

**Design of machines and equipment in bioenergy**

Instructor:

Nataliya Tsyvenkova

Ivan Omarov



**Course Handbook**

TREATY - Nurturing deep tech talents for clean and sustainable energy transition

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## Course Information

Title: Designing machines and equipment in bioenergy

Instructor(s): Nataliya Tsyvenkova, Ivan Omarov

ECTS: 3

|  |  |
| --- | --- |
| Course structure: | 90 hours |
| Lecture classes | 15 hours |
| Laboratory classes | 15 hours |
| Personal Activities | 60 hours |

Mode of delivery: *[ hybrid]*

### Course Summary

### *The aim of the educational discipline is to acquire at the master's level theoretical knowledge and practical skills on the problem of designing machines and equipment in bioenergy, to substantiate and use systems of machines and equipment for the production and use of biofuels.*

### *The main task of the educational discipline is to acquire knowledge and practical skills in the design of machines and equipment for the production of biofuels.*

### Learning Outcomes

Upon completion of the course, students will be able to know about:

1. *Will be able to design machines and equipment for the production of biodiesel, bioethanol, pyrolysis oil, and biogas for heat needs and for the production of electricity, generator gas for heat needs and for the production of electricity, design biotechnological processes for the production of solid fuels for heat needs.*

In order for each participant to complete successfully the course and be awarded the corresponding ECTS credits, they must pass the course assessment. The outcome of the assessment can be either Pass or Fail.

**Assessment methods**

* Exam

|  |  |
| --- | --- |
| **Learning outcomes** | **Assessment examples** |
| * *Will be able to design machines and equipment for production of biodiesel, bioethanol, pyrolysis oil, and biogas for heat needs and for the production of electricity, generator gas for heat needs and for the production of electricity, design biotechnological processes for the production of solid fuels for heat needs.* | Oral presentation, quiz, laboratory research |

### Bibliography

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2. Відновлювана енергетика в аграрному виробництві / Скидан О.В., Голуб Г.А., Кухарець С.М., Ярош Я.Д., Чуба В.В., Медведський О.В., Цивенкова Н.М., Соколовський О.Ф., Кухарець В.В.; за ред. О.В. Скидна і Г.А. Голуба. Київ-Житомир: НУБіП України-ЖНАЕУ, 2023. 449 с.
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### Course Timetable

**The 1-st group**

|  |  |  |  |
| --- | --- | --- | --- |
| **Lecture** | **Date and Time** | **Instructor** | **Venue** |
| 1st | 22.04.2024,  10:10 –11:30 | Assoc. Prof. Nataliya TSYVENKOVA | https://meet65.webex.com/meet/pr1327098956 |
| 2nd | 29.04.2024,  10:10 –11:30 | Assoc. Prof. Nataliya TSYVENKOVA | https://meet65.webex.com/meet/pr1327098956 |
| 3rd | 06.05.2024,  10:10 –11:30 | Assoc. Prof. Nataliya TSYVENKOVA | https://meet65.webex.com/meet/pr1327098956 |
| 4th | 13.05.2024,  10:10 – 11:30 | Assoc. Prof. Nataliya TSYVENKOVA | https://meet65.webex.com/meet/pr1327098956 |
| 5th | 20.05.2024,  10:10 – 11:30 | Assoc. Prof. Nataliya TSYVENKOVA | https://meet65.webex.com/meet/pr1327098956 |
| 6th | 27.05.2024,  10:10 – 11:30 | Assoc. Prof. Nataliya TSYVENKOVA | https://meet65.webex.com/meet/pr1327098956 |
| 7th | 03.06.2024,  10:10 – 11:30 | Assoc. Prof. Nataliya TSYVENKOVA | https://meet65.webex.com/meet/pr1327098956 |
| **Summarizing. Presentation of certificates to graduates.** | 18.06.2024  10:10 – 11:30 | Prof. Gennadii GOLUB  Prof. Viacheslav BRATISHKO  Assoc. Prof. Zinovii RUZHILO | NUBiP, building 11,  library reading room |

**The 1-st group**

|  |  |  |  |
| --- | --- | --- | --- |
| **Seminars, practice and laboratory works** | **Date and Time** | **Instructor** | **Venue** |
| 1st | 22.04.2024,  11:50 –13:10 | Researcher  Ivan OMAROV | NUBiP, building 11,  classroom 105 |
| 2nd | 29.04.2024,  11:50 –13:10 | Researcher  Ivan OMAROV | NUBiP, building 11,  classroom 105 |
| 3rd | 06.05.2024,  11:50 –13:10 | Researcher  Ivan OMAROV | NUBiP, building 11,  classroom 105 |
| 4th | 13.05.2024,  11:50 –13:10 | Researcher  Ivan OMAROV | NUBiP, building 11,  classroom 105 |
| 5th | 20.05.2024,  11:50 –13:10 | Researcher  Ivan OMAROV | NUBiP, building 11,  classroom 105 |
| 6th | 27.05.2024,  11:50 –13:10 | Researcher  Ivan OMAROV | NUBiP, building 11,  classroom 105 |
| 7th | 03.06.2024,  11:50 –13:10 | Researcher  Ivan OMAROV | NUBiP, building 11,  classroom 105 |

### Contact Details of Instructor(s)

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