AMITY UNIVERSITY
UTTAR PRADESH

AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY

ABOUT THE PROJECT

The Project Work provides students an opportunity to do something on their own and under the supervision of a guide. Each student shall work on an approved project, which may involve fabrication, design or investigation of a technical problem that may take design, experimental or analytical character or combine element of these areas. The project work involves sufficient work so that students get acquainted with different aspects of manufacture, design or analysis. The students also have to keep in mind that they would be required to implement whatever has been planned in the Project in this semester and also evaluated by an external examiner. **At the end of semester, all students are required to submit an individual report and a group report.**

The objectives of the course 'Project' are

- To provide students with a comprehensive experience for applying the knowledge gained so far by studying various courses.
- To develop an inquiring aptitude and build confidence among students by working on solutions of small industrial problems.
- To give students an opportunity to do some thing creative and to assimilate real life work situation in institution.
- To adapt students for latest developments and to handle independently new situations.
- To develop good expression power and presentation abilities in students.

Guidelines for project

Project is an important part of a program. It gives an opportunity to the students to explore the application and implementation of various concepts that they have learned, under the supervision of a faculty. The students can take up any project of their choice after the consultation with the faculty guide. Following are some of the guidelines for the project

1. The project is to be done by students individually or in exceptional cases in a group of maximum 4 students with prior approval from HOD.
2. The project can be purely hardware based, software based or comprising of both hardware and software component.
3. The student will submit a synopsis at the beginning of the semester for approval from the departmental committee in a specified format (see annexure - A).
4. Project guide for each group of students must be from the respective department. However, Project co-guide may be from other department, if required.
5. Project synopsis is to be submitted within two weeks of commencement of the semester and will be duly signed by the project guide.
6. The student must submit outline and action plan for the project execution (time schedule) and the same should be approved by the guide.
7. There will be monthly progress review/presentation in the presence of project guide in which students will present and submit a progress report to the project board members.
8. Calendar of internal assessment (continuous assessment) will be worked out by the department and will be communicated to the students and faculty guides at the beginning of the semester.
9. The continuous evaluation criterion for 30% marks is as under:

1st presentation	5 marks
2nd presentation	5 marks
3rd presentation	5 marks
Continuous evaluation (by Guide)	10 marks
Attendance	5 marks
Total internal marks	**30**

10. Students will submit the final report duly approved by the project guide to the department (see annexure - B).
11. Final viva and presentation will be held in the presence of expert committee comprising of external and internal examiners. The external evaluation will carry 70% weightage. The evaluation will be as under:

Project Report	10 marks
Understanding of the subject	10 marks
Demonstration of h/w & s/w	15 marks
Presentation and Viva	35 marks
Total external marks	**70**

12. Any student fails to satisfy the expert committee will be required to repeat the project along with junior batch as per university examination norms.
13. It is expected that the project work should result in some research publication.

Synopsis of the Project:

Synopsis of the project should include: -

1. A brief introduction about the project.
2. Problem Formulation.
3. Working of the project.
4. Applications.

Annexure - A

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Synopsis of Project:

Project Title:

Project Guide:

Project Team:

Programme:-		Year/Semester:-	
S. No.	Enrolment No.	Name	Signature

Project summary (at least 250 words)

Methodology to be adopted:-

Resource requirement (Hardware & software etc):-

Justification of the project:-

Schedule of project completion:-

Signature(s) of project team

Name and Signature of project guide

Annexure - B

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Guidelines for Project File

Research experience is as close to a professional problem-solving activity as anything in the curriculum. It provides exposure to research methodology and an opportunity to work closely with a faculty guide. It usually requires the use of advanced concepts, a variety of experimental techniques, state-of-the-art instrumentation and software.

Research is genuine exploration of the unknown that leads to new knowledge which often warrants publication. But whether or not the results of a research project are publishable, the project should be communicated in the form of a research paper written by the students.

Sufficient time should be allowed for satisfactory completion of reports, taking into account that initial drafts should be critiqued by the faculty guide and corrected by the student at each stage. The File is the principal means by which the work carried out will be assessed and therefore great care should be taken in its preparation.

It is recommended that the student meets the guide regularly during the course of the project, and maintain a record of the discussions, survey details, derivations etc. Such a system will allow easy and quick access to the details and chronology of the work. Please read the guidelines carefully and make sure your project report strictly conforms to specifications.

