Outcome-based Final Year Projects in Computing

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FYP in Computing

- Compulsory
  - Across DD and Major/Minor
- Carries 9 credits
- Spans 2 semesters

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Professional Outcomes

- Ability to
  - Conduct literature survey for selected problem in IT and Computing
  - Connect material collected to the problem
  - Define the problem
  - Generate solutions to the problem
  - Formulate and analyze alternative solutions
  - Realize and evaluate the results objectively

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General Outcomes

- Critical thinking in problem solving
- Presentation and communication skills
- Report organization and writing skills
- Independent learning and information integration skills
- Project management skills

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FYP Process

- Project selection (April to May)
  - New students are encouraged to attend current student presentations
- Proposal submission (October)
- Mid-term progress report (January)
- Final report and presentation (April to May)

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Marking Scheme

	Supervisor	Co-examiner
Problem identification (literature search)	15%	5%
Problem solving (critical thinking)	40%	10%
Communication & presentation (demonstration & reports)	10%	10%
Project management and self-discipline	10%	0%

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Subject Elements

- FYP is different from regular subjects
  - No specific exercise or test
  - Only project plus the final presentation (a kind of oral exam)
- Subject elements
  - Literature survey
  - Proposal writing
  - Guidance and regular meeting
  - Project execution
  - Final report writing
  - Presentation

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Program Level Outcomes Concerned

- 1. Communication
  - Practiced (report and presentation)
  - Measured (final grading)
- 2. Global outlook
  - Practiced (literature survey and report)
  - Measured (partially reflected in report grading)
- 3. Ethical issues
  - Possibly practiced (literature survey and report)
  - Measured (possibly reflected in grading report)
- 4. Critical thinking and reasoning
  - Taught (staff guidance of student)
  - Practiced (project execution)
  - Measured (final grading)

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Program Level Outcomes Concerned

- 5. Technical knowledge and problem solving
  - Taught (staff guidance of student)
  - Practiced (project execution)
  - Measured (final grading)
- 6. Continuous and life-long learning
  - Practiced (literature survey and project execution)
  - Measured (partially reflected in final grading)
- 7. Teamwork and leadership
  - Possibly practiced (in certain larger projects comprising of smaller individual projects)
  - Measured (possibly reflected in grading report)
- 8. Programme specific outcome
  - Taught (staff guidance of student)
  - Practiced (project execution)
  - Measured (final grading)

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Mapping subject elements to program-level outcomes (1)

	Program-level outcomes	
Subject elements	1. Communication	2. Global outlook
1. Literature survey		Practiced
2. Proposal writing	Practiced	Practiced
3. Guidance and regular meeting	Practiced	
4. Project execution		Practiced
5. Final report writing	Practiced	Practiced
6. Presentation	Practiced / Measured	Measured

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Mapping subject elements to program-level outcomes (2)

	Program-level outcomes	
Subject elements	3. Ethical issues	4. Critical thinking and reasoning
1. Literature survey	Possibly practiced	Practiced
2. Proposal writing	Possibly practiced	Practiced
3. Guidance and regular meeting		Taught / Practiced
4. Project execution		Practiced
5. Final report writing	Possibly practiced	Practiced
6. Presentation	Possibly measured	Measured

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Mapping subject elements to program-level outcomes (3)

	Program-level outcomes	
Subject elements	5. Technical problem solving	6. Continuous and life-time learning
1. Literature survey		Practiced
2. Proposal writing	Practiced	Practiced
3. Guidance and regular meeting	Taught / Practiced	
4. Project execution	Practiced	Practiced
5. Final report writing	Practiced	Practiced
6. Presentation	Measured	Measured

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Mapping subject elements to program-level outcomes (4)

	Program-level outcomes	
Subject elements	7. Teamwork and leadership	8. Programme specific outcome
1. Literature survey		Practiced
2. Proposal writing		Practiced
3. Guidance and regular meeting	Possibly practiced	Taught / Practiced
4. Project execution	Possibly practiced	Practiced
5. Final report writing	Possibly practiced	Practiced
6. Presentation	Possibly measured	Measured

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Difficulties in Measurement

- Multiple supervisors
  - Possibly differing standards
- Differing types of of projects
  - Research-oriented
  - Application-oriented
  - Design-oriented
  - Collaboration with industry
  - Size and scope of project / sub-project

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Quality Assurance Processes

- Marks must be justified in marking sheet
- Large discrepancy cases (between supervisor & co-examiner marks) reviewed
- QA panel ensures consistency of grading and quality of A projects

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QA Panel

- Staff from major areas of expertise represented
- Reviews best and worst reports
- Students may be invited to present in front of the panel again and to answer questions

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Issues for Consideration

- Strengthen teaching of critical skills in a more formal way (e.g. literature survey, presentation, project management).
  - Communication had been addressed in an ELC subject accompanying a level-3 term project.
- Importance of grading for mid-term progress.
  - Taking into more weighting of intermediate progress into final grading.
- Relative importance of individual components.
  - Some group-oriented projects could be too interrelated that it becomes hard to measure individual contribution.
  - Each student just claims credit from the shared component.
- Balancing the final grading weighted across different outcomes.
  - How to cater for "small" outcomes like ethical issues?

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Discussion

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