



*European
Polytechnical
University*

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2300 Pernik, Bulgaria
Tel. 00359 898751012

ENDORSED:

Rector of EPU: Prof. D-r Marin Marinov

„MASTER “ degree

Form of teaching: *full-time*

Duration of the programme: *1,5 years*

Professional qualification: Master

PROFESSIONAL DIRECTION: 5.4. ENERGETICS

C U R R I C U L U M

OF THE SPECIALITY: BIOFUELS (BF)

2019

PERNIK

www.epu.bg

I. TIME SCHEDULE

Semester	Auditoria Workload	Examinations	Practical Training	Industrial/Field Placement	Practice	Work on Diploma Thesis	Vacations	Total (Number of Weeks)
I	330	5	-	-	-	-	11	25
II	300	3	-	-	-	5	5	25
III	255	2					5	25

II. CURRICULUM

ECTS code: (BF)TNo

- BF- "Biofuels"
- T – type of degree: **B** – „Bachelor”, **M** – „Master”;
- No – serial number of the course;

Lectures (L), Seminar Exercises (SE), Lab Exercises (LE), Practical Training/Fieldwork (PT), Auditoria Workload (total) (AT), Self-Study (SS) per week

Exam (E), Continuous Assessment (CA); Project Work (PW), Coursework (CW), Course Tasks (CT),

I. COURSE STRUCTURE (MASTER - BIOFUELS)

Lectures (L), seminars (S), laboratory work (LW)

First Semester

N°	Subject	Signature	L	S	LW	Auditorium	Self- training	Total	Assessment	Credits
						Total				
1	Biomass and alternate fuel systems.	BFM1	2	1	0	3	3	6	examination	5
2	Biomass for energy, industry and environment.	BFM2	2	1	0	3	3	6	continuous assessments	5
3	Biofuels from Biomass: bioethanol, biodisel, bio-oil, biogas, biohydrogen , sugar from biomass, Fisher-Tropsch liquids.	BFM3	2	1	1	4	4	8	examination	5
4	Biodiesel from Biomass.	BFM4	2	1	1	4	4	8	examination	5
5	Biodiesel from Vegetable Oils.	BFM5	2	1	1	4	4	8	examination	5
6	Elective 1.	BFM6	2	1	1	4	4	8	examination	5
	Total		12	6	4	22	22	44		30

ELECTIVE COURSES

1-1	Production of Methanol from Biomass	BFM6-1
1-2	Production of Butanol from Corn	BFM6-2

Second Semester

N°	Subject	Signature	L	S	LW	Auditorium Total	Self- training	Total	Assessment	Credits
7	Biomass to Biofuels: Strategies for Global Industries.	BFM7	2	1	0	3	3	6	continuous assessments	5
8	Biofuels from Microalgae and Seaweeds.	BFM8	2	1	0	3	3	6	examination	5
9	Conversion of Biomass to Ethanol by Other Organisms.	BFM9	2	2	0	4	4	8	examination	5
10	Improvements in Corn to Ethanol Production Technology.	BFM10	2	1	1	4	4	8	examination	5
11	Characteristics of Biofuels and Renewable Fuel	BFM11	1	1	0	2	2	4	examination	5

	Standards.									
12	Elective 2. (project).	BFM12	2	2	0	4	4	8	examination	5
	Total		11	8	1	24	24	48		30

ELECTIVE COURSES

2-1	Alcohol-Based Biofuel Cells	BFM12-1
2-2	Photosynthesis of biomass and its conversion-related properties	BFM12-2
2-3	Waste biomass resource abundance, energy potential and availability	BFM12-3

Third Semester

N°	Subject	Signature	L	S	LW	Auditorium Total	Self- trainin g	Tota l	Assessment	Credits
13	Thesis	BFM13	0	0	10	10	12	22	defence	20
14	Financing Strategies for Industrial- Scale.	BFM14	0	3	0	3	3	6	continuous assessments	5
15	Elective 3	BFM15	2	2	0	4	4	8	examination	5
	Total		2	5	10	17	19	36		30

ELECTIVE COURSES

3-1	Engineering Photosynthesis for H ₂ Production from H ₂ O: Cyanobacteria as Design	BFM15-1
3-2	Thermochemical processes for conversion of biomass in biofuels.	BFM15-2

II. BASIC PARAMETERS OF THE CURRICULUM

Semester	Weekly Workload							Semester Workload				Control			
	L	SE	LE	PT	AT	SS	Total	L	SE	LE	PT	E	PW	CP	CT
I	12	6	4	-	22	31	53	180	90	60	-	5	1	0	0
II	11	8	1	-	20	32	52	165	120	15	-	5	1	0	0
III	2	5	10	-	17	34	51	30	75	150	-	2	0	1	0
Total	25	19	15	-	59	97	156	375	285	225	-	12	2	1	0

1. Duration of the programme - 1,5 years, 3 semesters

2. Auditorium work load according to the curriculum

Total - 885 teaching hours.

In details:

Lectures - 375 teaching hours

Seminars – 285 teaching hours

Laboratory work - 225 teaching hours

Practice before the thesis – 10 teaching hours

3. Total number of subjects - 15

4. Control

4.1. Examinations - 11.

4.2. Continuous assessments - 3

4.3. Course projects - 1

19.12.2017г.

Head of the Program Green Energetics:

Prof. Ivan Petkov, DSci