**biochemistry 4H03**

**DRUG DISCOVERY and Biotechnology**

**­TERM 2 (2023)**

The course will focus on the fundamentals, paradigms and processes of modern-day pharmaceutical/biotech discovery research. In the class lecture/ discussion a keen focus will be placed on the translational nature of drug discovery with the overriding goal to revisit the fundamentals of biochemistry in context of real and practical problems. Entrepreneurship and overview of company creation principles will serve to provide students with context to suggest new biotech ventures within class-based teams. Content will be in 2 parts, lecture format and group inquiry:

**(i) Lectures in modern drug discovery.**

An introduction of the principles and paradigms of modern drug discovery. Within each scheduled lecture there will also be break out sessions where teams/groups will be formed to discuss relevant ideas. Breakout sessions are to focus on companies that have conducted drug discovery pursuits relevant to the lecture materials. In these breakouts– students will focus on creating short critiques of the company ideas and goals. Dr. Magarvey will present aspects of entrepreneurship in discovery & venture capital involvement in company formation. Microsoft teams will be used when appropriate to facilitate group discussion.

**(ii) Group inquiry of a therapeutic area and proposal for an R&D strategy.**

Principles highlighted in the lecture component will be reinforced by group study of an assigned therapeutic area. The outcome of this work will be a group proposal for the discovery of a new chemical entity/or concept for an assigned therapeutic area. Here the students will hone skills in group inquiry, attend tutorial sessions with the instructors to develop their ideas and present their proposals as both a written report and in seminar format. Dr. Magarvey and the TAs for the course will work directly within Microsoft teams.

**Evaluation Due Date Weight**

Test 1 (individual mark) Feb 7th (take home) 25 %

Log books (individual mark) – technology descriptions 10 %

Progress meetings (group mark) Tutorial sessions I and II 10 %

Presentations (group mark) See attachment 30 %

Test 2 (individual mark) handed out on Apr 4 due on April 11th 15 % (test based on student presentations)

Commentary (individual mark) – Key Enabling Technology definition Apr 9 10 %

**Notes:** Group evaluations will be taken into account when evaluating group work

components. The course facilitators reserve the right to adjust marks accordingly. Also marks will be posted on Avenue to Learn with student numbers. By attending this class, you are agreeing to this method of grade disclosure. Any student who infringes the University's Statement on Academic Ethics and the Senate Resolutions on Academic Dishonesty as detailed in the Senate Policy Statements will be treated as prescribed.

**Instructor:** Dr Nathan Magarvey (magarv@mcmaster.ca), MDCL-2320

TA: Mathusan Gunabalasingam (gunabam@mcmaster.ca)

 Norman Spencer (spencenr@mcmaster.ca)

**Class schedule:**

Tuesdays (2:30-5:20 pm)