# MUTEESA 1 ROYAL UNIVERSITY

FACULTY OF SCIENCE AND TECHNOLOGY DEPARTMENT OF INFORMATION

TECHNOLOGY

# FINAL YEAR RESEARCH PROJECTS GUIDELINES MANUAL

**PREPARED BY: NAKIBUULE CATHY BIT (MRU)**

**PLACE: Kampala - Uganda**

**RESEARCH PHASES**

In accordance to the university curriculum, all third year students (degree) must undertake a research project as one of the criteria for the award of the BSC CS/BA IT/BSSE/DIT of MUTEESA 1 ROYALUniversity.

All project work submitted to the supervisor/research coordinator, must be typed. Students can either use Microsoft word or Latex software in typing their work. No hand written work/submissions will be accepted.

There are basically two phases of the final project;

# PHASE ONE

1. **Identification of a project by the student**

Students have to decide on what they want to do. One has to consider his/her expertise, interests, experience, and the resources available.

In this step, the student is advised but not limited to pick on an area of interest from the centre where he/she did his/her internship. This should be in relation to one of the subject areas which were undertaken during the course of study in the university.

However, if a student fails to identify a project from the place of internship, then in conjunction with the Research coordinator/member of the faculty staff, a student may pick on another project.

It should be noted that previously done projects cannot be chosen, as this will be evaluated as plagiarism.

# Writing of a concept Paper

After choosing a topic of research, then the student has to write a concept paper, which should be submitted to the research coordinator. A student is expected to identify a researchable area and hand in a brief document (concept paper) of a maximum of 5 pages.

A week after, a student should obtain feedback from the Research coordinator about the concept paper. If the concept paper is approved; a student pick on a supervisor/ a supervisor(s) is allocated to the student who is expected to spend a maximum of 2 months working on the proposal (document must be developed as specified above).

If the Concept Paper is not approved, the student should be advised by the Department or could be assigned another topic by the department and still be allocated a supervisor(s) to work with.

*Format of the concept paper: See appendix 1*

# Writing of the Proposal

The aim of the project proposal is to enable evaluation of your proposed study, and to ensure that any difficulties are identified. The proposal should be discussed with the supervisor prior to submission.

The document should provide reviewers with an outline of your project, giving sufficient detail to enable reviewers to make constructive comments that may then be incorporated into the project design.

The proposal should be between 15 – 20 pages, Spacing: 1.5, Font type: Times New Roman, Font size: 12 px.

# N.B: Every student must submit a progress report after every two months to the research coordinator. A progress report consists of two sections one filled in by the student and the other filled in by the supervisor. This will enable the faculty monitor the student’s progress with the project. See appendix 2

**Proposal Format**

Title Page See Appendix 3

1. Introduction
   1. Background to the Study
   2. Statement of the Problem
   3. Objectives
      1. General Objective
      2. Specific Objective
   4. Scope
   5. Significance of the Study / Justification
2. Literature Review

Research questions if any should be at the end of the Literature Review

1. Methodology
   1. Research Design
   2. Target Population
   3. Sample size
   4. Sampling Technique
   5. Data Collection Techniques
   6. Data Analysis
   7. Modeling, design, and system development tools.
2. References
3. Appendices
   1. Financial Budget
   2. Time Budget
   3. e.t.c

After approval by the supervisor, one copy of the proposal (spiral Bound) is to be submitted to the Research Office, together with the progress report and the Proposal approval letter. After which a student is expected to proceed with the Implementation of the project.

# PHASE TWO

This phase is typically undertaken after the proposal has been approved by the Supervisor, and all the necessary documents submitted as specified above.

N.B: Students have to continue submitting their progress reports after every two months.

When the supervisor and the student come to compromise that the project report is fully well written, and the implemented project is fully running, then the student will go one to submit 4 spiral-bound copies of their Project Report and Progress Reports to the Research Coordinator so that a panel can be constituted for the project presentation. This should be done before

When project reports are in, the research coordinator will organize for a panel of examiners, to which the student will present/defend his/her project.

The Research coordinator will distribute the student’s books to each member of the panel and then a Project Presentation will be held upon notifying the student.

During the presentations, a student is expected to demonstrate their Implementation. Project Presentation is for purposes of assessing the candidate’s in-depth knowledge of his/her registered work and attach ownership to the Project report.

After examination, in case of revision/corrections being required, one of the internal examiners will foresee the effecting of the changes required.

Incase of failure, the candidate may be advised to redo the work or to discontinue from the degree program.

# PROJECT REPORT FORMAT

1. Title Page (Not numbered)
2. Declaration
3. Approval
4. Dedication (optional)
5. Quote (optional)
6. Acknowledgement
7. Table of Contents
8. List of Tables
9. List of Illustrations (Figures) (where applicable)
10. Abbreviations (Acronyms) (where applicable)
11. Abstract

CHAPTER 1: Introduction:

This should appear as Chapter 1. This is an overview of the project report highlighting the background, statement of the problem, purpose / aim, objectives, significance/justification, scope, major findings and recommendations.

CHAPTER 2: Literature Review:

CHAPTER 3: Methodology

* 1. Research Design
  2. Target Population
  3. Sample size
  4. Sampling Technique
  5. Data Collection Techniques
  6. Data Analysis
  7. Modeling, design, and system development tools.

CHAPTER 4: Presentation and Interpretation of Results/Discussion of Results CHAPTER 5: CONCLUSION

* 1. Findings
  2. Recommendations
  3. Limitations
  4. Conclusions/Summary
  5. Areas of further research

1. Final Project Report Presentation

All students scheduled for presentation are required to prepare slides in Power point, which would be used by the student during presentation.

Each Scheduled student must submit his/her slides to the research coordinator 24 hours before the presentation.

Each Presentation will last for 20 minutes, with the student given 10 minutes to present, 5 minutes to demonstrate the implementation/system and the panel given 5 minutes to cross examine the student.

