



**POWER4BIO**  
REGIONS FOR  
BIOECONOMY



## Bioeconomy Courses at the University of South Bohemia 2016 – 2019

POWER4BIO Cross visit to South Bohemia, Nov 30 – Dec 1, 2020

Bc. Josef Maxa – Faculty of Economics, University of South Bohemia

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818351



# Bioeconomy Courses - very short history



- ✓ Eva Cudlínová became a member of the Bioeconomy Panel of the European Commission in the period of 2013 to 2016.
- ✓ Bioeconomy is presented as an important topic abroad, possible future promising direction for regional development - one of the suitable topics for the our Department of Regional management at the Faculty of Economics.
- ✓ There were very few information about bioeconomy in the South Bohemian Region not even in the Czech Republic.
- ✓ In the 2016 was established the Bioeconomy Initiative at the University of South Bohemia. The aim is to involve in this platform different faculties and disciplines (Faculty of Economics, Faculty of Sciences, Faculty of Agriculture) to coordinate actions mainly focused on the Region of South Bohemia.
- ✓ Actions are focused on promotion of benefits from the Bioeconomy improving the health, boosting the productivity of agriculture and industrial processes, and also enhancing environmental sustainability.
- ✓ Bioeconomy potential requires special policy, regulations, strategy, communication by the stakeholders and the necessary investments for its economic development.
- ✓ The idea of the annual international bioeconomy course for prevailingly college/ university students.

# From the POWER4BIO project point of view...



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- ✓ The Bioeconomy course was one of the very first opportunities to present bioeconomy as a topic on the regional or even national scale
- ✓ It brought together researchers, college / university teachers and students with representatives of business sector, decision makers and public administrative.
- ✓ This network became a base of Regional Bioeconomy Hub/ expert group of the POWER4BIO project – which has transformed to South Bohemian Association for Bioeconomy and also for POWER4BIO USB team.



**BIO**  
economy

THIRD BIOECONOMY COURSE  
UNIVERSITY OF SOUTH BOHEMIA  
MAY 21 – 25, 2018

# Course characteristics



- ✓ Course is responding **to modern market requirements**, demanding professionals for a new field of Bio-Economy.
- ✓ Bio-Economy reflects a new, **sustainable approach** to science and technology.
- ✓ Bio-Economy is **highly valued in the scientific, industrial and political circles**.
- ✓ Potential of Bio-Economy lies in the large scale **replacement of fossil fuels and synthetic materials with renewable, biological resources**.
- ✓ This issue **affects a large number of sectors and applications**, from energy production, chemicals manufacturing and agriculture to construction and waste management.
- ✓ **Technological innovation play significant role** in the implementation of the Bio-Economy.
- ✓ **Course examines relevant** technological trends, and puts it in the **context** of economic, social and political context.

# Structure of the courses



## 1. Introduction to Bioeconomy

- ✓ Main ideas of bioeconomy – Theoretical lectures providing introduction to Bioeconomy from economic, political and environmental point of view
- ✓ Definition(s) of Bioeconomy
- ✓ Bioeconomy as challenge and opportunity for region, Czech Republic, EU, global perspective
- ✓ Basic scientific, educational, policy background



# Structure of the courses



## 2. One day excursion – bioeconomy in practice

- ✓ Institute of Microbiology Academy of Sciences – ALGATECH), Czech Academy of Sciences of the Czech Republic

*Potential of microalgae, algae and cyanobacteria*

- ✓ Sasov u Jihlavy Biofarm + CzechHemp + Hempoint

*Biogas plant, unconventional use of hemp*

- ✓ Biogas station and WWTP in Třeboň

*Heat for Aurora baths - pipes with biogas, which burns the cogeneration unit. 75% of the biogas goes to the biogas pipeline, the rest remains for the technological process. Acquired energy is supplied to the grid.*

- ✓ Pyrolysis Svatý Ján nad Malší

*production of electricity from wooden chips pyrolysis*









# Structure of the courses



## 3. Research results and bioeconomy, bioeconomy and supporting policy, bioeconomy projects

- ✓ Excursion to labs with an expert guide
  - *Hydroponics, Aquaponics, aquaculture systems*
  - *Entomopathogenic and mycoparasitic fungi and their use in biological control*
  - *Testing of bio-preparations for plant preservation and soil enrichment*
- ✓ Good practice presentation of companies, case studies focused on bioeconomy
  - *Bioplastics, Biofuels, Biorefineries, Bioenergy*
  - *Regional dimension of bioeconomy*
- ✓ Policy programs and support measures focused on Bioeconomy
  - *Strategy and support for Bioeconomy within EU*
  - *Possibilities for Bioeconomy in Czech Republic and the South Bohemian Region*
  - *Bioeconomy strategies comparison*
  - *Networking*



# Structure of the courses



## 3. Presentation of students' teamwork results

Tasks for students' work in groups – the tasks are set up at the beginning of the course

- ✓ Implementation of bioeconomy in our country
- ✓ Analysis of the bioeconomy product
- ✓ SWOT analysis of biomass sources



