name, registration number, year of presentation) CDs each of which contains the following:
    - ✓ A soft copy of the project report

- ✓ The power point file used in the project presentation
- ✓ The system source code
- ✓ The executable or installable version of the system

14. ANNEXURE

ANNEX 1: PROJECT PROPOSAL

ANNEX 2: STUDENT PROJECT LOG

ANNEX 3: FOURTH YEAR PANEL ASSESSMENT SHEET – PROPOSAL

ANNEX 4: FOURTH YEAR PANEL ASSESSMENT SHEET – PROGRESS

ANNEX 5: FOURTH YEAR S PANEL ASSESSMENT SHEET – FINAL

ANNEX 6: FOURTH YEAR SUPERVISOR ASSESSMENT SHEET – FINAL

ANNEX 7: SECOND YEAR PANEL ASSESSMENT SHEET – PROPOSAL

ANNEX 8: SECOND YEAR PANEL ASSESSMENT SHEET – FINAL

ANNEX 9: SECOND YEAR PROJECT SUPERVISOR ASSESSMENT SHEET - FINAL

Annex 1- Sample Project Proposal

Student Name	
Student Number	
Supervisor Name	
Project Title	
Year	

1. Overview of the Project

What is the project all about? Give a little background to the problem which you are addressing, why you have chosen this project, any collaborators (e.g. company, project sponsors etc).

2. Objectives for the Project

This is very important. You must CLEARLY and SPECIFICALLY state what the project objectives are, numbering them chronologically according to how you will achieve them. The success of the project will be judged against these.

Note: An objective is a single statement stated in measurable terms and is usually not justified or qualified

The B.Sc. project has two categories of objectives:

Research Objectives: You should have one or two such objectives to guide you on the research you will undertake to e.g. if you were building a knowledge based system for a client in the insurance industry, a possible research objective would be

- *Research into the application of knowledge based systems in the insurance industry*

1. **System Development Objectives:** These are the objective you will have to meet as you develop the system e.g.
   - *Gather requirements …*
   - *Design …*
   - *Implement …*
   - *etc*

3. Research Topics

You should clearly define the topics for academic research in the project and give a rationale as to why you are undertaking the stated research:

1 Research Topic 1 will be …
2 Research Topic 2 will be …

4. Constraints

If there are any constraints imposed on the project you must identify them. These are normally constrains imposed by the target hardware, the operating system etc. Time and lack of knowledge are not constrains, nor is the availability of key personnel! You have to plan to work round these issues.

5. Resources

Clearly identify what resources you will need for the project, and their source. For example, you might required a particular software package, or type of operating system, or hardware, or people. State what they are and how they will be used, e.g.:

- Java will be used for the development of the core software
- VB.Net will be used to develop the system interface
- Advice will be provided by Mr. J. Otieno, Production Manager, Jua Kali Enterprises Ltd, on the requirements for the new system
- A Pentium V personal computer and printer will be used at the developer's home for production of project documentation and for system development

6. Other Information

If there is any further information that you feel the supervision team should know, include it here.

Signed and Agreed

	Name	Signature	Date
Student			
Supervisor			

7. Project Schedule

Note: A task should normally be no more than 20 hours per task

Task No	Task Name	Planned Hours	Actual Hours	Planned Start Date	Actual Start Date	Planned End Date	Actual End Date	Deliverables*
1	Prepare Terms of Reference	10		10/1/2011		10/5/2011		Accepted TOR
2	Prepare Schedule and Gantt Chart	10		10/5/2011		10/9/2011		Schedule and Gantt Chart
3	Initiate Research, Order papers	20		10/9/2011		10/18/2011		Abstracts
4	Research for Topic 1	30		10/11/2011		12/12/2011		Formal Research Notes for Topic 1
5	Research for Topic 2	30		10/11/2011		12/5/2011		Formal Research Notes for Topic 2
Etc…	Etc…	Etc..		Etc...		Etc...		Etc...
	Total Hours	~270						

***Deliverables**

Deliverables are the tangible results of each task. Every task MUST have a deliverable, and these should be produced at supervision sessions and reviews as required. Note that progress in the project will, in part, be judged by the timely production and quality of the deliverables.

8. Project Gantt chart

Task No	Task Name	Planned Hours	Planned Start Date	Planned End Date	October	November	December	
1	Prepare Terms of Reference	10	1/10/2011	31/10/2011				
2	Prepare Schedule and Gantt Chart	10	5/10/2011	31/10/2011				
3	Initiate Research, Order papers	20	1/11/2011	18/12/2011				
4	Research for Topic 1	30	23/12/2011	15/1/2012				
5	Research for Topic 2	30	15/12/2011	21/1/2012				
Etc…	Etc…	Etc..	Etc...	Etc...				
	Total Hours	~270						

Annex 2

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Student's Project Log

Student Name:
Student Number:
Year:
Supervisor's Name:
Project Title:

Date	Supervisors Comments	Supervisors Signature
No of times student seen (Minimum = 5)		

Annex 3

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Fourth Year Project Panels' Assessment Sheet - Proposal

Names: _____Registration Number: _____

Project Title: _____

		Out of	Mark Awarded
1	**Title:** Gives a proper representation of the proposed project	1	
2	**Overview:** Introduces the project and gives a proper problem statement	2	
3	**Objectives:** Stated clearly and in measurable term. Should have both research and system development objectives	2	
4	**Methodology:** The formal development methodology should be explicitly stated	1	
5	**Resources:** The resources to be used should be clearly indicated	1	
6	**Schedule/Gantt Chart:** Should indicate that some thought was put into planning	1	
7	**Literature Review:** There should be some indication of some background reading having been done.	1	
8	**Student Presentation:**	1	
	TOTAL	**10**	
Panel's Comments			

