NEW COURSE

Department: ORIGINS INSTITUTE

Course Name: **ORIGINS 3A03**
ORIGIN OF SPACE-TIME
To be offered first in 2007-08

Date: November 2004

Calendar copy description:

ORIGINS 3A03: ORIGIN OF SPACE-TIME
The mathematics, particle physics, and astronomy that are required to understand the Big Bang and how our universe formed.
Three hours; one term.
Prerequisites: registration in Level III in the Origins Research Specialization or by permission of instructor.
Not offered in 2005-2006.

Expected enrolment:

50

Enrolment limited? If so, why?

Yes, to ensure that an environment that is conducive to developing skills in independent scientific research and self-directed, problem-based, and inquiry-based learning is provided to students.

Other department(s) consulted.

Biochemistry, Biology, Chemistry, Geography and Geology, Mathematics and Statistics, Physics and Astronomy, Psychology, Associate Dean of Science, Dean of Science, Provost, President

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Is this course cross listed? If so indicate course(s).

PTO

Resource implications.

A $7500 teaching buyout has been secured for this course.

Detailed course content and reasons for introduction of course.

This course provides an opportunity for students to explore the most fundamental origins problem: whence space-time? To consider possible solutions to this problem, a researcher must adopt a multidisciplinary approach, involving mathematics, particle physics, and astronomy. Thus, the course material will provide students who are enrolled in the Origins Research Specialization with the tools that will be necessary for advanced learning in Big Bang Theory and the fate for our universe, perhaps as a Level IV senior thesis project. This learning will suit well students who graduate from the specialization with the skills and perspective necessary for conducting research at the Perimeter Institute in Waterloo.

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