Course Outline

COMP3601
Design Project A

Teaching Period 2 2009

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Course Aims

This course aims to teach students how to design real world hardware/software codesign projects. Throughout the course of the semester, students will work in groups to achieve a complicated design using and FPGA and external hardware connected to a PC.

At the beginning of the course, students will be assigned to a group and given a design task. Several required parameters for the task, including a budget, will be provided to students.

This course builds upon the skills you have learnt in other courses, such as COMP2121, COMP3222, electrical engineering and software design courses to complete a large project through group participation.

Student Learning Outcomes

Through completing this course, students will:

- gain experience in co-operating and delegating within a group
- aid the design of a real system
- be able to interface external boards to the PC
- gain research skills in designing and purchasing components
- gain experience in building and prototyping external hardware
- write design documentation
- learn to work within a budget

This course contributes to the development of the following graduate attributes:

Graduate Attribute	Where Acquired
the skills involved in scholarly enquiry	Project Research
an in-depth engagement with relevant disciplinary knowledge in its interdisciplinary context	Project Resarch and Implementation
the capacity for analytical and critical thinking and for creative problem solving	Project Implementation
the skills to locate, evaluate and use relevant information (Information Literacy)	Project Research
the capacity for enterprise, initiative and creativity	Project Implementation
the skills required for collaborative and multidisciplinary work	Team Management
a respect for ethical practice and social responsibility	Lectures

Assumed Knowledge

Before commencing this course, students should:

- know how to program an FPGA
- know how to construct circuits
- know how to program PC software

These are assumed to have been acquired in the courses COMP3222, COMP2121, etc.

Course Staff

Contact Details

Staff Name	Role	Email	Phone
Sri Parameswaran	Course Convenor	sridevan at cse.unsw.edu.au	57223
Jorgen Peddersen	Lecturer	jorgenp at cse.unsw.edu.au	57229

Course Details

Course Code: COMP3601
Course Title: Design Project A
Units of Credit: 6
Course WebSite: http://www.cse.unsw.edu.au/~cs3601/
Handbook Entry: http://www.handbook.unsw.edu.au/undergraduate/courses/2009/COMP3601.html

Resources for Students

There are no texts for this course. Students should make good use of the Internet to design their project.

The Digilent website will come in very handy for details pertaining to the board. Please make good use of it.

Course Schedule

The early weeks of lectures will include. Further lecture subjects will be added as approriate.

- Introduction and Outline of the porject
- Introduction to hardware available in the student labs
- Revision of VHDL coding style for large projects
- Professional Ethics

Teaching Rationale

The course will be taught through a series of lectures that provide information relevant to project design. However, most of the learning will accomplished by the students themselves as they work towards the design of a complicated project in a group situation.

Teaching Strategies

Teaching for the course will be provided in a very limited basis. It is expected that the students will spend most of their contact hours working on the project. This teaching method supports the aims to give students the ability to manage themselved in a group situation to solve a large problem.

Contact hours will be provided as follows

- Teaching in class will focus on areas of design that may benefit students. It is expected that these will last for 1 hour each week.
- Weekly meetings will be held where one member from each group (different each week) will provide feedback of the group's progress for the previous week.
- Laboratory times that will allow students to have contact with an experienced tutor.
- Other contact will exist between group members as they work on the design of the project .

Assessment

Assessment will be performed in the following manner:

- Project Design - Marks will be provided based on successful completion of the project
- Meeting Performance - All students will be expected to attend and present short discussions of progress on two occasions throughout the semester.
- Peer Assessment - Each students' contributions to the group are rated by the remainder of the group.
- Design Documentation - Throughout the semester, each student within the group will prepare one design document from the following list throughout the semester. Each report is to be done by one student. Teams of less than 4 students may choose to not perform one of the reports or a student may double up and receive the best mark from two or more reports.
  - Initial Design Report - Covers original plans for circuit and software design
  - Operation and Maintenance Manual - The Operation Manual provides usage requirements of the design suitable for the end-user. The Maintenance Manual provides specifications on how to fix design

problems.
    - Final Design Report - Provides technical specifications of the final design
    - Magazine Article - Write a descriptive article about the design of your product and its usefulness
- Team Reports - Every student will provide the following short reports:
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- Initial Team Report - Due early in the semester. Students discuss their team-mates detailing their strengths and weaknesses and the proposed task breakdown.
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- Final Team Report - Submitted at the end of semester. Students describe the work output of each team member and discuss their relevance to the work done in the project.

Reports will be submitted electronically via the subject webpage. The final project will be assessed via a live demonstration by the group members in week 13 or the exam weeks (at the group's discretion).

Academic Honesty and Plagiarism

Plagiarism is defined as "using the words or ideas of others and presenting them as your own". UNSW and CSE treat plagiarism as academic misconduct, which means that it carries penalties as severe as being excluded from further study at UNSW. There are several on-line sources to help you understand what plagiarism is and how it is dealt with at UNSW:

- Learning Centre: Plagiarism and Academic Integrity
- MyUNSW: Plagiarism and Academic Misconduct
- CSE: Addendum to UNSW Plagiarism Guidelines
- CSE: Yellow Form (whose terms you have agreed to)

Make sure that you read and understand these. Ignorance is not accepted as an excuse for plagiarism.

Course Evaluation and Development

Student feedback on this course will be obtained via electronic survey (CATEI) at the end of session, and will be used to make continual improvements to the course. Students are also encouraged to provide informal feedback during the session, and to let the lecturer in charge know of any problems, as soon as they arise. Suggestions will be listened to very openly, positively, constructively and thankfully, and every reasonable effort will be made to address them.

Previous feedback has led to changes in the weighting and method of assessment tasks to better suit the student responsibilities. The project choice has also changed based on the capabilities of students and to better prepare students for the follow-up subject, Design Project B (COMP4601).