The Slides must not exceed 10 in number and should include the following;

1. Title slide.

Include your name, project title, supervisor, etc

1. Problem Description or statement.

The student has to give a high-level introduction to the research area in general and state specifically what problem has been researched. An Explanation of why the area and specific problem is important, interesting and nontrivial to solve.

1. Problem Background and Related Work. The student has to give some background of what has been done. Have academics already written papers on this topic? What do those papers contain? Why will the research be different? Have industrial researchers or companies already built related software? How will the prospective software be different? The student has to find out the most closely related pieces of work and explain the relationship to your proposed research.
2. Methodology. The student has to explain, as clearly as possible, what steps to be taken to solve the problem. What papers will be needed to read? What mathematics will be needed to learn? What algorithms will be defined? What software infrastructure will be built (pictures can help explain the software architecture)? What data sources will be needed to obtain to perform effective experiments?
3. Anticipated Out come. The student has to explain what he/she anticipates to achieve. What experiments will you do to prove that your ideas are successful?
4. Conclusion. Sum up the most important aspects of the talk concisely.

# FINAL SUBMISSION OF PROJECT REPORT

* + An award is recommended upon receipt of a letter from the supervisor/internal examiner ascertaining that all identified corrections in the project report, have been effected to his/her satisfaction. (See Appendix 8: Final Project submission letter)
  + The candidate can then go ahead and bind 3 copies of his/her Project Report (Spiral/Hard copy)
  + The 3 copies are then submitted to the Research coordinator together with a CD ROM containing the Project Report as well as the Implementation.
  + In case of Plagiarism, the candidate will be recommended to the University Disciplinary Research for dismissal from the degree program.

# APPENDIX 1: CONCEPT PAPER FORMAT (This line shouldn’t appear on the

**concept paper)**

[ P R O J E C T T I T L E ]

By

[NAME AND REGNO: ] DEPARTMENT OF [DEPARTMENT NAME]

# FACULTTY OF SCIENCE AND TECHNOLOGY

A Concept Paper submitted to the Faculty of science and Technology For the Study Leading to a Project Proposal in Partial Fulfillment of the Requirements for the Award of the Degree of Bachelor of

[course Eg. Science in Computer Science] Of Muteesa1Royal University

December 2012

*How to use this Template:*

*Change the information on the cover page to reflect your concept paper. For the all text use* ***Font Type Times Roman Font Size 12*** *with* ***spacing of 1.5****.*

*To Save the Template for further use:*

*On the* ***File*** *menu, click* ***Save As****. In the* ***Save as*** *type list, click* ***Document Template****. To Create a document from the template:*

*On the* ***File*** *menu, click* ***New*** *to reopen the template as a document*

1.0 Introduction

E.g The registration process in the faculty has overtime been run down due to large numbers of students……. [ max. 3 lines ]

2.0 Background to the Problem

E.g The registration process has been bogged down ……. [ max. 15 lines ]

3.0 Problem Statement

The problem this project will address is …….[ max. 10 lines ]

* 1. Objectives
     1. Main Objective [ max. 2 lines ]
     2. Other Objective

[ min – 2 objectives . max – 4 objectives ]

5.0 Methodology

{ Methodology used to achieve stated objectives } [ max. 15 lines ]

6.0 Outcomes

{ Include targeted outcomes of the project - what the project will achieve/produce at the end of the day} [ max. 10 lines ]

7.0 References

{ Atleast 2 references }

# Appendix 2: Progress Report (This Line shouldn’t appear on the report) MUTEESA 1 ROYALUNIVERSITY

**FACULTY OF SCIENCE AND TECHNOLOGY DEPARTMENT OF INFORMATION TECHNOLOGY**

Progress Report for the (First/Second quarter) of Research please delete where applicable

# Part A: To be filled by the Student

1. Name ………………………………………………… Reg no: ………………

2. Faculty ………………………………………………………………………….

3. Degree Registered for …………………………………………………………..

4. Supervisor’s name ………………………………………………………………

1. Indicate how often you meet your supervisor

……………………………………………………………………………………………

……………………………………………………………………………………………

1. Give a summary of your progress this quarter (On a separate sheet)
2. Did you experience any problems during this quarter?

……………………….

1. If yes, what are they?

………………………………………………………………………………………….

………………………………………………………………………………………….

………………………………………………………………………………………….

1. Give your own evaluation of the work you have so far done

………………………………………………………………………………………….

………………………………………………………………………………………….

………………………………………………………………………………………….

1. 10.Any other comments

……………………………………………………………….……………………………

…………………………………………………………………………………………….

Signature ……………………………… Date: ……………………………………..

# Part B: To be filled by the Supervisor

1. Name ……………………………………………………………………………

1. Indicate how often you meet the student

…………………………………………………………………………………

…………………………………………………………………………………

1. Give a summary of the student’s progress this quarter

………………………………………………………………………………………….

………………………………………………………………………………………….

………………………………………………………………………………………….

………………………………………………………………………………………….

………………………………………………………………………………………….

………………………………………………………………………………………….

1. Indicate the problems if any you have experience in meeting/contacting the student.

………………………………………………………………………………………….

………………………………………………………………………………………….

………………………………………………………………………………………….

………………………………………………………………………………………….

1. Give your own evaluation of the student’s work so far

………………………………………………………………………………………….

………………………………………………………………………………………….

………………………………………………………………………………………….

………………………………………………………………………………………….

