Phase-I
Section-8

1. General Guidelines to students for Phase-1: Review-1 and Review-2

Instructions that help students to form title, problem definition, objectives, scope, and to write methodology, relevance and type are presented-

(i) **Record of References, Work carried out and Attendance:** Printed copies of references (PO8) and a book containing record of work carried out on regular basis need to be maintained (PO10). Attendance of students for weekly meet with guide to be recorded in the same book.

(ii) Hard copy of a minimum of three reference papers to be submitted to the guide and to be produced for every evaluation.

(iii) **Problem definition, objectives and scope** (PO4, PO5, PO6, PO7, PO12):

Students can refer to projects database provided by the department. This contains a list of project titles with brief abstracts suggested by guides. These are only suggestions of suitable topics and students are encouraged to formulate their own ideas for a project.

Problem definition: Statement of how one would like to take up the work to add value to the work or what changes would be done either in use of different design, algorithm, platform, hardware, parameters or use of different test scenarios.

Objectives: Objectives relate to the expected outcomes of the project. The objectives should be clearly specified and should be chosen with time and resource limitations. Objectives should be stated with Roman numbering (as i, ii, iii).

Scope: In the scope, the extent to which the work of the project applies need to be explained along with clear **limitations** of time, geography, environment, availability of resources that extend or restrict the work. This provides a common understanding of the project among stakeholders (students, guide, evaluators). Stating the scope makes the project work achievable and realistic by defining the limits and constrains.

(iv) **Title of the project:** Title should be carefully selected to depict the objectives. Two to three versions of title should be thought of and suggestion by project committee in Review-1 to be taken in to consideration in finalising the title. Too lengthy and ambiguous titles should be avoided. Similarly, too cryptic titles also should not be used.

If the title is changed, it should be informed to the project coordinator. The title can be changed only with the permission of the guide and project committee of the domain.

(v) Literature survey (PO12): An exhaustive Literature Survey is essential part of a project work. Literature from text books, Journals, Conference papers, Monograms, Handbooks, I.S. codes and other sources need to be collected. Discussion from industry and academia experts, field surveys is to be noted and documented in a systematic way. Literature survey need to be written as a reference for the project work to mention how the work related is carried out by other researchers and what parameters are tested.

(vi) Methodology (PO1, PO2, PO3): This consists of a breakdown of the work to be done into phases, tasks and other activities with estimates of time to complete the work. It will specify interdependencies of tasks, critical work elements and schedule. Description of the work you have done so far with a flow chart is expected. The work intended to be done in Phase-2 should also be indicated.

(vii) Use of modern tools (PO5): Modern tools are available for simulation and verification as licenced and free version. Use of modern tools along with mention of the details in the methodology is expected.

(viii) Relevant field, Type, PO and PSO of the projects

Based on the **relevant field**, project works are to be identified with, four categories such as;**(i) General (ii) Agriculture(iii) Renewable (iv) Health (v) Infrastructure.**

Further they are also to be divided into four **types** as;

(i) Application (ii) Product (iii) Research (iv) Review project.

Project works are also identified with, POs and PSOs.

(ix) Resources required: Availability of the existing resources necessary for project work need to be verified. Any requirement not available in the department should be discussed with guide and H.O.D. and proposals for procuring the same may be made.

(x) Industry support: Project proposals may be submitted to industry / organizations for financial / technical support wherever possible.

(xi) Bibliography is written with the formats as mentioned below-

1. Book - General Format

[#] Author name, *Book Title*, Edition, Place of Publication, Publisher, Year.

Example

[2] A. V. Oppenheim and R.W. Schafer, *Digital Signal Processing*, 3rd Edition, Prentice Hall, 1975.

For e-Book, give the web source where the book is available.

2. Magazine or Journal Article - General Format

[#] Author name, "Title of article", *Title of Journal*, Volume, Number, Page Numbers, Month Year.