Panel's Name: _____

Signature: _____ Date: _____/_____/_____

Annex 4

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Fourth Year Project Panels' Assessment Sheet - Progress

Names: _____ Registration Number: _____

Project Title: _____

		Out of	Mark Awarded
1	**Progress:** A description of the progress made with respect to the schedule/Gantt chart in the project proposal	4	
2	Response to issues raised during the Project Proposal phase (Milestone 1)	2	
3	Evidence of literature review: A draft chapter/chapters	2	
4	Evidence of system development: Requirements analysis, design, coding	2	
	TOTAL	**10**	

Panel's Comments

Panel's Name: _____

Signature: _____ Date: _____/_____/_____

Annex 5

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Fourth Year Project Panels' Assessment Sheet - Final

Names: _____Registration Number: _____

Project Title: _____

		Out of	Mark Awarded
1	**Problem Definition:** Definition /understanding and masterly of the problem area	7	
2	**Functionality:** Adequacy in the light of the problem definition Consider: • Whether all the objectives have been satisfactorily met (5); • Whether, overall, the solution addresses the problem (s) identified in the problem statement (5); • Viability/practicality of the solution (5); • Adequacy of the design features and style of the back-end such as normalization(10), • Level of integration of the back-end components (5)	30	
3	**Completeness / stability of the overall system:** The system is in a state to be used "as it is" or is there still work to be done to make it stable? -errors, hanging, security, etc.	4	
4	User interface / usability (ease of use, supportiveness [usefulness of error messages, etc.], naturalness [viz. problem area] consistency of interface, appropriateness of dialogue design, input/ output design, report design, screen design, color, highlighting, etc.)	5	
5	**Level of challenge:** Scope of problem versus difficulty of domain / problem and types and number of platforms used, etc.	10	
6	**Student Presentation:** Clarity, flow, communication, masterly of problem area and ability to explain, how challenges were handled, etc.	4	
	TOTAL	**60**	
Panel's Comments			

Panel's Name: _____
Signature: _____ Date: _____/_____/_____

Annex 6

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Fourth Year Project Supervisor's Assessment Sheet

Names: _____Registration Number: _____

Project Title: _____

No.	Section Assessed	Out of	Mark Awarded
1.	**Abstract:**	**1**	
2.	**Introduction:**	**1**	
3.	**Problem Definition:**	**2**	
4.	**Literature Review and Theory**: Discusses relevant previous work and any appropriate literature, references	**1.5**	
5.	**Methodology**: Contains a full account of the practical work undertaken. This may include Systems Analysis and System Design	**10**	
6.	**Results and Findings**: Contains a full account of the results obtained. This may include Implementation and Testing. Details include hardware platform used, choice of programming language, coding, testing, test data, sample outputs etc.	**3**	
7.	**Conclusions** and **Recommendations:**	**1**	
8.	**Appendices:** User Manual, Sample Code, etc.	**0.5**	
	TOTAL	**20**	
Examiners' Comments			

Supervisor's Name: _____

Signature: _____ **Date: _____/_____/_____**

Annex 7

Annex 8

University of Nairobi

School of Computing and Informatics

Second Year Project Panels' Assessment Sheet

Names: _____Registration Number: _____

Project Title: _____

		Out of	Mark Awarded
1	**Problem Definition:** Definition /understanding and masterly of the problem area	5	
2	**Functionality:** Adequacy in the light of the problem definition	5	
3	**Completeness / stability of the overall system:** The system is in a state to be used "as it is" or is there still work to be done to make it stable? -errors, hanging, security, etc.	5	
4	User interface / usability (ease of use, supportiveness [usefulness of error messages, etc.], naturalness [viz. problem area] consistency of interface, appropriateness of dialogue design, input/ output design, report design, screen design, color, highlighting, etc.)	10	
5	**Level of challenge:** Scope of problem versus difficulty of domain / problem and types and number of platforms used, etc.	5	
6	**Student Presentation:** Clarity, flow, communication, masterly of problem area and ability to explain, how challenges were handled, etc.	5	
7	**Report Format:** Structure of report, format, completeness, etc	5	
	TOTAL	**40**	
Panel's Comments			

Panel's Name: _____

Signature: _____ Date: _____/_____/_____

Annex 9

University of Nairobi

School of Computing and Informatics

Second Year Project Supervisor's Assessment Sheet

Names: _____Registration Number: _____

Project Title: _____

No.	Section Assessed	Out of	Mark Awarded
1.	**Abstract:**	**2**	
2.	**Introduction:**	**3**	
3.	**Problem analysis:**	**10**	
4.	**Systems design:** Student should indicate and demonstrate the methodology used	**15**	
5.	**Systems implementation:** Includes Implementation and Testing. Details include hardware platform used, choice of programming language, coding, testing etc.	**15**	
6.	**System evaluation in relation to the problem:** Through sample data, sample outputs etc	**10**	
7.	**Conclusions** and **Recommendations:**	**2**	
8.	**Appendices**: User Manual, Sample Code, References, etc.	**3**	
	TOTAL	**60**	
Supervisor's Comments			

Supervisor's Name: _____

Signature: _____ **Date: _____/_____/_____**