



**SMAGRINET**  
POWERING SMART GRID  
EXPERTISE IN EUROPE

# MODULE: Methodological manuals for the models

25.11.2020/Train-the-trainers day



## 1. Content

1. Objective of the module
2. Overview of the teaching material
3. Description of the teaching model
4. Grading and feedback
5. General approach to teaching
6. Information from the trainers



# Objective of the module

- Description of the learning outcomes
- Aims for the lecturer

## 2. Objective of the module

### 2.1.1. Learning outcomes

- Analyze, understand and describe the process of the EU energy policy development
- Predict the influence of energy policy
- Understand and assess the impact of the energy sector and its related sectors on social development and energy security.
- Assess the expectations of the energy sector stakeholders.
- Understand the international dimension and output of energy policy in the country's legal regulation.
- Assess the economic, technological and social impact of the introduction of energy types on society and the energy system.
- Assess the efficiency of the overall energy chain, the best technologies used and the balance of costs and expected revenues / savings of the parties.
- Understand the scope of fuel and energy markets from a regional aspect – assess and analyse fuel and energy security of supply and price formulation,
- Understand energy impact on the environment;
- understand the structure, peculiarities and the operational principles of the energy and fuel market;
- understand the need and manage consumption according to energy and fuel prices;
- understand electricity market problems;
- understand the formulation of electricity prices and tariffs

### 2.1.2. Aims as a lecturer

1. Motivate students to develop their abilities to analyse and understand the scope of EU fuel and energy markets, its legislation, strategic plans and its impact on the developments happening in the field of environmental resource efficiency.
2. To give students knowledge about the formation of energy and fuel prices;



- Lecture register for the topics
- Types of materials and methods used in the lectures
  - Gives an idea of how what type of rooms and tech you need

1. General characteristics of distribution network
2. Distributed generation
3. Rayleigh statistics
4. Load and distributed generation forecasting
5. Demand characteristics of consumers and prosumers
6. Allocation of distributed generation
7. Integration of energy storages
8. Optimization
9. Electric vehicle impact on the distribution network
10. Smart grid technologies
11. Power quality
12. Virtual powerplant
13. Power flow
14. Planning of distributed network expansion by modelling equipment
15. Planning of distributed network expansion by power flow and protection

### 3.1.2. Types of materials and methods used in the lecture

10 lecture files will be provided to you after the completion of train-the-trainer program and contractual agreements between the SMAGRINET consortium and the faculty of your University.

- Oral examination forms 40% of the grade.



# Time Schedule planning

- Six months prior
- Three months prior
- One month prior
- During and after the lectures

## SIX MONTHS PRIOR

- Familiarise the module or course goals and re-determine course content.
- Begin reviewing your arsenal of possible supportive material such as:
  - The latest EU policy summaries of new directives.
  - Relevant material regarding your national trends and comparative material with the EU.

## THREE MONTHS PRIOR

- Begin to develop course schedule and syllabus.
- If you have had prior experience re-evaluate your teaching methods and tools at your disposal (excel, CAD and others)
- Determine the dates when you will evaluate student learning: you're your assignments and exams accordingly.
- Organise updated text(s) and other materials, including films, videos.
- If planning to use instructional technology or multimedia equipment, reserve a classroom that has all the necessary components.
- If possible for seminars – contact guest speakers.
- If possible – arrange field trips and other activities

## One Month Prior

- Refine the course syllabus for the concrete semester (might have moved).
- Seek training or consult with SMAGRINET on the possible developments the on how to use updated instructions or other related topics.

## DURING AND AFTER

- Take a few, brief notes after every class session; these notes will remind you of what went well and what you would like to change after the course has concluded for next year.
- Review student evaluations.



# Teaching method

- Teaching with lectures method
- Exercises
- If you are not familiar or start out ten suggestions and tips are provided

## 4.1.1. Teaching with the lectures method

The SMAGRINET lectures are an immensely effective tool for your classroom as they have been previously piloted in the classroom, allowing you as an instructor to provide an overarching theme with pre-organizes material in an illuminating and interesting way.

You as the instructor must take care, however, to shape the lecture for the specific audience of students who will hear it and to encourage those students to take an active and immediate part in learning the module.

### CREATE A COMFORTABLE, NON-THREATENING ENVIRONMENT.

Introduce yourself and explain your interests in the topic on the first day. Encourage questions from the outset. For example, require each student to submit a question about the course during the first day or week. Students can submit these questions via an online discussion forum, such as that which is available on Moodle.

### REVIEW AND PRACTICE THE LECTURE BEFORE CLASS BEGINS.

After writing the lecture, leave at least 30 minutes before your class to organize your thoughts and gather any material you need. Practicing the lecture



# Relatable context to the subject

- The Green Deal
- Grid transition
- Building stock transition
- Transportation transition

## 5. Relatable context to the subject

It has been taken into account that the need to add some readings and classroom discussions help students understand their vital role in the learning process.

In order to avoid problems with attendances, uncompleted reading assignments, and student focus on grades rather than learning it is important to make sure that students recognize the value of what they are learning.

One of the safest ways of connecting and providing insight to students is to reference each topic back to The Green Deal. The Green Deal provides the course for the EUS economy and at the end of the day it will directly affect the industry, society and the environment physically around the students.

### 5.1.1. The Green Deal

The European Green Deal provides an action plan to:

- boost the efficient use of resources by moving to a clean, circular economy
- restore biodiversity and cut pollution



# Motivating students

- Motivation during giving modules
- Simple tips
- Lecturer suggestions

## 6. Motivation of the students

Some students worry about grades; others need to satisfy a course prerequisite. Still others want to learn and explore ideas. In fact, many students are probably motivated to learn and to succeed by a combination of intrinsic and extrinsic elements. The key for us as teachers is to understand what we can do to build students' motivation to learn in our classroom, and to nurture the intrinsic motivation that will guide future learning.

Teachers often assume that, because they are "teaching," students must be learning. Students assume that, because they have read their text and memorized facts, they have learned something.

We know that students respond positively to three elements in most classes:

- A well-organized course;





# The feedback and suggestions from the creators

- The information that Module creators and teachers have provided
- Feedback
- Basically what you have heard and learned during the train-the-trainers programm.



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