ISSS Biotech Business	
Contact hours	13
credit points	1
Lecturer	Prof. Dr. Francisco Vidal Barbosa Universidade Federal de Minas Gerais, Belo Horizonte, Brazil
Topics	learning outcomes:  - understand the importance of innovativeness, entrepreneurial spirit, and new technologies for sustainable business development  - differentiate between different types of start-ups and spin-offs  - get an overview about biotech industries and biotech markets  - evaluate the use of genetically modified organisms  - evaluate success factors in bio business  - explain investment opportunities  outline:  1. Innovation, Entrepreneurship and New Technologies  2. Start-Ups and Spin-Offs  3. The Biotechnology Market: Commercialization, Business opportunities and Trends;  4. Biotechnology Industry Facts  5. Biotechnology: Competitiveness and Commercialization  6. Agricultural Biotechnology: Genetically Modified Organisms  7. Critical Success Factors in Bio Business  8. Investing in Innovation  9. Entrepreneurship and Innovation
References	Audretsch, D. B., Stephan, P. E. Biotechnology in Europe: lessons from the USA, <i>International Journal of Biotechnology</i> , Vol.3, Nos. 1, 2, pp.168-183, 2001.  Barbosa, F. V. <i>Competitiveness and Privatization</i> , CEPEAD, 2001.

Barbosa, F. V. Biotecnologia e o comercio internacional: oportunidades, comercializacao e expansao, ENANPAD, 2002.

Biotechnology Industry Organization, *The Editors' and Reporters' Guide to Biotechnology*, BIO, 2005.

Biotechnology Industry Organization, *Some facts about biotechnology, Industry Statistics: 1993-2001*, BIO, 2002.

Biotechnology Industry Organization, *State Government Initiatives in Biotechnology*, BIO, 2001.

Calestous, J. Biotechnology in the Global Economy, *International Journal of Biotechnology*, Vol.2, Nos. 1, 2, 3, pp.1-6, 2000.

Commission on Science and Technology for Development, *Key Issues in Biotechnology*, UNCTAD, Geneva, May/June, 2001.

Consulting Resources Corporation, *Biotechnology: beyond the recession*, Newsletter, Spring, Lexington, MA, 2002.

Ernst & Young, *The Economic Contributions of the Biotechnology Industry to the U. S. Economy*, Ernst & Young Economics Consulting and Quantitative Analysis, May 2000.

Ferrer, M., Thorsteinsdottir, H., Quach, U., Singer, P. A., Daar, A S. *The scientific muscle of Brazil's health biotechnology*. Nature Biotechnology, Vol. 22, supplement, Dec. 2006.

Galhardi, R. M. A. A. University and small biotechnology firms linkage: the evidence from Brazil, *International Journal of Biotechnology*, Vol.2, No. 4, pp.374-390, 2000.

GAO, International Trade: concerns over biotechnology challenge U.S. agricultural exports, United States General Accounting Office, June 2001

Hamilton, W. F. The biotechnology revolution; lessons for technology management research and practice, *International Journal of Biotechnology*, Vol.3, Nos. 1, 2, pp.157-167, 2001.

James G. Heller Consulting Inc., *Background economic study of the Canadian biotechnology industry*, Environment Canada and Industry Canada, Toronto, June 1995.

Lehman, V. *Divided they stand: Biotechnology industry and its critics in the USA*, A report for the Heinrich Boll Foundation, Washington Office, July, 2001.

OTA, Commercial Biotechnology: an international analysis, Office of

chnology Assessment, Congress of United States, 1984.  Jugh, J., Lafrance, J. C., Meeting the Challenge: U. S. industry faces the 21th stury, U. S. Department of Commerce, Office of Technology Policy, 1997.  Jugidis, A. Strategies of biotechnology firms towards new, platform chnologies, International Journal of Biotechnology, Vol.3, Nos. 1, 2, pp.23-2001.  Jugidish Clusters of Innovation: regional foundations of U.S. Inpetitiveness, Monitor Group, 2001.  Jugidish T. Critical Success Factors in Biopharmaceutical Business: a Imparison between Finnish and Californian Businesses, Technology Review, 201.
ritury, U. S. Department of Commerce, Office of Technology Policy, 1997.  risidis, A. Strategies of biotechnology firms towards new, platform hnologies, <i>International Journal of Biotechnology</i> , Vol.3, Nos. 1, 2, pp.23-2001.  rter, M. <i>Clusters of Innovation: regional foundations of U.S. inpetitiveness</i> , Monitor Group, 2001.  ratiainen, T. <i>Critical Success Factors in Biopharmaceutical Business: a inparison between Finnish and Californian Businesses</i> , Technology Review, 201.
hnologies, International Journal of Biotechnology, Vol.3, Nos. 1, 2, pp.23-2001.  ter, M. Clusters of Innovation: regional foundations of U.S. inpetitiveness, Monitor Group, 2001.  utiainen, T. Critical Success Factors in Biopharmaceutical Business: a inparison between Finnish and Californian Businesses, Technology Review, 201.
npetitiveness, Monitor Group, 2001.  utiainen, T. <i>Critical Success Factors in Biopharmaceutical Business: a</i> nparison between Finnish and Californian Businesses, Technology Review, 01.
nparison between Finnish and Californian Businesses, Technology Review, 01.
van D. Caianaa taahnalagu and sustainahilitu International Journal of
ven, P. Science, technology and sustainability, <i>International Journal of technology</i> , Vol.3, Nos. 1, 2, 3, pp.07-15, 2000.
ss, T. Success factors for biotechnology: lessons from Japan, Germany and eat Britain, <i>International Journal of Biotechnology</i> , Vol.3, Nos. 1, 2, pp.134-5, 2001.
nott-Reverberi, S. <i>The BioValley Business model: from a high potential in sic research to the creation of new companies,</i> Workshop on basic earch, Norway, 2001.
tal, J. Intellectual property and biotechnology: trade interests of veloping countries, International Journal of Biotechnology, vol.3, Nos. 1, 2, 168-183, 2001.
lectures discussions
ritten exam (60 minutes)