



Ref. No.

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**Projects on Promoting Outcome-Based Approaches in Student Learning
2007-08
Application for OBA Funding**

PART I: General Information

1. Title

Assessing generic outcomes of AMA programme(s)

2. Name(s) of Applicant(s)

Project Leader

Name	Dept	Post	Groupwise	Ext.
Chan, Chi Kin	AMA	Assistant Professor	Chi Kin Chan	6928

Team Member(s)

Name	Dept	Post	Groupwise	Ext.
Chan, Chun Wah	AMA	Senior Lecturer	Chun Wah Chan	6918
Hung, Kim Fai	AMA	Lecturer	Hung Kim Fai	6929
Ip, Wai Cheung	AMA	Associate Professor	Ip Wai Cheung	6953
Wong, Heung	AMA	Associate Professor	Heung Wong	6942
Yiu, Ka Fai	AMA	Assistant Professor	Cedric Yiu	6923
Yam, Sheung Chi	AMA	Lecturer	Phillip Yam	6931

3. Total funding requested

4. Expected duration of project: 24 months

Proposed commencement date: 01/09/2008

Expected completion date: 31/08/2010

PART II: DETAILS OF PROPOSAL

1. Project objectives and significance

(What are your objectives in initiating this project? How does it align with institutional goals and targets in implementing outcome-based approaches in student learning?)

The project intends to develop a set of assessments guidelines for the evaluation of students in achieving the intended generic learning outcomes of AMA programmes. Examples of such outcomes are:

- (a) secure a solid foundation of knowledge and techniques in mathematics;
- (b) assess and evaluate mathematical models for a wide range of practical situations, with a critical awareness of the appropriateness of competing models;
- (c) demonstrate logical reasoning, creative thinking and to make professional judgements in the appraisal of multi-disciplinary techniques.

The results of the project will provide information that can be used to determine whether or not intended outcomes are being achieved and how the programmes and student learning can be improved. The assessment process will also be designed to inform colleagues and other decision-makers about relevant issues that can impact the programmes and student learning.

2. Target users

(Who are the intended users of the 'deliverables' of the project – faculties / departments management or programme/subject teams or students?)

The programme outcomes to be assessed are largely generic to the Honours programmes offered by the Department and are imbedded in most AMA subjects. Hence the deliverables are expected to be adopted to assess all full-time and part-time students enrolled in the Honours programmes (BSc (Hons) in Investment Science, BSc (Hons) in Statistics and Computing, BSc (Hons) in Actuarial Science) offered by the Department of Applied Mathematics.

If the target users are students, complete the table below:

Programme code	Programme title	Credit units	Mode of study	Student intake quota per year

Please insert rows in the table if more space is required for additional information.

3. Outcomes and deliverables

(a) Major outcomes and deliverables

(What will be the major outcomes and deliverables of the project?)

	Major outcomes and deliverables with descriptions
(i)	Instruction guidebook for departmental academic staff
(ii)	A set of sample test/ examination questions for assessing the performance of students in accordance with the stated objectives
(iii)	A set of feedback questionnaires for both academic staff and students

Please insert rows in the table if more space is required for additional information.

(b) Plan for developing and piloting / implementing the deliverables

(Detail the plan and procedures that you will adopt to develop and pilot/ implement the outcomes and deliverables. Also specify the dates of the pilot / implementation period)

The approach to developing the deliverables will involve the following items:

- (i) Visits to industrial agencies of varying sizes to discuss the mechanism and functionality of respective sectors as well as follow up visits or meetings to investigate any suitable test/ examination questions, case studies and final year projects etc. which can help to evaluate the overall performance of students.
- (ii) A set of questionnaires will be drafted in order to gather the views on OBE from both the academic staff and students.
- (iii) Meetings will be held to appraise and revise the execution of the OBE.
- (iv) Instruction guidelines will be set to give guidance on how each academic staff prepares his/ her own set of test/ examination questions. Training seminar series/ workshops will also be held in order to help academic staff to get familiar with the practical implementation of OBE.
- (v) Use regular assessments through specific test/ examination questions in predetermined subjects (Advice from and alignment with professional bodies will be explored) to test if the student is, for example:
 - Acquainted with a substantial understanding of the contemporary mathematical models, techniques and theory.
 - Able to develop a personal critical mind to justify the appropriateness of various competing mathematical models in a variety of practical situations in both physical and social sciences.

Planned pilot / implementation period of the deliverables:

Start Date (dd/mm/yyyy):01/09/2009.....

End Date (dd/mm/yyyy):31/01/2010.....

4. Dissemination and sharing plan

(How are you going to disseminate and share the outcomes and deliverables of your project?)

- (a) Sharing sessions will be organized regularly to disseminate intermediate outcomes (e.g. pilot run results) and to collect input and feedback from colleagues, alumni and professional bodies, etc.
- (b) The set of sample test/ examination questions will be distributed to all academic staff so that they can be used in different subjects for assessing the performance of students in accordance with the stated objectives.
- (c) Surveys will be conducted with the set of questionnaires developed, and the feedback from colleagues, alumni, mentors, professional bodies and students will be analyzed. Seminars will then be organized to disseminate the results.
- (d) The instruction guidebook will be submitted to the DLTC for evaluation and implementation approval.
- (e) The instruction guidebook will also be distributed to academic staff to broaden their understanding of OBE and help them to incorporate the OBE elements into their teaching methods. It will be used in all AMA programmes.
- (f) Mathematics serves as one of the foundation subjects for many departments in the University. There are many AMA subjects that are required in other departments' programmes. The survey results and the guidebook will be made available to other departments for curriculum review and programme alignment purpose.