1. Any other comments

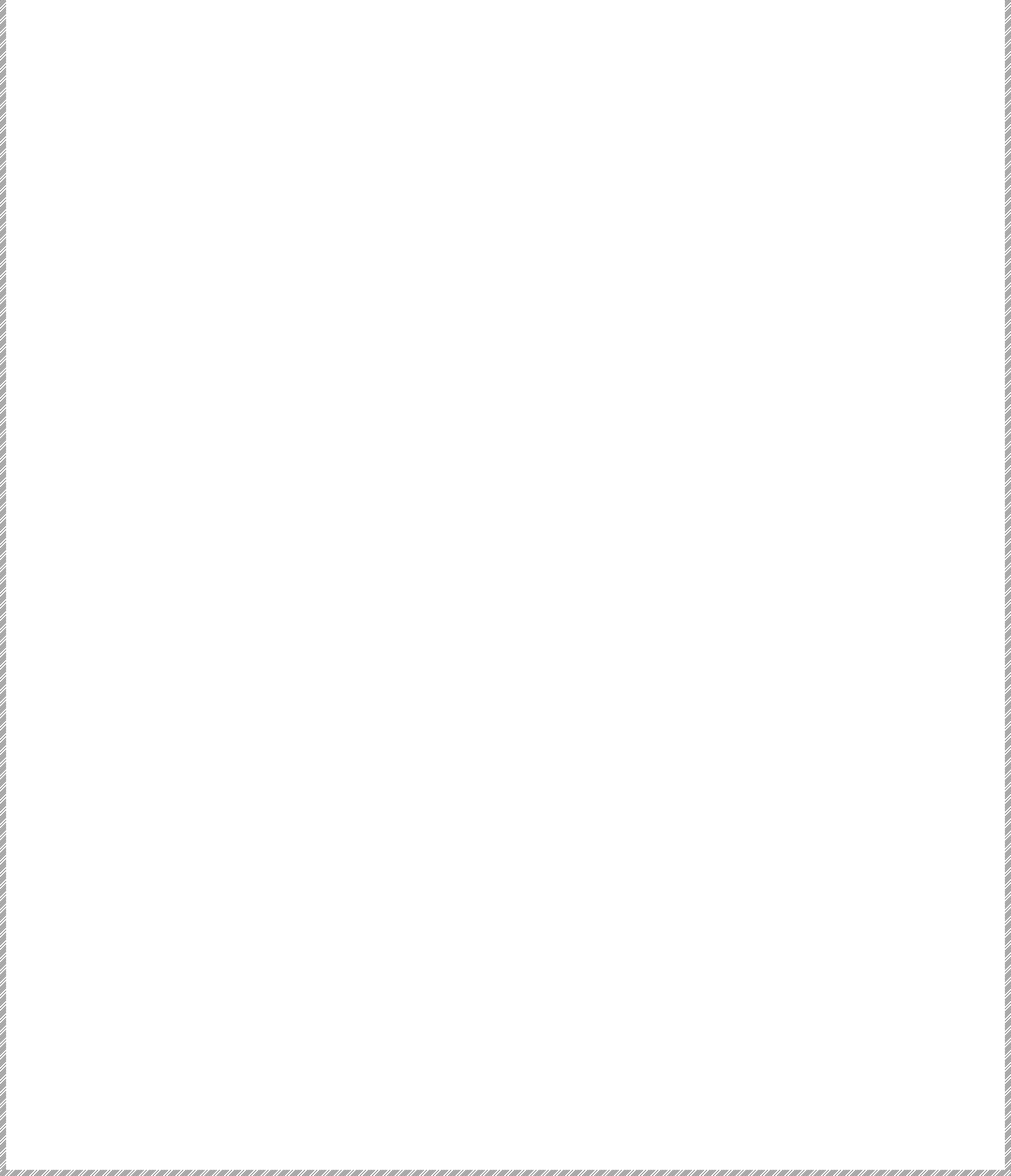
……………………………………………………………….……………………………

…………………………………………………………………………………………….

Signature ………………………………

Date: ………………………………………..

# APPENDIX 3: PROJECTS PROPOSAL TITLE PAGE (Don’t include this line on the proposal page)



[ P R O J E C T T I T L E ]

By [Name]

DEPARTMENT OF [DEPARTMENT NAME] FACULTY OF SCIENCE AND TECHNOLOGY

A **Project Proposal** Submitted to the Faculty of science and Technology for the Study Leading to a Project in Partial Fulfillment of the Requirements for the Award of the Degree of Bachelor of

[course Eg. Science in Computer Science] of Muteesa I Royal University.