Example

[2] R. Abell, S. Morgan, and A. Morgan, "Taking high conservation value from forests to fresh waters", *Environmental Management*, Vol. 56, No. 1, 2015, pp. 1-10.

3. Conference Papers - General Format

[#] Author name, "Title of paper", *Conference name*, City of Conference, year, pages. Omit the year if it is included in the conference name.

Example

[4] A. Alshammari, S. Alhaidari, A. Alharbi, and M. Zohdy, "Security threats and challenges in cloud computing", in *2017 IEEE 4th Int. Conf. on Cyber Security and Cloud Computing,* New York, pp. 46-51.

4. Standard or Code - General Format

[#] *Title*, Standards organization, Standard number, date.
Omit the date if it is included in the standard number.

Example

[8] *Boiler and Pressure Vessel Code, Section I - Rules for Construction of Power Boilers*, ASME BPVC PT.1, 2015

5. Website - General Format

[#] Author name, "Title of article", *Website Name*, Publication Date. Available: internet address. [Accessed: Month Day, Year].

Example

[8] K. Bonsor and J. Strickland, "How nanotehnology works," *How Stuff Works*, 2007. [Online]. Available: https://science.howstuffworks.com/nanotechnology1.htm. [Accessed: December 1, 2017].

Project Coordinator H.O.D.
Date:

Phase-I
Section-9

2. Format for Synopsis

Synopsis (PO9, PO10) should contain the following-

(i) Cover page (as per format provided by the department).

(ii) Content page (as per format provided by the department).

(iii) Chapter 1 Introduction

(iv) Chapter 2 Methodology

(v) Bibliography

Chapter 1 to be organized as mentioned below-

- 1.1 to 1.5 Introduction (number of sections depend on the content)
- 1.6 (Next section, can be 1.5 also) Literature Survey
- 1.7 Motivation and Problem Definition
- 1.8 Objectives
- 1.9 Scope and limitations
- 1.10 Relevant field and Type

Chapter 2 to be organized as mentioned below-

- Methodology*
- Resources required (Hardware and software, materials, labour, equipments, tools etc.)
- Applications (mention the areas where the project finds application.
- Budget (finance required for completing the project work including the report).

*Students can make use of Microsoft-Visio to draw block diagrams.

Project Coordinator H.O.D.
Date:

(For student notice board and Faculty circulation)

Phase-I
Section-10

3. Guidelines for Project Seminar in Phase-1

Preparation of slides should follow the guidelines as mentioned below-

1. The first slide should contain institute name (with Society logo and institute logo), Department name, Title of the project, Student names with USN (University Seat Number), Name of guide/guides, Date of Evaluation.
2. Second slide should give Content of the presentation.
3. Third slide will show Problem definition, Objective and scope.
4. Slide four starts onwards shall give Literature survey carried out.
5. Slides should be numbered.
6. Slides should not be prepared with special effects.
7. Slides should be simple with proper background and with simple design anf legible font.
8. In each slide there should be 8-10 lines, with font 24-28.
9. Mathematical equations should be written using equation editor.
10. Tables and figures should be given caption and number.
11. If any block diagram, figure, concept, table is copied from a reference, it should be duly acknowledged and mentioned (PO8).
12. The last slide should be Bibliography.
13. Slides should be got verified by the guide, before presenting them during evaluation.
14. Dress code: In all the stages of project reviews, students are instructed to present themselves decently with proper dress code (Boys will be in complete formals, Girls will be in cotton dress (Salwar Kameez)). Examiners may cancel the Review process if dress code is not followed by a particular student.
15. Evaluation of project seminar is done for 20 marks.
16. All the students of a project team need to know all the slides as they may be asked to explain the slides in randomly.

Project Coordinator H.O.D.
Date:

(For student notice board)

Phase-I
Section-11

4. Weekly record of work

Meetings with guide at least once in a week is compulsory with team members. Record of the progress made, briefs of the discussion on next work, signature of students present and guide signature, needs to be maintained in the format shown in Table 10.1, in a register maintained with project guides.