General Tips:

In general it will help to have someone else read the report and critique it. Make a checklist of their questions and comments and resolve each one.

- The report must be complete, error free and referable. All references, figures, tables, equations, etc. which are referenced in the text should be locatable in the report with the specified number or reference. Conversely, all references, figures, tables, equations, etc. must be cross-referenced in the text.
- Use of spelling and grammar software is strongly recommended. “Spell-check” cannot identify correctly spelt words in the wrong context. For example, typing “he” in

place of “the” may alter the meaning of the sentence but the spell-check will not indicate this, so re-read the text written.

- Except for acronyms do *not* use ALL CAPITALS.
- Do *not* use underlining.
- Use *italics* for emphasis or if the phrase is non-English.

In general, the File should be comprehensive and include:

Report Layout

The report should be hard wound and of following colour:

1. For ECE and others: Dark Blue
2. For MAE and Civil: Maroon
3. For CSE and IT: Dark Green

It contains the following components:

Text Layout

Use **1.5 lines spacing** with material typed having margin of **1.5-inch on left side and 1-inch on right side**. The text material should be typed in **12 font** size in **Times New Roman** script.

Title or Cover Page

The title page should contain the following information: Project Title; Students Name; Course; Year; Supervisor’s Name. (Annexure – C)

Declaration (Annexure – D)

Certificate (Annexure – E)

Acknowledgements

Acknowledgment to any advisory or financial assistance received in the course of work may be given.

Abstract

A good "Abstract" should be straight to the point; not too descriptive but fully informative. First paragraph should state what was accomplished with regard to the objectives. The abstract does not have to be an entire summary of the project, but rather a concise summary of the scope and results of the project. The abstract (about 150 words) should contain the context/relevance of the problem at hand, a description of what was done and a gist of the significant observations/results.

Table of Contents

Include page numbers indicating where each chapter / section begins. Chapter / section are to correspond exactly with those in the text (Appendix –F). The table of contents gives a bird's eye view. Try to fit it into one or two pages.

List of Figures and **List of Tables** should be on separate pages. Each list should give, in tabular form, the figure or table number, its title/caption and its page number.

Introduction

Here a brief introduction to the problem that is central to the project and an outline of the structure of the rest of the report should be provided. It is the first chapter of the Report. The purpose of an introduction in the Project Report is to justify the reasons for writing about the report. The goal in this section is to introduce the topic to the reader, provide an overview of previous research on the topic, and identify the own hypothesis. It can be noted here that the introduction should not contain every bit of detail in the report, and it should not include support for the report. An introduction might, however, include the reasons for supporting the report.

The introduction should aim to catch the imagination of the reader, so excessive details should be avoided.

Literature Review

Literature survey/review is the documentation of a comprehensive review of the published and unpublished work from secondary data sources. The library is a rich storage base for secondary data and researchers can go through books, journals, newspapers, magazines, conference proceedings, doctoral dissertations, master's theses, government publications and financial reports to find information on their research topic. With computerized databases now readily available and accessible the literature search is much speedier and easier and can be done without entering the portals of a library building. Survey of literature related to the project work. e.g. research papers published in national and international journals, conferences, related books, websites is very important to get hold of the project topic.

Project Planning

The purpose of the project planning is to ensure that the project is thought through and planned. The plan should summarize the result of an initial analysis and define the tasks to be completed and

the milestones involved. The plan forms a framework against which the progress is measured which helps to bring the project to a successful conclusion within the planned timescale.

Plan and schedule

Describe here the approach to be taken, i.e. how you are going to go about it. The plan is likely to define periods of literature study/survey, learning new software, hardware implementation, coding stages and report writing. Realistic time periods should be allocated for each task showing that adequate consideration has been given to addressing the difficulties of each. Where appropriate, tasks can be shown running in parallel.

S.No.	Set of Definable Tasks	Start Date	End Date	Cost Estimated

Materials and Methodology

This section should aim at experimental designs, materials used. Methodology should be mentioned in details including modifications if any.

Approach to design

A design approach will guide you to achieve the overall goal of the design. The key to design approach is clear understanding of what you want to achieve. The basic idea of the design approach is to understand the context in and the constraints under which a design solution will be produced.

For finding an appropriate design approach you need to:

- Investigate possibilities and constraints
- Define problem spaces
- Build and redefine the specifications of design solutions to test the ideas in a real world context
- Prototype/Simulate possible scenarios that can incrementally or significantly improve the inherited situation
- Understanding the current style and trend
- Manage all these activities within set time limits.

