Some of your specialist 700-level coursework Units

**CBMS700**
Engages students with those topics currently dominating the chemical and biomolecular sciences. It will expose students to current research questions across the range of the broad discipline. Activities are based on **seminar attendance**, as well as directed reading of research papers and the discussion and **critiquing of research topics** in written and seminar forms. Students will be guided to a range of readings that engage new directions of scientific thought and break-through methodologies, such as recent Nobel Prize-winning outcomes. This unit will allow students to reflect on current trends and to communicate changes underway.

**MRES700**
Develops skills appropriate to the effective communication of academic research, in a variety of forms and for a range of audiences. Students will learn to analyse and practice different academic genres in writing, oral presentation, multimedia and other platforms, for both specialised and general audiences.

**CBMS780**
Provides hands-on experience by direct interface with molecular science underway in the Department of Chemistry and Biomolecular Sciences. Students will **participate in the programs of two distinct research groups** over the semester and navigate typical situations encountered as members of a scientific research team. They will engage in a range of pertinent laboratory activities, receive preparative training in advanced molecular techniques from research scientists, and attend team meetings at which experimental data are reviewed and research planning is encountered.

**Molecular Sciences Research Topics:**

**CBMS791**
As the control of changing forms of matter lies at the heart of chemistry, this unit will examine the principles of change in more complex systems and quantitative terms that are appropriate to graduate level studies. The molecular insight developed in this course will prepare students for creative research in basic and applied organic chemistry or interface fields.

**CBMS794**
Builds on fundamental concepts in molecular biology and bio-engineering to explore themes in the emerging field of synthetic biology. This course will provide students with the conceptual framework of systematic molecular design in order to build new componentry and biological systems. The unit will be taught extensively through the primary literature and will provide students with hands-on experience in cutting edge tools required to design and synthesize biological parts. Exemplars of current applications including generation of biofuels, microbial synthesis of pharmaceuticals, and design of biosensors to detect infection and environmental waste will be examined. This unit will also focus on the ethical, legal and societal issues surrounding synthetic biology.

**CBMS792**
Chemical biology is the science of small molecules in the context of living systems. This course focuses on current topics in Chemical Biology, particularly experiments in which small molecules are used to probe or control biological systems in novel ways or manipulate biological systems. As the goal of the course is to familiarize students with innovative recent experimental approaches and to stimulate them to explore the boundaries of chemistry and biology, the unit will be taught extensively through the primary literature.

**CBMS793**
Addresses some advanced methods of analysis utilised in the biomolecular sciences. Biomolecular sciences spans the study of individual molecular structures and biochemical reactions to also encompass the "omics" sciences of genomics, proteomics, metabolomics and glycomics. These sciences all generate large and complex datasets that require specialized programs and methods to assemble and analyse. The analyses are challenging, as they not only require a good knowledge of biochemistry, molecular biology, and cell and developmental biology, but also an understanding of limitations of both the programs and the data quality. This unit will provide a background to the data acquisition methods, quality control of the datasets, and analysis methods within a number of these areas. Most importantly it will provide hands-on experience in the analysis of real large-scale datasets and the correct use of the appropriate analysis tools available.