

Course title: **Laboratory on biofuels – selectable course**

Institute/Division: **FACULTY OF CHEMICAL ENGINEERING AND TECHNOLOGY**
Erasmus subject code: WITCh ICHIP oIIS B7
Number of contact hours: 15 hours (15h laboratory)
Course duration: 1 semester (spring or fall)
ETCS credits: **1**

Course description: The aim of the course is to learn modern transport biofuels obtained from renewable raw materials. The laboratory exercises will include: synthesis of biodiesel fuel from pure or waste vegetable oils, as well as yeast fermentation of hydrolysed starch combined with efficient distillation. The physicochemical properties, composition and functional quality of prepared biocomponents will be tested and compared with traditional mineral fuels. The analysis will include: chemical composition by chromatography, analysis of density, viscosity, flash point in open crucible, freezing and cloud points, selected characteristic values - acidic, neutralization, saponification, and iodine numbers, and other specified in European standards.

Literature: [1] Olsson L — Biofuels, Berlin, 2007, Springer,
[2] Mielenz J.R — Biofuels - Methods and Protocols, , 2009, Humana Press

Assessment method: **Laboratories reports and final test**
Prerequisites: **Completed or in progress lectures on Biofuels**
Primary target group: **all specialties students**

Lecturer: dr inż. E.Skrzyńska,
Contact person: dr inż. E.Skrzyńska e-mail: eskrzynska@pk.edu.pl

Deadline for application: **15th of January for students applying for spring semester, 30th of August for students applying for winter semester**
Remarks: **The course will start for at least 3-5 foreign student**