Estimated Expenditure

Conceptual expenditure estimating for project work is a mix of estimating software and hardware cost.

What's in the cost?

- What does the estimate include (prep work, availability and collection of hardware and software tools)?
- What conditions are assumed (controlled environment, outdoors, indoors)?
- What methodology (tools, equipment, and procedure) is assumed?

How to determine cost:

- Break the Project Down into a Set of Definable Tasks:
    - Identify Major Activities (Design, Development, Integration, Testing)
    - Break down Further into "Self Contained" tasks (Design User Interface, Develop Database Software, Develop Prototype xyz Board)
- Now see what is the cost involved for each task to calculate the total cost of the project.

Simulation/Experimentation

The act of simulating something generally entails representing certain key characteristics or behaviors of a selected physical or abstract system. Simulation is used in many contexts, such as simulation of technology for performance optimization, testing and verification of results. If the project involves the usage of a particular software tool e.g MATLAB, VHDL or a programming Language like C, JAVA, then the simulated results as well as a brief overview of the tool or features of the language should be presented in the project report.

Incase the project involves hardware tools and equipments, a brief summary of the specifications and experimentation results should be presented.

Experiments should measure:

- Pure running time
- Sensitivity to important parameters
- Scalability in various aspects: data size, problem complexity

Experiments should show:

- Absolute performance (i.e., it's acceptable/usable)
- Relative performance in comparison to previous approaches
- Relative performance among different proposed approaches

Discussion of Results

The purpose of Discussion is to interpret the results in light of what was already known about the topic of the Project, and to explain new understanding of the problem after taking the results into consideration. It should discuss the implications of those results.

The Discussion will always connect to the Introduction, but it does not simply repeat or rearrange the Introduction. Instead, it tells how the study has moved forward from the place it left, at the end of the Introduction.

It can include:

- What can be the next step in the projects, e.g., what experiments would you do next?
- Organize the Discussion to address each of the experiments/studies for which results were presented.
- Consider how the results of others studies may be combined to derive a new or perhaps better substantiated understanding of the project.

In writing this section, emphasis should be given on what has been performed and achieved in the course of the work, rather than discuss in detail what is readily available in text books.

Presentation of Results and their analysis

An integrated results analysis is crucial for a project. Student with his insight and understanding of the goals, strategies, environments, and challenges of the project can analyze and put the results in context. While presenting the results, write at length about the various statistical tools used in the data interpretation. The result interpretation should be simple but full of data and statistical analysis. This data interpretation should be congruence with the written objectives and the inferences should be drawn on data and not on impression. Avoid writing straight forward conclusion result; it should lead to generalization of data on the chosen sample.

The integrated results analysis should satisfy the following guidelines.

It should:

- be relevant and significant
- be comparable to the existing references.
- be presented in a clear and understandable format.
- focus on results and achievements
- compare planned to actual results
- describe variations and uncertainties
- include simulation and experimentation results
- if analysis is made under any assumptions, they should be clearly described

Conclusion

A conclusion should be the final section in which the outcome of the work is mentioned briefly. Check that your work answers the following questions:

- Did the research project meet its aims (check back to introduction for stated aims)?
- What are the main findings of the research?
- Are there any recommendations?

Future prospects

State the aspects of the problem that have not been considered and possibilities for further enhancements. This section shows how the work done can set new research directions. If you're actively engaged in follow-up work or plan to pursue further work on the subject, mention that.

Appendices

The Appendix contains material which is of interest to the reader but not an integral part of the thesis and any problem that have arisen that may be useful to document for future reference.

References / Bibliography

References:

Referencing is necessary to avoid plagiarism, to verify quotations and to enable readers to follow-up. Indicate references by number(s) sequentially in square brackets [ ] in the order in which they appear in the text.

Examples: For Journals

[1] Vander Geerj, Hansraads JAJ, Lupton R. A. The art of writing a scientific article, Journal of Scientific Communication 2000; 163:51-9

For Books:

[2] Strunk W, White EB. The Elements of style, 3rd ed. New York; Macmillan (1979)

- The full title and author and should state where it is published, including full issue number and date, and page numbers where necessary.
- In the case of a textbook you should quote the name of the publisher as well as the author(s) and edition number.