Supervisor

[Supervisor Name] Department of [Department Name]

``````Faculty of Science, Technology, Engineering, Art and Design MRU

December, 2022.



*How to use this Template:*

1. *Change the information on the cover page to reflect your concept paper.*
2. *The rest of the report should adhere to :-*

Body Text : Font – Garamond 12

Headings : Chapter ( Garamond 22 ), Chapter title eg. Lit Review ( Garamond 18 ) Section eg.

1.0 Introduction ( Garamond 16 ) References & Appendices ( Garamond 18 ) Indents & Numbering: Should be of format E.g.:

Literature Review

* 1. Information Systems ( Garamond 16 )
     1. Management Information Systems ( Garamond 14 )
        1. e-Bank MIS
           1. Banking Procedures

1. *Each chapter should begin on a new page. Leave a header space of 3 lines of Garamond 22 size.*
2. *Use single spacing for the body text.*
3. *All body text must be justified*
4. *The proposal should not exceed 20 pages*

Requires careful formulation and refers to what has been identified and needs a solution in the practical world, theoretical world or both.

Chapter 1 Introduction

1.1 Background

This provides the rationale of the study providing evidence and conditions of the existing situations to make the reader feel the urgency of the problem and the need to study in order to solve it or contribute to its solution.

(i) Within the first sentence, try to capture the thrust of your research.

(ii) Avoid circular reasoning.

(iii) Make your introduction interesting in order to capture the interest of your audience.

1.2 Problem Statement

1. Should clearly state the nature of the problem and its known or estimated magnitude/extent locally, regionally or even globally.
2. Should be concise and brief ( not more than 1 paragraph )
   1. Objectives
      1. Main Objective

Refers to the general intention of the project.

* + 1. Specific Objectives

These are specific aims/objectives arising directly from the main objective of the study. For each specific objective one must have a method to attempt to achieve it. [Clearly stated in methodology]. Specific objectives should advisably not exceed four in number.

Specific Objectives should be:

1. Clear, specific and concrete
2. Realistic and achievable
3. In order of importance
4. Measurable
   1. Scope ( where applicable )

The scope provides for the boundary of the research in terms of depth of investigation, content, sample size, geographical and theoretical coverage.

* 1. Significance

This refers to the relevance of the project in terms of academic contributions and practical use that might be made of the findings. It should reflect on knowledge creation, technological and socio-economic value to the community. It should :-

1. Convince readers of the importance of the proposal
2. Show how the project will contribute to theory or practice.
3. Indicate whether the research is still important; whether such work has been done before.

Chapter 2 Literature Review

* 1. xxxxxxxxxxxx

This section consists of a critical review of research work from journals, internet sources and other projects already done which is related to the subject area as well as an analysis of existing literature on the subject with the objective of revealing contributions, weaknesses and gaps. Specifically :-

* + 1. The literature review should be in accordance with the themes of the study and should reflect the problem, objectives and the methodology.
    2. Citations should be in accordance with the approved format. The source of the works cited should be documented by giving the author(s) surname(s) and data of publication.
    3. Every citation should appear in the reference list.

Chapter 3 Methodology

* 1. xxxxxxxxxx

This is a detailed description of selected methodology i.e. step-by-step methods of how one intends to achieve the objectives of the study/research.

This section comprises of research/project design which describes the tools, instruments, approaches, processes and techniques, major algorithms and data structures to be employed in the research study, data collection, analysis, synthesis, design, logical flow, implementation, testing, validation etc

References

This is a list of all works cited in the proposal and should be written according to the approved format.

*Referencing Styles:*

One Author :

Brown (2002) [1] recommends that information systems should be user friendly……. The analysis is based on Mugabi (2005) [2] in which four solutions are suggested…… Two Authors :

According to Krich and Ponte (1998) [3], diseases can be modeled using mathematical algorithms. Brown and Green (2000) [4] found that models improved health care provision

More than two Authors :

Brown *et al.* (2000) [5] found that………..

Examples of References in the Reference List Journal article, one author

* + 1. Brown, A.M. (2002). Information Systems: A requirements analysis. *International Journal of Information Systems*, **21** : 213 – 225. ( {Volume Number}:{Page Number Range} )

Journal article, two authors

1. Krich, M. and Ponte, P. (1998). Mathematical models for disease patterns. *IJM Medical Journal*, **32** : 162 – 179.

Book, one author

1. Tanenbaum, A. (2003). *Computer Networks*. New Jersey : Prentice Hall Press. Chapter or section in an Internet document
2. Benton Foundation. (1998). Barriers to closing the gap. In losing ground bit by bit: *Low-income communities in the information age* (chap. 2). Retrieved March 23, 2007, from<http://www.bentonfroundation.org/library/low-income/two.html>

**18 |IT Final Year research guidelines**

{ In following these examples take note of the *italicized* words and the **bolded** words – your work should follow this format }

Appendices

This section comprises of a budget, time frame, explanatory notes ( eg. List of places to be visited, approval letters, maps etc ) and instruments to be used ( eg. Questionnaire, interview schedule etc ).

# Appendix 4: Proposal approval Letter (Don’t include this line on the letter)

**PROPOSAL APPROVAL LETTER**

<<Date>>

The Dean,

Faculty of Science and Technology, MUTEESA 1 ROYALUniversity

Dear Sir,

RE: Student Name <<>> Registration Number <<>>