Table 10.1 Weekly report

Progress made					
Discussion on next work					
Signature of students present	*Student name				
	Signature				
Signature of guide with date					

* Follow the same order of names in columns in all reports.

Project Coordinator H.O.D.

Date:

(For student notice board)

Phase-II
Section-5

5. Guidelines for preparation of the Project Report

Project report is a written evidence of tasks, processes and activities that are undertaken and accomplished by the students while pursuing their projects and implementing it.

With reference to VTU (Visvesvaraya Technical University) guidelines, format for Project reports has been prepared and the students and students are required to adhere to the same. Project report shall include the following elements:

(i) Cover Page
(ii) Certificate
(iii) Declaration
(iv) Acknowledgements
(v) Abstract
(vi) Table of Contents
(vii) List of Figures
(viii) List of Tables
(ix) List of Symbols and Abbreviations (optional)
(x) Chapter 1 Introduction
(xi) Chapter 2 Methodology
(xii) Chapter 3 Concepts / System working /…
(xiii) Chapter 4 Experiments, Results and Discussion
(xiv) Chapter 5 Conclusion and Future Scope
(xv) Bibliography
(xvi) Appendices

Guidelines for preparation of above components is detailed in following sections-

5.1 Page Numbering

In the above structure, pages for (ii) to (ix) are numbered with the Roman numerals as i, ii, iii and so on. Components (x) i.e. Chapter 1 shall begin with Arabic numbering 1 and continues.

5.2 Margin, Spacing and font

Project reports should be typed neatly only on one side of the paper with 1.5 line spacing on a A4 size bond paper (210 x 297 mm).

The margins should be: Left-1.25″, Right-1″, Top-1″and Bottom-1″ (1 inch=2.54 cm).

All the contents of the project report should be in 'Times New Romans' font, and the size should be 12 throughout. All the text should be left with the 'justified' option.

5.3 Abstract

An abstract should be of 1-2pagesindicating salient features of the work. Abstract represents a summarized report of the complete project in a very concise and informative format covering (i) main objective and aim of the project (ii) the background information (iii) processes and methods used (iv) methodologies implemented (v) different test scenarios, followed with (vi) a brief conclusion of two to three lines talking about the results, scope and applicability of the project.

5.4 Table of Contents, List of Figures, List of Tables

Neatly positioned on the page, should be double line spacing, tabular form without table borders.

5.5 Writing chapters: Guidelines for writing different chapters is mentioned-

5.5.1 Chapters, sections and subsections

Chapters 1 Introduction- This chapter introduces the reader the technology related to project work in the first one or two sections. The development and need for research is highlighted in these sections. In the next sections, 'Literature Survey' is discussed. The chapters, sections and subsections may be numbered in the decimal form for e.g. Chapter 1, sections as 1.1, 1.2 etc., and subsections as 1.2.3, 3.5.1 etc. The caption "Chapter 1" and so on must be right justified (font size 16), followed by the title of chapter centered, with upper case, bold (font size 18). Section numbers along with their headings must be left justified with section number and its heading in bold with font size 16 and subsection and its heading in bold with font size 14. The body or the text of the report should have font size 12.

Figures and tables must be numbered chapter wise for e.g.: Fig. 2.1 Block diagram of a serial binary adder, Table 3.1 Primitive flow table, etc. with font size 10. Caption for figure should be below the figure and for tables it should be above the table. Only SI units are to be used in the report. Important equations must be numbered in decimal form giving the chapter number and equation number, for e.g.

$$V = IZ \qquad (1.2)$$

All equation numbers should be right justified.

'Chapter 1: Introduction' should include the components as mentioned below-

1.1 to 1.5 Introduction (number of sections depend on the content)

1.6 (Next section, can be 1.5 also) Literature Survey

1.7 Motivation and Problem Definition

1.8 Objectives fulfilled

1.9 Scope and limitations

1.10 Relevance and Type

1.11 Organization of the report

The format for writing organization of the report is shown-

1.11 Organization of the report

The project report is organized as mentioned below-

Chapter 1: Chapter 1 gives the introduction to ……. Looking into the requirements of …….techniques are discussed in this chapter. …….Literature survey is discussed. Objectives and scope for the project work are defined.

