OS Autumn Course Descriptions

Astronomy

This course is a scientific exploration of the human place in the universe. Astronomy is possibly the most fundamental of all sciences as it seeks to explore both the roots of the Universe and its ultimate fate through the disciplines of Physics and Mathematics. We study the origin and history of the Universe and the formation of the Earth and the solar system. We will look at the birth of stars such as our own Sun, the life cycle of stars and their final destination as white dwarfs, pulsars or black holes, the structure of our home galaxy the Milky Way and some speculation about the first and final minutes of our Universe. We compare the Earth's properties with those of the other planets and explore how the heavens have influenced human thought and action. This course includes study of the properties of light and matter and the tools astronomers use to measure radiation from celestial sources. The course also covers exciting contemporary topics such as black holes, the expansion of the universe and the search for extra-terrestrial life.

Creative Writing

This course is designed for young writers to improve their skills. The course will deal with various aspects of writing including short stories, novellas, and long narrative. A section of the course will be devoted to writing in verse, using metre and constructing poetry. We will look at the development of writing from the idea stage to the actual written word on the page. Works of established writers will be examined to help us with our craft The class will be have a high practical element with groups of students forming their own writing workshops. Participants will be asked to submit extracts of work for evaluation, to read from their work, and to participate in writing exercises in class. The course is suitable for those with an interest in creative writing and who wish to learn new techniques to improve their work.

Game Theory

Game theory is the study of strategic interactions. This course is about asking what happens when people or things with different incentives or motivations interact against one another to achieve their own best outcome. It has become the under pinning of evolutionary theory, economics, business processes, international relations, and is the subject of major motion pictures, like 'A Beautiful Mind'. In this course we will discover the laws underpinning every game and study specific examples of different types of games taken using examples from literature, the movies, board games, economics, molecular biology, international politics, business studies, dating, game shows, government funding opportunities and, of all things, fuel injection mechanisms in cars and the songs of the Dunes in the Sahel. Students will learn to develop their own games and study the development of others. No mathematical knowledge is needed to take the course as all concepts will be developed as we go in a fun and intuitive way, focusing on the ideas and their implications rather than the technical aspects of the theory. Students who care about understanding their world should enjoy this course.

Human Rights Law

Human rights increasingly define the contours of individual entitlements and state responsibilities at both a national and an international level. Ireland's international human rights commitments create claims and remedies for Irish people that can be pursued through a wide variety of forums.

This course will explore the status of international human rights law in Ireland and the relationship between domestic and international law. The course will begin with a structural focus on the Irish legal system, the international legal system surrounding the United Nations and the regional human rights system established under the auspices of the European Court of Human Rights. The course will then shift to more substantive

issues, considering a variety of topical issues in international human rights law, such as children's rights and socio-economic rights to food, shelter, education and health care. The course will have a practical focus, concluding with an emphasis on human rights advocacy on both the national and international stages.

Maths Experience

Why does a coffee cup look the same as a donut? Are some infinities truly bigger than others? What problems are too difficult for a computer to solve? Mathematics is the abstract study of structure, space, quantity, and philosophy - and not only a means to gain answers, but a system to make questions precise too. In this course we will investigate statements such as these by exploring the shores of modern mathematics and some of its component disciplines: logic, geometry, number theory, topology. We will find an astounding number of applications to game theory, cryptography, computer science and more.

Medicine

Do you want to be a doctor in the future? If so, why not try this innovative taster course in medicine, which contains both theoretical and practical elements. Students will learn about health and illness with a focus on anatomy, the causes, prevention and possible cures and treatments of various diseases. The course will focus on problem based learning where these health practitioners of the future will be taught the basics of medicine using case studies, evidence from expert Speakers and advice from the instructor. Debates and discussions on topics such as the value of alternative therapies, should blood and organ donation be compulsory, and is biotechnology the way forward for medical treatments, will be carried out by the students.

Philosophy

Philosophy is possibly the most fundamental of subjects as it asks the question: `What does it mean to be?' The aim of this course is to enable students to acquire the basic skills of philosophy i.e. analytic argument and essay writing; and to introduce students to some of the most profound thinkers in history. The course will cover some of the fundamental concerns of philosophy such as: the history of philosophy, metaphysics and epistemology, logic, ethics and political theory, the philosophy of mind. Over the course students will be introduced to the Pre Socratic and Greek philosophers, the enlightenment philosophers from Descartes to Kant, and more recent philosophical movements such as existentialism, phenomenology, and linguistic philosophy. In short the course seeks to teach `The Art of Thinking'.

Psychology

The aim of this introduction to Psychology is to encourage students to consider questions about the human mind, brain, and behaviour. Students will be stimulated to think critically and analytically as they review recent psychological research and engage with an empirical research project of their own design. Areas of Psychology which will be studied include personality, child development, social psychology, learning, research methods and the brain.

The course will be delivered in an interactive, dynamic group format intended to foster a questioning and evaluative stance in students. At the end of this module, students can expect to have a better knowledge of the scope of psychological enquiry as well as an appreciation of some of the methodological issues which span the field of psychological research today.