Following the Bachelors Degree project Proposal Presentations for the ICT faculty, held on the <<Date>>, this is to confirm that <<Student

Name>> and <<Registration Number>> has effected all the minor corrections on

the Proposal titled “title of Proposal”, to my satisfaction.

I therefore recommend the student to proceed with the Research. Yours truly,

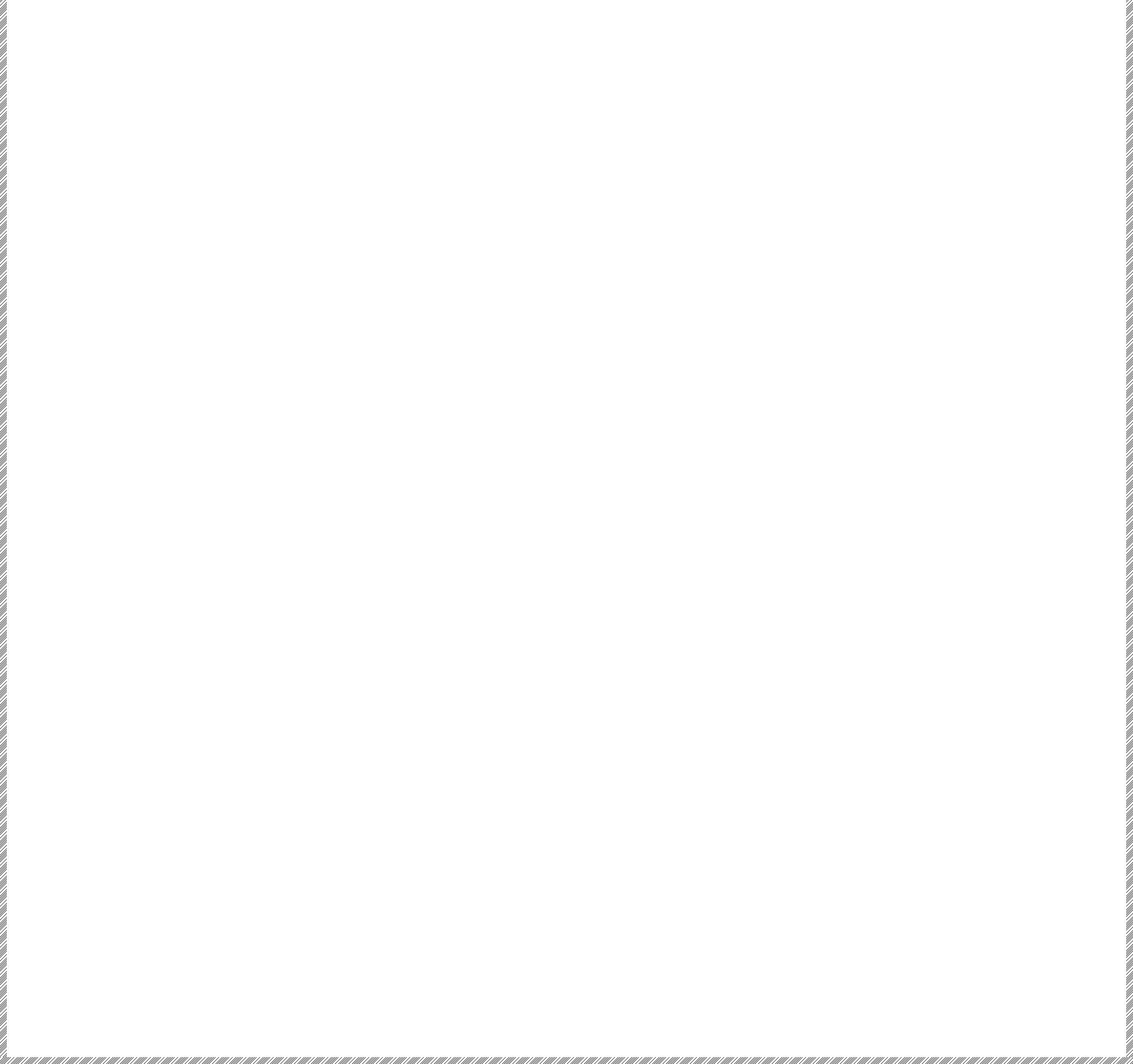
<<Name>> Supervisor/H.O.D

C.C : Research coordinator

Faculty of Information communication and Technology

# Appendix 5: PROJECT Report TITLE PAGE (Don’t Include this line on the title page)

[ P R O J E C T T I T L E ]



By

[Name]

Student’s Email Address: <>, Tel: <>

DEPARTMENT OF [DEPARTMENT NAME] FACULTY OF SCIENCE AND TECHNOLOGY

A **Project Report** Submitted to the Faculty of science and Technology in Partial Fulfillment of the Requirements for the Award of the Degree of Bachelor of

[course Eg. Science in Computer Science] of Muteesa 1 Royal University.

December, 2012.

# Appendix 6: Declaration (Don’t include this line on the Declaration page)

Declaration

I <<student name>> do hereby declare that this Thesis/Dissertation/Project Report is original and has not been published and/or submitted for any other degree award to any other University before.

Signed……………………………………… Date……………………………………

<<Students Name>>

<<Department>>

<<Faculty>>

# Appendix 7: Approval pages (Don’t include this line on the approval page)

SUBMITTING FOR EXAMINATION

Approval

This Thesis/Dissertation/Project Report has been submitted for Examination with

the approval of the following supervisor/s.

Signed:………………………………… Date:………………………………………

<<Supervisor’s Name>>

<<BSc (Agric), PGD, MSc, >>

<<Department>>

<<Faculty>>

Signed:………………………………… Date:………………………………………

<<Assistant Supervisor’s Name>>

<<BSc (Agric), PGD, MSc, >>

<<Department>>

<<Faculty>>

Signed:………………………………… Date:………………………………………

<<Student’s Name>>

<<Department>>

<<Faculty>>

# FINAL SUBMISSION

Approval

This Thesis/Dissertation/Project Report has been submitted with the approval of

the following supervisor/s.

Signed:………………………………… Date:………………………………………

<<Supervisor’s Name>>

<<BSc (Agric), PGD, MSc, >>

<<Department>>

<<Faculty>>

Signed:………………………………… Date:………………………………………

<<Assistant Supervisor’s Name>>

<<BSc (Agric), PGD, MSc, >>

<<Department>>

<<Faculty>>

Signed:………………………………… Date:………………………………………

<<Student’s Name>>

<<Department>>

<<Faculty>>

# Appendix 8: Final Submission Letter (Don’t include this line on the letter)

FINAL PROJECT SUBMISSION LETTER

<<Date>>

The Dean,

Faculty of Science and Technology, MUTEESA 1 ROYALUniversity

Dear Sir,

RE: Student Name <<>> Registration Number <<>>

Following the Bachelors Degree final project report Presentations for the ICT faculty, held on the <<Date>>, this is to confirm that <<Student

Name>> and <<Registration Number>> has effected all the minor corrections on

the Report titled “title of Project Report”, to my satisfaction.

I therefore recommend the student for the award of the Bachelors Degree of Technology with Honours in Science and Technology of MUTEESA 1 ROYALUniversity

Yours truly,

<<Name>> Supervisor/H.O.D

* 1. : Research coordinator Faculty of Science and Technology

# Appendix 9: REFERENCING

Referencing Styles Adopted by the Faculty of Science and Technology

The faculty has decided to adopt the APA referencing style for the projects to be done by its students.

Check <http://linguistics.byu.edu/faculty/henrichsenl/apa/apa01.html>or <http://en.wikipedia.org/wiki/APA_style> for detailed information on this format of citation.

What is Referencing?

Referencing is a system used in assignments to indicate where evidence, ideas, theories, facts, or any other information was found. It is used in both spoken and written work. Why should I include references in my work?

Why should one reference?

You should include references in order to:

. acknowledge the work of others

. provide evidence of your own research

. illustrate a particular point

. support an argument or theory

. allow others to locate the resources you have used

. And most importantly: avoid accusations of plagiarism

Plagiarism is considered cheating, as you have taken the words or ideas of other people and passed them off as your own. The University takes cases of plagiarism very seriously.

A Student caught plagiarizing will face disciplinary procedures which could ultimately result into expulsion.

What is Plagiarism?

It’s generally defined as ‘using the work of another person and presenting it as one's own’ by not correctly referencing the source of information.

The most common forms of plagiarism are:

* + - Copying words directly from the original source, with no referencing
    - Copying words directly, but presenting them as though they were paraphrased
    - Paraphrasing from a source, but using no referencing
    - Copying all or part of another student’s work or research
    - Submitting the same assignment, or parts of the same assignment, for two or more different subjects
    - Submitting an individual assignment that is similar, or very similar, to other
* students (this may happen if you research and prepare an individual assignment with a group)
  + - Submitting an assignment with your name on it, but that was written, either in part or in whole, by another person
    - Even if you have not used someone's exact words, but have rephrased their ideas you need to give your sources.
    - The idea is that someone else reading your work should be able to recognize the difference between your work and someone else's.
    - You need to provide them with enough information about your sources that they could find the source for themselves.

Examples of Citations:

Single Author

It has been proven that married men are more likely to stay out late at night playing poker than unmarried ones (Tebaasoboke, 2008).

Two Authors

Assessment enables students to fully understand how far they have achieved their learning goals through effective feedback (Elwood and Klendowski, 2002).

Multiple Authors

Learning styles are methods, through which learners perceive, interpret and processes information (Bergeron et. al., 2003).