# First Bioeconomy Course (May 23 - 28, 2016)

## **18 students from 7 institutions – 3 countries (Czech Republic, Serbia, Slovakia)**

Czech Technical University in Prague, Czech Republic

Charles University in Prague, Czech Republic

Masaryk University, Brno, Czech republic

Singidunum University, Belgrade, Serbia

Technical University of Liberec, Czech Republic

University of South Bohemia in České Budějovice, Czech Republic

University of Ss. Cyril and Methodius in Trnava, Slovakia

## **16 lecturers from 12 institutions – 4 countries (Czech Republic, Germany, Greece, France)**

Biofarm Sasov by Jihlava, Czech Republic

CLIB2021 (Cluster Industrial Biotechnology) Düsseldorf, Germany

Czech Biogas Association/ CzBA o.p.s., Czech Republic

CzechHemp, Hempoint, Czech Republic

Institute of Experimental Medicine in Prague, Academy of Sciences of the Czech Republic

Institute of Microbiology, Czech Academy of Sciences of the Czech Republic

Ministry of the Industry and Trade of the Czech Republic

Technology Centre ASCR, Czech Republic

The Institute of Technology and Business in České Budějovice, Czech Republic

University of Athens, Greece

University of Haute Alsace, France

University of South Bohemia, Czech Republic

More info: <http://bei.jcu.cz/bioeconomy-course>



# First Bioeconomy Course (May 23 - 28, 2016)



# Second Bioeconomy Course (May 22 – 26, 2017)



## **31 students, 5 institutions, 4 countries (Czech Republic, Serbia, Costa Rica, Germany)**

Institute of Agricultural Economics and Information (ÚZEI - Ústav zemědělské ekonomiky a informací), Czech Republic

Singidunum University, Belgrade, Serbia

Universidad Nacional de Costa Rica, Heredia, Costa Rica

University of South Bohemia in České Budějovice, Czech Republic

Westfälische Hochschule Zwickau – WHZ, Germany

## **24 lecturers, 17 institutions, 7 countries (Czech Republic, Germany, Poland, Greece, Italy, France, Slovakia)**

Czech Biogas Association, Czech republic

Czech Technical University in Prague, Czech Republic

EVIKO, s. r. o. , Czech republic

Forschungszentrum Jülich, Germany

Institute of Microbiology, Czech Academy of Sciences of the Czech Republic

Institute of Botany of the Czech Academy of Sciences of the Czech Republic

Ministry of Agriculture of the Czech Republic

Ministry of Industry and Trade of the Czech Republic

Ministry of Science and Higher Education, Poland

More info: <http://bei.jcu.cz/second-bioeconomy-course>

National Cluster Association, Czech Republic

Technical University of Munich, Germany

Technology Center Czech Academy of Sciences of the Czech Republic

University of Athens, Greece

University of Bologna, Italy

University of Haute Alsace, France

University of South Bohemia, Czech Republic

Research Institute for Oil and Hydrocarbon Gases (VÚRUP, a.s.) Bratislava, Slovakia

# Second Bioeconomy Course (May 22 – 26, 2017)



# Third Bioeconomy Course (May 21 – 25, 2018)

## **25 students, 5 Institutions, 4 countries (Greece, Turkey, Serbia, Poland)**

National and Kapodistrian University of Athens, Athens, Greece

Süleyman Demirel University, Isparta, Turkey

University of Piraeus/ Piraeus-Athens, Greece

University Singidunum Belgrade, Serbia

Wrocław University of Science and Technology, Wrocław, Poland

## **17 lecturers, 12 institutions, 6 countries (Czech Republic, Greece, Slovakia, Turkey, Brazil, Austria)**

Czech Biogas Association, Czech Republic

Institute of Microbiology Academy of Sciences – ALGATECH), Czech Academy of Sciences of the Czech Republic, Třeboň, Czech Republic

Jan Evangelista Purkyně University in Usti nad Labem, Czech Republic

Ministry of Agriculture of the Czech Republic

National and Kapodistrian University of Athens, Greece

National Cluster Association, Czech Republic

PEDAL Consulting, Slovakia

Süleyman Demirel University, Turkey

Technology Center Czech of the Academy of Sciences of the Czech Republic

Universidade Federal de Santa Maria, Brazil

University of South Bohemia, Czech Republic

Vienna University of Economics and Business, Austria

More info: <http://bei.jcu.cz/third-bioeconomy-course>



# Third Bioeconomy Course (May 21 – 25, 2018)



# Fourth Bioeconomy Course (Dec 4, 2019 – one day course)



## **31 students (course in Czech language), 4 institutions**

Masaryk University, Brno

Mendel University in Brno

University of Chemistry and Technology Prague

University of South Bohemia in České Budějovice

## **5 lecturers, 3 Institutions, course for Czech students**

University of South Bohemia, Czech Republic

National Cluster Association, Czech Republic

Czech Biogas Association, Czech Republic

More info: [http://bei.jcu.cz/IV Bioekonomicky kurz](http://bei.jcu.cz/IV_Bioekonomicky_kurz)

# Fourth Bioeconomy Course (Dec 4, 2019 – one day course)



# POWER4BIO website and social media



[www.power4bio.eu](http://www.power4bio.eu)



@power4bioproject



@power4bio



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# Thank you for your attention!

Bc. Josef Maxa

[jmaxa@ef.jcu.cz](mailto:jmaxa@ef.jcu.cz)

[power4bio@ef.jcu.cz](mailto:power4bio@ef.jcu.cz)

<http://bei.jcu.cz/power4bio>



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