Chapter 2: Chapter 2 presents the methodology for ……. Design/Simulation steps for verification of …….system are explained.

Chapter 3: In Chapter 3, theoretical details about …. are presented.

Chapter 4: In Chapter 4, results obtained are presented. Results for different …..(write test scenarios) are explained and discussed.

Chapter 5: In this chapter, conclusion is given on the requirement of …….. Scope for future work is given.

'Chapter 2: Methodology' to be organized as mentioned below-

2.1 **…….**System

2.2 Methodology

2.3 Block schematic

2.4 Design/Simulation/…..(any other) steps (use sub sections)

2.5 Description of resources required (hardware and software)

- **Summary**

'Chapter 3: Concepts/System working/Component includes the explanation of conceptual details, principle of system working or algorithm details etc.

- **Summary**

'Chapter 4: Results and Discussion' includes the presentation of results using suitable figures, graphs and charts. Different test scenarios should be clearly explained along with results. Discussion on results should be presented that helps to write the conclusion. At the end summary is to be given. Chapter 4 can be organized as mentioned below-

4.1 Test scenario 1

41.1 Use subsections for variation in parameter in 3.1

…

4.2 Test scenario 2

4.2.1 Use subsections for variation in parameter in 3.2

….

4.3 Test scenario 3

4.3.1 Use subsections for variation in parameter in 3.3

….

- **Summary**

'Chapter 5 Conclusion and future scope' includes an assessment of the success of the work carried out. Comparison tables of results obtained and statement of conclusion. If the expected results are not obtained, the reason for the same can be identified. Suggestions for scope for the future work is presented to explain how the work can be carried for value addition, for a different design, for implementing a different test scenario or implementation on a different platform.

5.6 Number of pages, Description of Technical content and Budget

The project report should be minimum of 50 pages. Where short excerpts from published work are desired to be included, they should be appropriately referenced.

- Proper attention is to be paid to the technical contents and organization of the report and clarity of the expression. Due care should be taken to avoid spelling, grammatical and typing errors.
- Hardware projects must include: the component layout, complete circuit with the component list, numbers used, etc. and the main component data sheets as Appendix.
- Software projects must include a virus free disc, containing the software developed by them along with the read me file. Read me file should contain the details of the variables used, salient features of the software and procedure of using them: compiling

procedure, details of the computer hardware/software requirements to run the same, etc.

- If the developed software uses any public domain software downloaded from some site, then the address of the site along with the module name, date of download etc. must be included on a separate sheet. It must be properly acknowledged in the acknowledgments.
- A budget sheet must be provided detailing the expenses incurred (excluding the expenses for report binding). Sponsored Projects must also satisfy the above requirements along with statement of accounts, bills for the same dully attested by the concerned guides to process further.

5.7 Bibliography

The references should be numbered serially in the order of their occurrence in the text and their numbers should be indicated within square brackets for e.g. [3]. If the references are not indicated throughout the report, then reference papers should be listed with title as Bibliography.

The section on Bibliography or References should list the references in the IEEE format as mentioned in guidelines for synopsis.

5.8 Number of reports

One copy to the department, One copy to the concerned guide(s), specified number of copies to the sponsoring agency, One copy to the candidate. For making copies dry tone Xerox is suggested.

5.9 Guide's approval

Before taking the final printout, the approval of the concerned guide(s) is mandatory and suggested corrections, if any, must be incorporated.

5.10 Binding the report

The reports submitted to the department/guide(s) must be hard bound, with a hard cover. Separator sheets, used if any, between chapters, should be of thin paper and **not of plastic.**

Colour of the outer cover/front page of project report is as per VTU guidelines. **Foam sheets shall not be used for binding.**