Name of the subject: **Eco-engineering**	*NEPTUN code:* **KEWOKBABNE**	**Weekly hours:** 2 lec + 1 pr + 0 lab	**Credit: 4** **Req: Examination**
Subject leader: **Dr. Ákos Nemcsics**	**professor**	**Prerequisites: -** -	

Description of the subject:

Concise but informative description of the knowledge to be acquired and skills to be developedThe subject is dealing with such technical constructions, which are environmental frendly or material saving or energy efficient. The subject is connecting with the following technological areas: renewable energy sources (such as solar energy, wind energy, water energy, bio mass usage, geothermal energy etc.), ecological architecture (passive and active solar systems, energy ballance, earth houses, smart building, smart settlements, PV house, green roof, green facade etc.), solar cell applications and combined solar systems with collector (e.g. induced ventillation). During the discussion of the abovementioned topics, we will use the results of following topics: engineering, bionics, thermodinamics, exergy analysis, self-assembling, non-linear dynamics etc. For the illustration we show some case studies from various areas

Literature

1. H. Haken: Synergetics; Springer, (1983)
2. Luther W. Skelton: The Solar-hydrogen energy economy; Van Nostrand Reinhold; New York (1984).
3. J. Crowley, L. Z. Zimmermann: Practical Passive Solar Design; Mc Graw Hill, New York, (1983).
4. K. Falconer: Fractal geometry; John Wiley & Sons, Chichster (1993).