5. Evaluation plan

(How do you plan to evaluate the effectiveness of the project, particularly its impact on the implementation of outcome-based approaches in student learning in the PolyU?)

The effectiveness of the project will be evaluated by the three types of users/advisors below:

- (a) Academic staff will be surveyed on the effectiveness of the project on the achievement of programme outcomes. Front line teachers can combine traditional and outcome-based approaches to meet new challenges. They can also evaluate the impact on the implementation of outcome-based approaches in student learning in the University.
- (b) Mentors, alumni and external reviewers such as professionals from the Hong Kong Mathematical Society, Hong Kong Statistical Society and the Census and Statistics Department of the HKSAR will be consulted. Before making evaluation, they will be given elaboration on the goals and objectives of the project. They will be asked to compare the outcome-based approach with traditional methods or those adopted by their organizations.
- (c) The most important group consists of the students. Surveys and exit interviews can be conducted to obtain their evaluations of the project.

The project team will meet to discuss findings from above. Academic members outside the project team may also be invited to join the discussions. A report will be sent to the DLTC of AMA Department.

6. Impact

(How will the project contribute to the success of the implementation of outcome-based approaches in student learning in the PolyU/ department/ programme/ subject?)

- (a) The deliverables of the project provide the needed that can facilitate the implementation of OBE within the Department.
- (b) The project will establish a basis for future instructional and curriculum improvement in AMA that would reshape educational experiences inside and outside classrooms, which would in turn enhance learning and teaching.
- (c) The project will also lead to new ideas in teaching methods, such as the use of more active learning methods, as academic staff seek to provide students with opportunities to learn and practise their mathematics skills. Learning how to do assessment or incorporate active learning methods into programmes may also influence academic staff's engagement in professional development opportunities on teaching and learning.

7. Target date(s) for submission of progress and completion reports

	Planned submission date (mm/yyyy)
1. Progress report <i>(for projects whose duration lasts more than 1 year; to be submitted mid-way through the proposed project period)</i>	09/2009
2. Completion report <i>(to be submitted within 3 months after the project completion date)</i>	11/2010

PART III: BUDGET OF PROPOSAL

***Important Notes**

1. Funding requests for equipment and/ or software will be considered only if:
 - a. the equipment / software is essential to the successful implementation of the project, AND
 - b. it is not available in the department concerned. The Project Leader has the responsibility to check this out.
2. The purchasing policies and procedures of FO must be followed for the procurement of approved items.
3. Funding request for conference attendance will not be considered.

Project Leader

Name: CHAN, CHI KIN
(in block letters)

Signature: 

Dept: AMA


Date: 29th January, 2008

PART IV: DEPARTMENTAL ENDORSEMENT

Endorsement by Chair of FLTC/ DLTC:

Comments on the proposal:

Endorsed.

Name: F. G. Shin (in block letters) Signature:  Date: Jan 31, 2008


Endorsement by Deputy HoD:

Comments on the proposal:

This project provides an opportunity for students of AMA to develop outcome-based learning. Apart from linking the students learning with subject learning outcomes, the project will also emphasis on programme learning outcomes. It is a highly worthwhile project and I strongly support it.

By endorsing this proposal, I agree that:

- 1. The proposal suitably addresses the School/Department's needs in promoting and implementing outcome-based approaches to student learning and will be considered as part of the School's/Department's Business Plan.**
- 2. The School/Department will receive a funding as calculated for item (e) in the Budget section which I will use for providing the time release recommended by the project proposers, based on the Total Workload Model, to support them to work effectively on the project.**

Name: Dr CHAN CHEONG KI (in block letters) Signature:  Date: 29 January 2008

Please return this form to Miss Miranda Fung, Secretary of Working Group on Outcome-based Education,
c/o Educational Development Centre
by 31 January 2008

Supplementary Note

Proposed Project: Assessing generic outcomes of AMA programme(s)
Chief Proposer(s): Dr. Chan Chi Kin (AMA)

- justify the strong needs to employ two project staff

This project involves sample surveys, data collection, data analysis and organization of sharing sessions and seminars which we expect will require two years of intensive work. We plan to recruit one Project Associate for 18 months to carry out the large amount of work involved under our supervision. The deliverables that the Project Associate helps to prepare include an instruction guidebook, a set of feedback questionnaires and a set of sample test/ examination questions for assessing the performance of students in accordance with the stated objectives. In order to ensure the outcome to be achieved, the Project Associate thus is required to have strong mathematical and statistical backgrounds while at the same time a strong insight in educational aspect.

Since the Project Associate will mainly work on survey sampling, mathematical and statistical analysis, a Project Assistant is necessary to carry out a large amount of computer programming work to facilitate the project progress. The Project Assistant is expected to construct a website to promote outcome-based approaches in AMA. On the other hand, the Project Assistant has to work on disseminating the survey results. The Assistant thus needs to have strong background in computer science, information technology or related areas.

- justify the budget for the books and references (*Important Notes: The funding requests for such items will be considered only if: (a) they are essential to the successful implementation of the project, AND (b) they are not available in the department/PolyU.*)

The budget for books and references is a provision for the purchase of updated research monographs, technical reports and reference books on Survey Sampling, Website Development and Outcome-Based Education that may not be promptly available in both departmental and central libraries.