REFERENCES:

It should be noted that references MUST be in alphabetical order

1. Bakkiddaawo, X. (2006). The troubles People go through. Proceedings of the Emotional Conference. 2 (12), 23-26.
2. Bergeron, D. P., Rosen, D.H., Arnau, R.C. and Mascaro, N. (2003). Picture Interpretation and Jungian Typology. Journal of Analytical Psychology, 48 (1), 83-99.
3. Elwood, J. and Klendowski, V. (2002). Creating of Shared Practice: The Challenges of Assessment Use in Learning and Teaching, Assessment & Evaluation in Higher Education, 3, 243-256.
4. Tebaasoboke, F. (2008). The Eccentricities of Men in the Modern Age. Fountain Publishers. Kampala.

Other examples:

Journal Article: where the page numbering continues from issue to issue Dubeck, L. (1990). Science fiction aids science teaching. Physics Teacher, 28, 316-318.

Magazine Article

Wilcox, R. V. (1991). Shifting roles and synthetic women in Star trek: The next generation. Studies in Popular Culture, 13 (2), 53-65.

Magazine or Journal Article from a Database (for journal articles, do not include the month – see above)

Mershon, D. H. (1998, November/December). Star trek on the brain: Alien minds,

human minds.

American Scientist, 86(6), 585. Retrieved July 29, 1999, from Expanded Academic ASAP database.

Book

Duffy, T.M., and Cunningham, D.J. (1996). Constructivism: Implications for the

design and delivery of instruction, in Handbook of research for educational communications and technology, D.H. Jonassen (Ed.), New York: MacMillian Library.

Okuda, M., & Okuda, D. (1993). Star trek chronology: The history of the future.

New York: Pocket Books.

Short, J., Williams, E., & Christie, B. (1976). The Social Psychology of Telecommunications. John Wiley, New York.

Website

Lynch, T. (1996). DS9 trials and tribble-ations review. Retrieved October 8, 1997,

from Psi Phi: Bradley's Science Fiction Club Web site: <http://www.bradley.edu/campusorg/psiphi/DS9/ep/503r.html>

# Appendix 10: STARTING ON YOUR RESEARCH PROJECT -CHOOSING A TOPIC

Introduction

These notes have been prepared to aid undergraduate students, gain more incites into undertaking a project work. This has been designed in particular interest for the students of Faculty of Science and Technology.

In particular, described here are the aspects of the successful project which will enable you, the student, not only to get a good mark for your completed work, but also to learn a lot during the process of completing it.

* 1. : These notes are aimed to at throwing more light into the research process.

There are other sources which could provide more insight into the process. Supervisor’s advices can not be ignored in the whole process of writing your research project.

What is research?

Research is a process of investigation, an examination of a subject from different points of view. It’s not just a trip to the library to pick up a stack of materials, or picking the first five hits from a computer search. Research is a hunt for the truth.

It is getting to know a subject by reading up on it, reflecting, playing with the ideas, choosing the areas that interest you and following up on them. Research is the way you educate yourself.

Research is defined as human activity based on intellectual application in the investigation of matter. The primary aim for applied research is discovering, interpreting, and the development of methods and systems for the advancement of human knowledge on a wide variety of scientific matters of our world and the universe. Research can use the scientific method, but need not do so.

What are the benefits of the final year Research project to the students?

. The development of skills to function more independently

. The opportunity to put classroom knowledge into practice

. The identification of career interests

. The building of mentor relationships between faculty and students

. The stimulation that comes with critical thinking

. The opportunity to participate in new discoveries

. The ability to better understand research methodologies

. The stimulation of creativity

. The increased likelihood of acceptance into graduate or professional school

. The ability to communicate to a wide audience

. Recognition by one's peers

. The sheer excitement created by intellectual activity

. The opportunity to earn wages or academic credit

. The enhanced ability grasp the philosophy of life-long learning

. Given that undergraduate project is one of the course units, it’s evident that the student must score a good grade so as to pass.

Remember, if you fail the project, you will be required to re-do it, until you satisfy the examiners. Remember, a good mark raises your CGPA and the reverse is true.

# STARTING A RESEARCH PROJECT

* + - Draft a work plan as soon as possible and try to keep within the schedule.
    - A work plan is never final: change it when you need to. Its main purpose is to give feedback on how long you will still need and to stop you from being too detailed at the beginning and dropping important issues at the end due to a deadline. Get all changes to your work plan checked with your supervisor.
    - Locate review articles. Review articles summarize whole research areas and show how the most important topics in a field are related to each other and what current research topics are. They are an efficient time saver. First, because you will easily get the most important references and second, because they contain most of the material you will need for your "related work" section of your thesis.
    - Find out what are the most important conferences in your field.
    - There are several ways to accomplish this: asking your advisor, reading the reference sections of the papers he/she handed you, doing a search on the web, or searching the library (but asking a supervisor is usually sufficient). The single most important advantage of using the web is that there is a very high probability that someone has already compiled links on the topic.
    - Check out the home pages of the authors and their institutions.
