PURPOSE:

To develop an understanding of the business opportunities that biotechnology has created within the pharmaceutical industry and other areas, particularly with regard to similarities, differences and mutual synergies between biotech and more traditional business activities. To determine the key issues, inputs and outcomes in managing and developing a biotech business; to explore different business models, business activities and financial consideration. In addition, the course hopes to provide students with a real world, non-academic perspective of the biotechnology to better prepare them to be successful in a very exciting but complex industry.

The format of the course will combine experienced industry guest lecturers and case study analysis where the students will review and be prepared to discuss a case in class. Most classes will feature a guest speaker who will provide his or her perspective on the subject covered that day and also participate in the case study discussion. Guest speakers will include:

1. Eric A. Adams, President & Chief Executive Officer, enGene, Inc. [www.engeneinc.com](http://www.engeneinc.com)
2. Dr. Brian Bapty, Biotechnology Analyst, Raymond James Ltd. [http://raymondjames.ca](http://raymondjames.ca)
3. Dr. Anthony Cheung, Founder and Chief Science Officer, enGene, Inc. [www.engeneinc.com](http://www.engeneinc.com)
4. Dr. Charles Fisher, Chief Medical Officer & Executive Vice President, Clinical and Regulatory Affairs, Cardiome Pharma Corp. [www.cardiome.com](http://www.cardiome.com)
5. Dr. Christopher C. Gallen, President & Chief Executive Officer, Neuromed Technologies Inc. [www.neuromedtech.com](http://www.neuromedtech.com)
6. David Main, Chairman, President & Chief Executive Officer, Aquinox Pharmaceuticals [www.aqxpharma.com](http://www.aqxpharma.com)
7. R. Hector MacKay-Dunn, QC, Partner, Farris, Vaughan, Wills & Murphy LLP [www.farris.com](http://www.farris.com)
8. William D. Milligan, Senior Vice President, Corporate Development & Chief Business Officer, MIGENIX Inc. [www.migenix.com](http://www.migenix.com)
9. Dr. Simon Pimstone, President & Chief Executive Officer, Xenon Pharmaceuticals Inc. [www.xenon-pharma.com](http://www.xenon-pharma.com)
10. Timothy M. Ruane, Chief Executive Officer, Inex Pharmaceuticals [www.inexpharm.com](http://www.inexpharm.com)
COURSE TEXTS:

Cases:

Case 1, Millennium Pharmaceuticals (A) (Harvard) – Individual Assignment
Case 2, The Medicine Company (Harvard) – Team Assignment
Case 3, Vertex Pharmaceuticals: R&D Portfolio Management (A) (Harvard) – Individual Assignment
Case 4, GenePharm International (Stanford) – Team Assignment
Case 5, Merix Bioscience (Ivey) – Individual Assignment
Case 6, Connetics and Relaxin (Stanford) – Team Assignment

Readings:

What You Can Learn from Managers in Biotech by Edward Prewitt (Harvard)
Mastering the Value Chain: An Interview with Mark Levin of Millennium Pharmaceuticals (Harvard)
Others to be assigned.

STUDENT EVALUATION:

1. Case Write Ups (6) 50%
2. Final Assignment (a case analysis) 20%
3. Class Participation 30%

COURSE OUTLINE:

Class 1 – Monday, May 7: An overview of the Biotechnology and Pharmaceutical Industries

- Guest Speaker: Dr. Christopher C. Gallen, President & Chief Executive Officer, Neuromed Technologies Inc. www.neuromedtech.com
- Topics covered:
  - Mission and Vision of the Biotechnology Industry
  - Scope of the Biotechnology Industry
  - Pharma & Biotech - the Value Proposition
  - Strategic Considerations
  - The R&D Engine - Challenge and Opportunity
  - Creating the Future
  - Choosing Your Arena
- Reading:
  - The Life Science Revolution: A Technical Primer by Gary Pisano (HBS)
  - What You Can Learn from Managers in Biotech by Edward Prewitt (HBS)
Class 2 – Monday, May 14: Biotech and Pharma Value Chain, Different Models at Different Stages
  o Guest Speaker: William D. Milligan, Senior Vice President Corporate Development & Chief Business Officer, MIGENIX Inc. [www.migenix.com](http://www.migenix.com)
  o Preparation:
    ▪ Case 1, Millennium Pharmaceuticals (A) – Individual Assignment
    ▪ Reading: Mastering the Value Chain: An Interview with Mark Levin of Millennium Pharmaceuticals (HBS)

Holiday – Monday, May 21 (Victoria Day)

Class 3 – Monday, May 28: Business Models: Partnering and Licensing
  o Guest Speaker: Dr. Simon Pimstone, President & Chief Executive Officer, Xenon Pharmaceuticals Inc. [www.xenon-pharma.com](http://www.xenon-pharma.com)
  o Topic covered:
    ▪ Overview of Xenon's partnership deals
    ▪ Why they did these deals,
    ▪ When they shouldn’t do these deals, and
    ▪ Tactics to getting the best deal done.
  o Preparation:
    ▪ Review Xenon’s website and read up on the partnerships they have completed

Class 4 – Monday, June 4: Commercial Activities: Marketing and Sales
  o Guest Speaker: Eric A. Adams, President & Chief Executive Officer, enGene, Inc. [www.engeneinc.com](http://www.engeneinc.com)
  o Preparation:
    ▪ Case 2, The Medicine Company – Team Assignment

Class 5 – Monday, June 11: Managing Research and Development, the CSO Perspective
  o Guest Speaker: Dr. Anthony Cheung, Founder and Chief Science Officer, enGene, Inc. [www.engeneinc.com](http://www.engeneinc.com)
  o Preparation:
    ▪ Case 3, Vertex Pharmaceuticals: R&D Portfolio Management (A) – Individual Assignment

Class 6 – Monday, June 18: R&D 2: The Challenges of Clinical Development and Regulatory Approval and Strategies to Deal With Them
  o Guest Speaker: Dr. Charles Fisher, Chief Medical Officer & Executive Vice President, Clinical and Regulatory Affairs, Cardiome Pharma Corp.
  o Preparation:
    ▪ Reading, to be assigned
Class 7 – Monday, June 25: Building and Protecting the Assets of Biotechnology and Legal Consideration of the Biotech Industry

- Guest Speaker: R. Hector MacKay-Dunn, QC, Partner, Farris, Vaughan, Wills & Murphy LLP [www.farris.com](http://www.farris.com)
- Preparation:
  - Case 4, GenePharm International – Team Assignment

Holiday – Monday, July 2 (Canada Day)

Class 8 – Monday, July 9: Financial Strategy from Start-up to (and through) IPO

- Guest Speaker: David Main, Chairman, President & Chief Executive Officer, Aquinox Pharmaceuticals [www.aqxpharma.com](http://www.aqxpharma.com)
- Preparation:
  - Case 5, Merix Bioscience – Individual Assignment

Class 9 – Monday, July 16: Valuing Technology, Valuing Companies

- Guest Speaker: Dr. Brian Bapty, Biotechnology Analyst, Raymond James Ltd.
- Preparation:
  - Reading to be assigned

Class 10 – Monday, July 23: The Good, Bad and Ugly, Managing Crisis (and class wrap up)

- Guest Speaker: Timothy M. Ruane, Chief Executive Officer, Inex Pharmaceuticals [www.inexpharm.com](http://www.inexpharm.com)
- Preparation:
  - Case 6, Connetics and Relaxin – Team Assignment

Class 11 – Monday, July 30: Final Team Assignment Due