

AUTC Physics Project

Interview In-depth Questions for Selected Institutions

Interviewee is a person nominated by Head of School, ideally the person responsible for physics education matters (e.g. Education chairperson).

Anticipated Length: 75 minutes

A copy of this interview will be provided in advance of the interview.

A copy of the Explanatory Statement to Head of School and their nominated representatives will be provided in advance to the interviewee.

Permission to tape this interview is requested, to ensure accuracy of the summary used for the project.

GLOSSARY

Physics service subject: is one delivered, maintained and assessed largely by the department of physics, specifically designed for non-physics majors (including interest courses such as Physics for Life Sciences and Astronomy).

Multidisciplinary subject: is where the teaching of a subject is substantially shared between physics and other departments, schools or faculties.

Mainstream subject: is one that physics majors or potential physics majors take. A mainstream subject can also be taken by non-physics majors.

Overview:

The project team has been asked to explore how physics teaching is responding to changes such as the increasingly multidisciplinary nature of science and broader employment possibilities, new technologies and approaches to teaching and learning. This interview will explore some issues in more depth than was possible in the written questionnaire.

Curriculum development:

We will focus on subjects primarily offered as (to be selected by the project team for each institution, max of two)

- service teaching for engineering or related technologies**
- service teaching for biomedical**
- multidisciplinary course with substantial physics component**
- mainstream physics**

Representative subject(s) would be _____ and _____

For your [*selected*] subjects, who decides the subject content?

- (a) one person from physics
- (b) one person from client faculty
- (c) a team (including academics from client faculty for service subjects)
- (d) other (please describe)

For your [*selected*] subjects, who decides the subject content?

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- (b) one person from client faculty
- (c) a team (including academics from client faculty for service subjects)
- (d) other (please describe)

How often is subject content reviewed and revised?

- (a) four to five years
- (b) when client faculty thinks it's necessary
- (c) depends on circumstances (explain)
- (d) other (please describe)

Learning outcomes:

Do published objectives/ learning outcomes exist for your [*selected*] and [*selected*] subjects?

- (a) yes
- (b) no
- (c) other (please describe)

How are students informed of these outcomes?

- (a) handouts
- (b) verbal notices
- (c) web notices
- (d) other (please describe)

Could you please provide one of your best example of learning outcome statements. This will be useful as we seek a range of good practices in various areas.

What methods are used to establish whether objectives/ learning outcomes are achieved?

- (a) exams
- (b) assignments, reports and essays
- (c) oral student presentations
- (d) assessment of skills eg laboratory skills
- (e) class surveys
- (f) student focus groups
- (g) outside reviewer
- (h) other (please describe)

Do you align learning outcomes with graduate attributes and competencies? For your [*selected*] subjects, and for your [*selected*] subjects? If so, how?

Are students informed and/or aware of this alignment?

How are learning outcomes and objectives balanced with content in subject reviews and curriculum planning?

Do you use any external benchmarks to evaluate teaching and learning outcomes? (e.g. standard Course Experience Questionnaire, diagnostic tests for particular content areas, comparison with other institutions)

What processes do you have for reviewing subjects/curriculum/teaching?

Do you have outside/industry involvement in your review process? If so, how has this been helpful?

If you have made major changes in your teaching methods or curriculum recently, has this come from initiatives from within the department or from outside factors? Please comment.

If you have an effective process for review, could you please provide a copy of the relevant description of the process (for the purpose of establishing a range of good practices)

Student expectations and feedback:

Do you have ways of gauging the expectations of students entering the course in which you teach these subjects? If so, please describe.

How do you sample student feedback and how do you respond to it?

Web-based (on-line) teaching and learning:

To what extent is the Web used for teaching and learning?

The following four categories may be useful.

1. Information about a subject is online for students to access (optional).
2. Learning strategies and resources are available online (supplementary).
3. Completion of a subject requires on-line work or access.
4. Students study and complete subject online with no face-to-face teaching.

Why has it been introduced? How has this resulted in improved learning? Have there been disadvantages?

Projects:

To what extent do projects form part of your undergraduate physics (or multidisciplinary) curriculum. If applicable, please describe the main reasons for having projects.

Staff development and support:

What training and support do you provide for sessional or casual teaching staff (including postgraduate students)? Please provide brief details.

- (a) Tutor/demonstrator training
- (b) Evaluation and feedback
- (c) Mentoring by experienced tutor/demonstrator
- (d) Regular meeting with subject leader/coordinator or laboratory supervisor
- (e) Regular meetings with demonstrator/tutor group
- (f) Other (please describe).

If applicable, what approaches are used to deal with staff shortages? Are any particularly successful? What are the advantages, disadvantages and consequences of these approaches?

Employment, industry involvement:

What mechanisms are used to inform students of career prospects and the usefulness of further studies in physics?

What types of information do you gather from employers about graduate attributes, skills and overall employer satisfaction? How do you use this information?

Role of Professional organisations, networks, peers:

Has your department's teaching benefited from interaction with peers in Australia or overseas? If so, how? (e.g. from Australian Institute of Physics events, the AIP Accreditation process, other conferences and workshops, individual contacts?)