    - Keep in mind that papers are usually written almost a year before they actually make it to print. The most recent information is often found on the web pages of the people or institutions.
    - Write down your ideas while reading, because the "oh, I won't forget this one" does not work. Think about how to store these ideas and how you can retrieve them. Sketching on paper and later elaborating them with a word processor that has a "find" function is usually a good idea. Use diagrams whenever possible. Experience shows that you will be using them over and over again. Drafting them early on saves a lot of work later.
    - Find out which resources you can access. What resources do you need and cannot do without? E.g. if you do not have access to necessary hardware, you should think of an alternative way to do the practical part of your project as early as possible.
    - Do not underestimate the value of backups, both of your paper drafts and your text files on the computer. We recommend that you back-up on at least four levels. Not only will this help you in an emergency. It will also make you feel safe so you do not have to worry about the odd system crash.

READING RELATED WORK

* Once you have worked out what is currently going on in your field, you might want to check some other publications by either consulting the respective homepages or use search.
* Additionally, check out the workshops that are held at the big conferences. Another good point to check for current research is journals. Check the web for the current research journals, for a preview of the articles.
* Although you are a very intelligent and creative person, people in the research community are very likely to have thought of similar problems and solutions as you do. They are also very likely to have not thought of exactly the same problems and the same solutions as your have. The similarities and differences are a very thoughtful source of new ideas. An hour reading is an hour well spent.
* However, finding the right literature is a challenging task. A very good starting point is the proceedings of most important conferences in your field. If you can make out prominent researchers in your field, look for others that cite them.
* Also try to find review papers of the related fields and look for the corresponding fields, or you can attend a workshop/ conference where people will tell you.

# SUPERVISORS

Throughout the whole project period, your supervisor will suggest avenues for you to explore. Make the most of your supervisor's suggestions. Even if you disagree with them, follow them up at least far enough for you to be able to justify your disagreement, both face-to-face and, later, on paper when you write your report.

It has been said that a failure to be supervised is the most common reason why a final-year project fails. Your supervisor wants you to succeed: a failing project reflects badly on the supervisor, just as supervisors often rejoice in the reflected glory of a first-class project.

No-one can force you to accept your supervisor's advice, but you must at least consider it, and be prepared to say why you did not follow it. We, the supervisors, can all recognize the danger signs. Remember also that we were students too, once upon a time, and most of us can still remember clearly what it was like to do a project!

It is a Faculty rule, set out in the regulations, that students who are carrying out project work must normally meet their supervisor at the agreed upon time.

# HOW TO CHOOSE A PROJECT TITLE

These project titles have been provided to give an insight on how, one can draft his or her project title. Please note that these projects have already been done by someone else and cannot be chosen as it will lead to plagiarism. However, you can choose something along that line or identify a gap in the project, thus using that project as a reference.

Remember it’s always a rule to acknowledge the source of your works.

# COMPUTING TECHNOLOGY

Areas of interest will include, but not limited to the following; Topics of interest will include, but not limited to the following:

* + - Data structures and Algorithms
    - Distributed computing
    - Parallel computer architectures
    - Shared-memory multiprocessors
    - Multi-computers and distributed processing
    - Fault-tolerant computing
    - Applications and performance analysis
    - Agent Based modeling
    - Expert and Intelligent Systems
    - Expert Systems
    - Component-Based Software Engineering
    - Software Architecture
    - Web Services Software process assessment and improvement
    - Value-based software engineering
    - Quantitative models for development processes and products
    - Distributed software development and virtual organizations
    - Process modeling, composition, and enactment
    - Open source software and software quality
    - Improvement through software reuse
    - Verification and validation

# INFORMATION AND KNOWLEDGE SYSTEMS

Topics of interest will include, but not limited to the following:

* + - Business Process Management in Organizations
    - Work flow systems
    - System Dynamics Modeling
    - Decision support systems
    - Artificial intelligence and Expert systems
    - Methodologies, Models and Tools for IS Development
    - Ontology Applications
    - Information Systems: Tools, Technologies and Techniques
    - Information Systems and Mobile Computing
    - Human Computer Interface
    - Distributed, Mobile and open Architectures
    - Geographic Information Systems
    - e-Strategies and Applications
    - ICT and Gender
    - ICT in Poverty Eradication
    - ICT and health
    - ICT and Education
    - ICT and Commerce
    - ICT and Governance

# Modelling and Simulation

* Simulation in Support for Decision Making
* Event driven versus process-oriented simulation
* Information Visualization and Decision Support Systems

# NETWORKS

Topics of interest will include, but not limited to the following:

* + - Internet Services/Applications
    - Network Control and Management
    - Quality of Service in Networks
    - Intelligent Networks
    - Data Traffic Engineering
    - Networked Databases
    - Data Communication networks
    - Wireless/Mobile/Satellite Networks