Number of pages, font, spacing, color

Keep the total number of pages (of the chapters) between 30 and 50, not exceeding 50 in any case. This does not include the page count of the appendices.

With regard to the text please note:

- **Margins** All text, drawings, tables, etc., must be positioned on an A4 sheet with 1 in. margin on the top, bottom and right side and 1½ in. margin on the left side.
- Pages should be **numbered** at bottom center (including pages that contain only figures or tables).
- **Font** style and size: Times New Roman, 12 pt.
- For font size of chapter, section and subsection use **headings**.
- Line **Spacing**: single
- **Typing**: One side
- **Color**: Black on white

Figures and Tables

Each sketch, drawing, graph and photograph should have a figure number and title below the figure etc. Numbering should be sequential, chapter wise. For instance, if there are 20 figures in chapter 1 spread over all of its sections the figure numbers should run from Figure 1.1 through Figure 1.20. In figures experimental data should typically be represented by centered symbols, and theoretical data by continuous curves.

Each table should have a table number and caption above the table. Numbering should be sequential, chapter wise, as in the case of Figure numbers. For instance, if there are 18 tables in chapter 3 the table numbers run from Figure 3.1 through Figure 3.18.

Make sure that figures and tables are complete in other respects such as legends, references (if any) and coordinate labels with units. Each figure and table must be explicitly referred to in the text and located where its first reference occurs, preferably *after* the reference.

Equations

The numbering of equations should be sequential, chapter wise. Numbered equations must be explicitly referred to in the text.

Individual Report

If the project work is carried out in a group of four or five members, each student is required to submit an individual report of his/her unique contribution in the completion of the project work. This individual report should include a brief overview of the project as well as the individual role of the project member in the successful accomplishment of the sole objective of the project.

Submitting the Report

For the purpose of the viva voce exam, plan on one hard copy each for the students and Faculty Guide(s) as well as a soft copy. All hard copies must be identical from cover to cover.
Please follow these steps:

- Submit the draft according to schedule.
- Make corrections, revisions and extensions as suggested by the University Examiner before submitting.

Guidelines for the Presentation:

The presentation should be 15 minutes in length, covering the project and its milestones. It is recommended that the PowerPoint presentation must be stored on a CD or USB memory stick before presenting.

Following points must be taken care of:

- The material as a whole should be presented in a clear and well-structured way.
- Avoid using small font so that figures and text are clearly visible.
- The slides should be kept simple.
- Student should be enthusiastic and should not just read from the slides.
- The student should be audible and should not mumble.

- The design and format should be consistent throughout the presentation, including headings, use of fonts, styles, labeling of graphs, figures, etc.
- References should be presented correctly at the end of the presentation.

Annexure - C

TITLE OF THE PROJECT

STUDENT(S) NAME

DEPARTMENT OF …… AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY AMITY UNIVERSITY UTTAR PRADESH
NOIDA (U.P.)

APRIL 2011

TITLE OF THE PROJECT

Submitted to

Amity University Uttar Pradesh

in partial fulfillment of the requirements for the award of the Degree of Bachelor of Technology in
Name of Department

by

STUDENT(S) NAME

under the guidance of

Name of faculty
Department of ……
Amity School of Engineering and Technology

DEPARTMENT OF …… AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY AMITY UNIVERSITY UTTAR PRADESH
NOIDA (U.P.)

Annexure -D

DECLARATION

I/We, …….., student(s) of B.Tech (….) hereby declare that the project titled "……..” which is submitted by me/us to Department of ……., Amity School of Engineering and Technology, Amity University Uttar Pradesh, Noida, in partial fulfillment of requirement for the award of the degree of Bachelor of Technology in ….. , has not been previously formed the basis for the award of any degree, diploma or other similar title or recognition.

Noida

Date Name and signature of Student(s)

Annexure -E

CERTIFICATE

On the basis of declaration submitted by …….., student(s) of B. Tech ….., I hereby certify that the project titled "……..." which is submitted to Department of ……, Amity School of Engineering and Technology, Amity University Uttar Pradesh, Noida, in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in ….., is an original contribution with existing knowledge and faithful record of work carried out by him/them under my guidance and supervision.

To the best of my knowledge this work has not been submitted in part or full for any Degree or Diploma to this University or elsewhere.

Noida

Date

(Guide)
Department of …….
Amity School of Engineering and Technology
Amity University Uttar Pradesh, Noida

Annexure –F

CONTENTS