Title of the course: **Environmental Technologies and Operations II.- Renewable energy**	*NEPTUN-code:* RKXKM2ABNE	*Weekly teaching hours:* *lecture+practical work+lab work* 2+0+0	*Credit:* 2 *Exam type:* tm
Course leader: Rita Kendrovics-Boda, Dr.	*Position:* associate professor	*Required preliminary knowledge (with code too):* -	

Curriculum:

Students will acquire knowledge and skills about the utilization of energy gained from renewable energy sources: The basics of energy supply. Energy consumption in Hungary. Wind energy. Hydro power. Biomass as an energy source. Liquid bio fuels. Geothermal energy. Utilization of terrestrial heat source. Utilization of solar energy. Photovoltaic conversion. Hybrid systems.

Professional competencies:

Able to perform basic tests of the quantity and quality characteristics of environmental elements and systems by state-of-the-art measuring instruments; to draw up and implement measurement plans; and to evaluate data.
Able to carry out management duties subject to sufficient professional experience.
Able to reveal deficiencies in the technologies applied and process risks and to initiate mitigation measures after getting familiarized with the technology concerned.
Collaboration with civil organizations engaged in environment protection, but willing to argue in order to develop optimal solutions.
Taking responsibility towards society for their decisions made in the scope of environment protection.

Literature:

1. Bent Sørensen: Renewable Energy, 4th Edition, Physics, Engineering, Environmental Impacts, Economics and Planning, Academic Press, 2010, eBook ISBN: 9780080890661 Hardcover ISBN: 9780123750259

2. B Viswanathan: An Introduction to Energy Sources, Indian Institute of Technology 2006, 289 pages, https://nccr.iitm.ac.in/ebook%20final.pdf

3. Robert Ferry, Elizabeth Monoian: A Field Guide to Renewable Energy Technologies, Society for Cultural Exchange 2012, ISBN/ASIN: 061561597X, ISBN-13: 9780615615974; Number of pages: 71