Paper Cade: BCADSE 6.7	Paper title: Project Work	Teaching Hours – 4hrs/week
.	Marks: Th-160+IA-40	Credits: 4

The objective of the BCA project work is to develop a quality software solution by following thesoftware engineering principles and practices. During the development of the project the students should involve in all the stages of the software development life cycle (SDLC).

This Lab. will enable students to demonstrate their practical and theoretical skills gained during five semesters of study in BCA Programme.

- ➢ The students are required to carry out the project in a group of two or three students under the guidance of course teacher.
- ➢ Project work problem statement shall be identified by the students with the help of the course teachers and students shall submit the synopsis/project proposal of the same during the second week of the commencement of VI semester BCA course.
- ➢ During project development students are expected to define a project problem, do requirements analysis, systems design, software development, apply testing strategies and do documentation with an overall emphasis on the development of a robust, efficient and reliable software systems.
- ➢ No change in the title of the project work shall be allowed after 3rdweek of the commencement of VI semester BCA course.
- ➢ The project development process has to be consistent and should follow standards identified by the guide monitoring the project work.
- ➢ There is no restriction on use of hardware's and software's for carrying out the project work except that ready application packages are not allowed.
- ➢ The students have to submit the project dissertation of the project work carried out in one hard copy along with soft copy written on compact disc.

Project Dissertation Details:

- ➢ The standard procedure for documenting the project work shall be followed. However, while writing is in progress, students should show each chapter to their supervisors for necessary feedback especially on technical content. Note that the quality of the dissertation is more important than its number ofpages.
- ➢ The dissertation text (defined as everything except title page, table of contents, references and appendices) should be around 50 A4 pages. The length (dissertation text together with appendices) of the dissertation should be less than 100pages).
- ➢ The students are advised to follow the following typing recommendations

Contents of the dissertation

- ➢ **Preface:** Title page, certificate, student declaration page, abstract, acknowledgement page, contents, list of figures, list of tables, and list of acronyms.
- ➢ **Main chapters**
  - o **Introduction:** The motivation for the project should be argued here. Then a brief introduction to the project should be provided indicating its objectives and scope. Finally, a paragraph containing an outline of the remaining chapters (starting with Chapter 2) is recommended.
  - o **Analysis:** information on the existing system should be provided-The students can incorporate different types of diagrams to describe the processes and functionalities of the existing system. The candidate should review software of the proposed system. An analysis of the requirements should also be provided in this chapter. For example, the requirements of the system could be listed. A specification of the number of users, the frequency of use, and the jobs of the users could be provided. Functional requirements covering system functionality expected by the users should be addressed. Include a section to the end of the analysis chapter to describe the selected methodology.
  - o **Design:** In this chapter the student should consider different competing design strategies (alternative solutions) for his system. The different strategies may involve the way of development (developing from scratch, using open-source components, etc.,), the development platform (stand-alone personal computer, client-server environment, etc.,), choice of system software (Windows, Linux, etc.). The candidate should compare how the project requirements are satisfied through each alternative. The design of the proposed system should be another major section of this chapter. the candidate should

describe the design of the system referring to different types of diagrams/models; for example, if non-object oriented methodology has been selected then include use case diagrams, use case narratives, activity diagrams, and entity relationship diagrams, and if object oriented methodology has been selected then include use case diagrams and use case narratives, class diagrams, sequence diagrams. User interface design is the next major section of this chapter. The candidates should describe the design considerations for designing user interfaces of the system and justify the design decisions that were made. Layouts of relevant interfaces should be included in order to clarify the design decisions taken.

- o **Implementation:** This chapter should describe the implementation of the system. For example, it should identify and explain all major code and module structures. Include a diagram to depict and describe the interaction between modules of the system. Also, the implementation environment (hardware and software), any existing code that was reused by the candidate, development tools used, and any platform dependence must be discussed. Appropriate technical documentation may be included as appendices to the dissertation if they are expected to be useful for the reader. Note that a list of selected code will appear in appendix and the code used in this chapter should be presented for the purpose of explaining the implementation aspects of selected important code. This code should be presented as a code segment.

- o **Evaluation:** A comprehensive test plan that was used to verify and validate the system should be provided. Evidence should be provided of using a wide range of test data. Evidence should be produced to show that all aspects of the system have been tested and specification has been met. Description of the effects of various kinds of errors and the required system behaviour upon occurrence of an error should be included. The candidate should report the test results in text in a table in this chapter and include detailed actual test results (in screen shots) in an appendix of the dissertation.

- o **Conclusion:** This chapter will conclude the dissertation with a critical evaluation of the system and suggestions for any future work. The evaluation should include a critical discussion and assessment of results of project. This chapter should also identify any deficiencies in the final product and highlight how improvements could be made

- o **References:** The details of the references are provided in References section of the dissertation. You should include any web links too.

- o **Appendices:** - System Documentation-Provide program installation, compilation and execution details.; Design Documentation- Any design documentation that is not critical to be included in the main text (Chapter 3) but could still be of interest to a reader can be added to the appendices. These could be for example design diagrams (e.g., data flow, entity relationship, database schema and UML) that have not been included in the main text; User

- o **Documentation**-User documentation may cover all aspects of the system, with appropriate screen shots and explanations; Management Reports- In addition to producing day to day transaction reports (e.g. a payroll system should produce an individual pay sheet, coin analysis to make cash payments, EPF report etc.) a system must produce summarised reports for the management (e.g. monthly, quarterly payments made by organisation, employees, overtime Hrs by employee, etc.). These reports will be included here; - Code Listing; Glossary and Index

Note: Project guidelines shall be notified by the Department at the end of V semester BCA course. The documentation guideline to document the project work in the form of dissertation shall be notified to the students well in advance during VI semester BCA course.