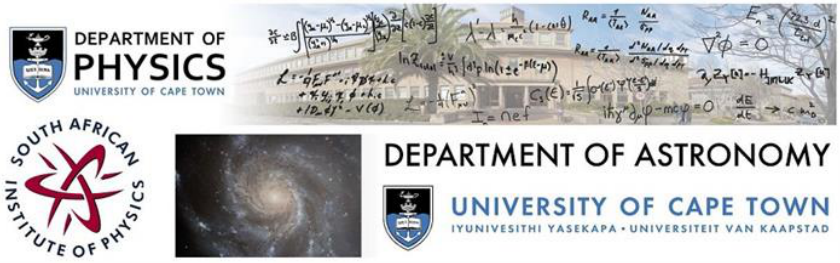

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The metacurriculum of first year physics service courses

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Abstract content
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Research reveals a wide variety of factors which affect student achievement in first year university physics courses. Lecturers may try to address these issues in their courses in some way, by input into their courses which is beyond physics – this can be regarded as the metacurriculum of a physics course. Our study investigates the metacurriculum in four physics service courses. Our research question is: what is the metacurriculum of the first year physics service courses in the University of Cape Town physics department? The courses in our study are a course for medical students, a course for engineers, a course for students in an extended curriculum programme, and a course for BSc students who are not planning to continue with physics. Each of these courses is a successful course insofar as it has good throughput. The lecturers of these courses care about their teaching and are recognised by students as good lecturers. Each lecturer mapped out their meta-curriculum, and also answered the question: what are the maxims which you repeatedly say in your course? They then met to workshop and refine their representations of their meta-curricula. These representations were then analysed. We found that the metacurricula were idiosyncratic, based on the lecturers' own experience and knowledge of their students' needs. The issues addressed were diverse, for example, epistemologies of the relationship between science and indigenous knowledge, learning theories, and stereotype threat. The maxims communicated desired attitudes to physics, for example 'you can be wrong but you can't be apathetic' and 'there's no such thing as a stupid question'. The lecturers found value in discussing their ad-hoc additions into their courses in terms of a curriculum which operates in parallel with the physics curriculum. Further study could investigate the effect of these meta-curricula on students.

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Primary author: Dr TAYLOR, Dale (UCT)

Co-authors: Mr LEIGH, Gregor (University of Cape Town); Dr WHEATON, Spencer (Department of Physics); Dr PETERSON, Stephen (University of Cape Town)

Presenter: Dr TAYLOR, Dale (UCT)

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