Symposium on Engaging Undergraduates in Research And Inquiry:

A scholarly Dialogue, May 20, 2011, HKUST

1. Project/Course title

Underwater remote operating vehicle group project and competition

2. Project/Course team

Name	Institute	Post	Department/ Division	E-mail
Course Instructor/Project leader: L. F Yeung	CityU	Associate Professor	Electronic Eng.	eelyeung@cityu.edu.hk
Members (if any): Robin Bradbeer, Paul Hodgson	CityU, Oceanwave	Associate Professor,Visiting Fellow	Electronic Eng.	

BEFORE

3. Project/Course objectives (or Intended Learning Outcomes) *(Suggested number of words 30-40 words)*

What did you intend students to learn from this project/course?

This is a special group project that spans from the second year to the final year of the undergraduate programme. It is designed as a multidisciplinary group project (4 to 6 students per group), which contributes to part of the course requirement (electronic Product Design) and serves as their final year project. The product will be used to enter the MATE remote operating vehicle (ROV) contest.

This project enables students to acquire: 1. Project management and inter-personal skill, 2. multidisciplinary problem investigation and solving skill, 3. skills of applying theory to practice, 4. social awareness and its applications.

DURING

4. Inquiry Based Learning Activities (*Suggested number of words: 75-85 words*)

What did students do (inquiry-based learning activities) during the course/project?

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1. Background and feasibility studies,

2. Project planning and top-down subdivision of tasks,

3. Exploration and acquisition of knowledge out of their principal area of studies,

4. Division of labour, design, implementations, diagnostic and project integration skill,

The learning activities included literature and web based information acquisition, guided training and workshops, hands on experience, and finally, project report presentations.

AFTER (*Suggested number of words for items 5 & 6: 50-60 words*)

5. How did you assess the effectiveness of students' learning?

Please give an account of the assessment methods and results.

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1. Interview and interim report assessment,

2. Project presentation, and question and answer sessions with supervisors and peers.

3. Project demonstrations, justifications in terms of engineering sense,

4. Project competition, so that peer to peer comparison can be made and learnt.

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6. What were the major outcomes of this project/course? Do they match with your

objectives (or Intended Learning Outcomes)?

Examples of outcomes include educational software, improvement in student learning or change in student attitude.

A workable underwater remote operating vehicle (ROV) was built, tested, and demonstrated to fulfill a set of specific missions in the contest. The winning team will receive awards and be sent to compete at the international contest.

Very often, the product is not reliable enough for prolonged testing. It is quite understandable since they are still at undergraduate level, rather than professional.