



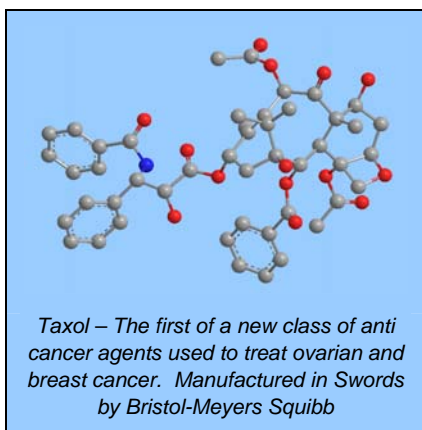
## Medicinal Chemistry (TR075): A Special Moderatorship in TCD

### Introduction

The interface between chemistry and biology is an extremely active and exciting area of science. It is also of immense practical and economic importance.

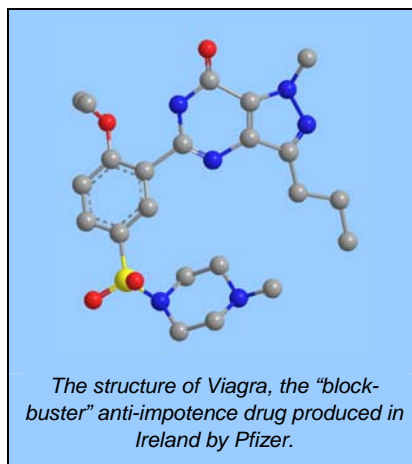
The business of designing new drugs, and making them efficiently, is one of the most valuable, and profitable, activities in the modern world. Large as it already is, the pharmaceutical sector is expected to grow still further as populations grow older. It is a major contributor to the Irish economy; the pharmaceutical sector's exports make Ireland one of the world's largest exporters: in 2003 the pharma-chem sector exported over €32 billion, representative of 35% of all national exports.

The profits in the pharmaceutical industry derive essentially from intellectual property. It is one of the most *knowledge-based* of industries and requires an intensive investment in research and development. Chemists, who participate in the development of new drug molecules or develop the processes needed for large-scale manufacture, carry out much of this R&D.



This course is funded by the Irish government under the National Development Plan 2007-2013 and aided by the European Social Fund (ESF) under the Human Capital Investment Operational Programme 2007-2013.

TCD was the first university in Ireland to offer such a degree in "**Medicinal Chemistry**" in 2000 and it has proven to be highly successful and extremely popular and has seen six graduating classes since 2003.



### The Course

The course is based in the **School of Chemistry**, and provides an excellent general grounding in Chemistry. However, there is a special emphasis on synthetic chemistry (making molecules - the core activity of the Chemical Industry) and on topics related to drug design. The first two years are taken in the company of Science (TR071) students: Medicinal Chemistry students will, however, take a specific combination of courses (Biology, Chemistry, and Mathematics in the first year; Chemistry and Biology or Chemistry, Mathematics and Biology, in the Second year). In the third and fourth years, students take elements of the standard Chemistry course, along with specialist Medicinal Chemistry lectures given within the School of Chemistry.

Courses are also provided by the *School of Pharmacy* the *School of Biochemistry and Immunology* and the *Department of Microbiology*, in addition to a series of lectures from industrial speakers. Practical work is focused on synthetic organic chemistry, with some experiments in inorganic and physical chemistry. A final year research project is undertaken either in TCD or, if circumstances permit, laboratories in an external University within Europe or North America or in Industry.

### Entry Requirements

The course is accessible mainly through single, separate CAO entry, with an annual intake strictly restricted to twenty eight students. The entrance requirements will be as for TCD Science (TR071). A small number of Sophister places may be made available on a competitive basis through TR071, for students who have taken the necessary courses in the Freshman years. Students must meet the requirements of the Science Course Office in order to rise with their year. The degree will be awarded under the regulations of the Science Course Office.



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