

# Course

## WIND - Wind Energy

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Version: 2 | Last Change: 05.08.2019 09:04 | Draft: 0 | Status: vom verantwortlichen Dozent freigegeben

### ^ General information

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|-----------------------------|--|
| <b>Long name</b>            | Wind Energy  |
| <b>Approving CModule</b>    | <u>WIND_BaET</u>   |
| <b>Responsible</b>          | Prof. Dr. Ingo Stadler<br>Professor Fakultät IME                                       |
| <b>Level</b>                | Bachelor   |
| <b>Semester in the year</b> | winter semester  |
| <b>Duration</b>             | Semester   |
| <b>Hours in self-study</b>  | 78   |
| <b>ECTS</b>                 | 5  |
| <b>Professors</b>           | Prof. Dr. Ingo Stadler<br>Professor Fakultät IME                                       |
| <b>Requirements</b>         | Basics in Mathematics<br>Basics in Physics<br>Power Electronics<br>Electrical Machines |
| <b>Language</b>             | English  |
| <b>Separate final exam</b>  | Yes  |

### Final exam

#### Details

The exam examines the students' understanding of the operation of wind turbines and their operation under different wind conditions (in contrast to the project, which analyzes the behavior of whole wind parks).

#### Minimum standard

As a rule, at least 50% of the achievable points are required to pass the exam.

### Exam Type

The exam examines the students' understanding of the operation of wind turbines and their operation under different wind conditions (in contrast to the project, which analyzes the behavior of whole wind parks).

## ^ Lecture / Exercises

### Learning goals

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#### Knowledge

Students understand the physics of the wind, and can derive statistical wind distributions from wind data and calculate the energy yields of wind turbines.

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Students understand and describe the tasks of all components of a wind turbine and can assess the influence of the individual parts on each other and can estimate the consequences of the interaction of the components on the energy yield and the economic performance of wind turbines.

### Expenditure classroom teaching

| Type                      | Attendance (h/Wk.) |
|---------------------------|--------------------|
| Lecture                   | 2                  |
| Exercises (whole course)  | 1                  |
| Exercises (shared course) | 0                  |
| Tutorial (voluntary)      | 0                  |

### Separate exam

none

## ^ Project

### Learning goals

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#### Skills

Students can plan wind farms using planning software and comment on the placement of the wind turbines of a park and justify this. In addition to the aspects of energy yield, these include the environmental impact of wind farms.

## Expenditure classroom teaching

| Type                 | Attendance (h/Wk.) |
|----------------------|--------------------|
| Project              | 1                  |
| Tutorial (voluntary) | 0                  |

## Separate exam

### Exam Type

working on projects assignment with your team e.g. in a lab)

### Details

Students perform a wind park planning within a team, divide the necessary tasks among each other and document the planning in reports.

### Minimum standard

The wind park planning report contains the documentation of all relevant aspects.