    - Cable Broadband Technologies
    - Mobile and Pervasive Computing
    - Streaming Networks
    - Telecommunication Policies
    - Optical Communication Networks
    - Network Performance
    - Network Architectures
    - Terabit Optical Technologies
    - Wireless Multimedia Applications
    - DSL Technologies
    - Network Processing
    - Mobile Ad hoc Networks (MANETs)
    - Sensor Networks
    - Security/Reliability/Dependability of wired/wireless networks
    - Network Interoperability
    - Multimedia Communication over IP Networks
    - Voice over IP

# INFORMATION TECHNOLOGY

Topics of interest will include, but not limited to the following:

* + - Business architectures and underlying infrastructures
    - Cryptographic protocols
    - Delivery technologies and scheduling protocols
    - Design of businesses models with security requirements
    - Electronic cash, wallets and pay-per-view systems
    - Enterprise management and consumer protection
    - Intellectual property and digital rights management
    - Intrusion detection and information filtering
    - Languages for description of services and contracts
    - Management of privacy & confidentiality
    - Multimedia web services
    - New cryptographic building-blocks for e-business applications
    - Online transaction processing
    - Public administration, governmental services
    - P2P transactions and scenarios
    - Real-time Internet E-Services
    - Reliability and security of content and data
    - Reliable auction, e-procurement and negotiation technology
    - Reputation in services provision
* Secure process integration and management
* e-Commerce
* Smartcard technology
* Transactional Models
* Trust and privacy issues in mobile commerce environments **SAMPLE PROJECT TITLES FROM CHOSEN UNIVERSITIES** MAKERERE UNIVERSITY

1. E-Governance : On Enhancing Online Government Service Delivery in Uganda
2. Towards Computer Digital Elevation Modeling of Industrial Site Location Using Geographic Information Systems
3. Comparing the Performance of Database Selection Algorithms
4. Developing a High-Quality Software Tool for Fault Tree Analysis.
5. An Improved Software Inspection Technique and an Empirical Evaluation of Its Effectiveness.
6. Improving Security Using Extensible Lightweight Static Analysis.
7. A Data Warehouse Model for Information Accessibility and Decision Making : The Case Study of National Water and sewerage Corporation
8. A Knowledge Based System for Antenatal Care: A Case Study of an E Infrastructurally Developing Community.

# NAIROBI UNIVERSITY

1. Ngea M Multilingual WAP based Agricultural Information System
2. Khaemba A. GPS Remote Vehicle Tracking
3. Ushindi Stephen Remote Knowledge-Based Crime Investigation Support Tool
4. Papu Quentn Mukhando Plagiarism Checker
5. Mwangi Joe Irungu Automatic Speaker/ Voice Recognition System
6. Muia Peter Maingi Crop Disease Diagnosis Expert System
7. Gathige Edwin Kimani Automated Cab Monitoring System Using Cellular Network
8. Omengo Donald Oduor Nurse Call System Using Blue Tooth
9. Akinyi Julianne Anyim A Genetic Algorithm To Solve A SUDOKU Puzzle
10. Seno Edwin Opande 3D Virtual Shopping Environment
11. Wanzare Lilian D Awuor Translation system: English To Dholuo
12. Munyao I Oliver Kamba Language Parser
13. Kazungu Gona Agripa Virus Protection System
14. Ogega Douglas Omemu Audio Samples Player And Recorder of Musical Patterns
15. Musimba Paul Mulwa M-Shopping Application
16. Muiru Bilhah Njeri Content Based Image Retrieval
17. Migwi Julius Kibe Electronic Supermarket For Mobile Agents
18. Onginjo Ceasar Maumo Mobile Diagnosis

# PROJECTS DONE IN KENT UNIVERSITY – 2006/2007

1. AutoplagAI: Artificial Intelligence Enhances Automatic Plagiarism Detection in Student Programs by: Kyriakos Koullis
2. eSoc -Ruby on Rails Society Management System -by Nick Cunliffe- Jones, Tom Gillett, James Perry, David Lobo, Steve Price and Miltiadis Zeibekis
3. Automated Commentaries for Simulated Soccer -by Justin Hogg, Adrien Martel, Ahsan Mussa and Akbar Sherwani
4. BlueSpaceBar: A Social Networking System for Bars & Cafés -by Deepak Manglani, Duncan Roberts and Andrew White
5. Kent Online Take away Information System -by Michael Barnwell, Tim Donovan, Ajmal Hamza and Karl Smolka
6. Automated Music Generation Software -by Thomas Broad
7. Garbage Collection for data structure reorganization -by George Kurian
8. Using Web Standards to Deliver Recorded Multimedia Presentations in a University Environment -by Andrew Hall

# EASTERN MICHIGAN UNIVERSITY

1. Student: Chidarapu, Kishore Title: Text to Speech Synthesizer

(The Projects deals with developing an application for reading out an input text typed at the source. The project is about consumer products. Developed to aid visually impaired people, potential users of computer systems, researchers etc. Software used in this project: Java Speech API which supports speech recognition and synthesis)

1. Student: kuruganti, Praveen Title: Ultra Task Management

(The System manages different tasks as well as employees with the different tasks, it also provide a way to look for available employees for the new task, and eventually gives the status of the task. Software used in implementation: ASP.NET, SQL server 2000, Internet information server 5.0)

1. Student: Padmanabhan, Aditi Title: Meter Maintenance System

(The project is done for the power management/transmission company, to maintenance records from the various meters, since the in the existing system, records are being stored manually lead to various errors in the computations.)

1. Student: Vakati, Pramodh Title: E911 Provisioning

(In the existing system, Customers enter data into a Telnet site, which is subsequently entered at various levels by different employees, until the final status of the customer file is further verified. The system automates the sending of customer data from telnet to SBC which is the final destination. This helps to reduce manual intervention and further reduce the time required for the entire process to take place. Software used in the implementation: Microsoft visual studio.net, Microsoft SQL Server 2000, ASP.Net)