



Advanced course for Master and PhD students (IQ474B-2015)

Biobased-economy Beyond Bioethanol

Connecting the advances in **BIOBASED PRODUCTION** technology, **sustainable process design** with principles of new **BUSINESS DEVELOPMENT** for **BIO JET FUELS**

Competitiveness and sustainability of biorenewables require integration of chemicals, fuels and energy production with the agro-industries. And integration requires developments in new technology, innovation in design, integrated new industries and a strong entrepreneurial mind-set.

The aim of this course is to connect science and technology development, and translate this into a business goal and business plan for competitive and sustainable bio jet fuels. The course consists of:

- a **kick-off seminar** with speakers from leading Brazilian and international aviation and chemical industries and universities,
- **classes** on topics such as advances in biobased chemicals and energy production technologies, sustainability and socio-economic impacts, process development, systems integration and conceptual process design, economy and business plan development.
- groups of students, of multiple disciplines, work together on the **real-life case** of bio jet fuels, relevant to national and international industry, turning knowledge into a compact business plan supported by a techno-economic design for integrated biorenewables production.
- A **final presentation and discussion of the business plan**, and the best business plans will be pitched to a panel of industries, professors and investors. The best pitch will be awarded.

Materials: Hand-outs and literature references.

Schedule: August until November 2015.

Location: School of Chemical Engineering (FEQ) at Unicamp, Campinas.
Offered in close collaboration with Delft University of Technology and BE-Basic, from The Netherlands.

Examination: Business plan and presentation is marked following the usual UNICAMP system.

Credits: 4 credits (60 hours), course is open to Master and PhD students from all faculties.

Language: This course will be given in English.

Enrolment: Please indicate your interest to participate via brazil@be-basic.org. No fee is charged for this course. Official enrolment through regular DAC procedures (**IQ474B-2015, 2nd semester**). Minimum: 15 students.

Information: Prof. Gustavo Paim Valença (FEQ|UNICAMP) or brazil@be-basic.org.