Course: Basic environmental economics	**Course type:** practical course	**Credits:** 2	**Course ID:** KTAK244
Course responsible: Prof Antal Papp Dr.	**Programme type:** full time	**Hours:** 10	**Assessment:** prac mark

Course objectives: To become in the field versed enough for the further studies could be based on it.

Competencies to be improved: *Knowledge:* Profound understanding of the basic analytical concepts.
Ability: To employ the technique of CBA; to use the evaluation manual of the World Bank.
Attitude: Critical thinking in assessment of governmental legislation and policies.
Autonomy and responsibility: Brave and independent opinion forming.

Compulsory literature: The relevant articles in Wikipedia

Recommended literature: The relevant themes in "Sustainability, environmental economics, welfare" by Kerekes, Sándor and Marjainé Szerényi, Zsuzsanna and Kocsis, Tamás (2018) **http://unipub.lib.uni-corvinus.hu/3658/**

Course content:

a. Geological history of the Earth, major epochs in the timeline of the Biosphere; evolution's effects on the history of the Earth>.
b. Components of the natural environment, the global environment as a system; ecosystem types and the hierarchy of ecosystems.
c. The place of the human society within the system of ecosystems; environmental effects, environmentally mediated effects, impacts on the environment.
d. Renewable and non-renewable natural sources and sinks; ecosystem services.
e. Value flows and value stocks. Natural capital, valuation of ecosystem services; total economic value.
f. Basic analytical concepts of neoclassical economics (microeconomics), effectiveness and market imperfections/failures. Welfare economics, Pareto effectiveness (optimum) and its alternatives; social welfare function. Economic activities' external effects; internalization of negative externalities.
g. Theoretical foundations, in economic science, of environmental legal regulations (Coase) and of eco-taxation (Pigou); the size of the economically optimal (Pareto irrelevant) environmental harm; examples of ecotaxes.
h. Environmental pressure indicators; whole life cycle analysis, carbon footprint, water footprint (virtual water, water kilometres &c), ecological footprint in relation to biocapacity (carrying capacity). Integrated environmental (status) assessment vs environmental impact assessments.
i. Cost-benefit analysis (CBA), stakeholders, distributional analysis; [extended] cost-effectiveness analysis (E-CBE), distributional E-CBE; triple bottom line (TBL), corporate social responsibility (CSR), global reporting initiative (GRI).
j. System of national accounts, environmental accounts; „greener" (and more societal) alternatives to Gross Domestic Product.
k. Differences between environmental protection and sustainability promotion.
l. Various notions of „sustainable development" (SD): definitions by the UN, the EU, and other bodies.
m. The most popular indices of SD; some other indices of well-being.
n. Economic growth and SD-1: the impact = pollution x affluence x technology (I=PAT) formula and the problems with it.
o. Economic growth and SD-2: the environmental Kuznets curve, and decoupling; interpretations.
p. Reuse and recycling, eco-efficiency, best available technology, resource use intensity and the Jevons paradox, Factor 4 and Factor 10, green economy, cradle to cradle design, circular economy.
q. The polluter pays principle and some other SD principles, the precautionary principle and some other environmental principles.
r. Environmental economics and ecological economics; other schools of thought. Environmental justice, climate justice.
s. System dynamical modelling; stock and flow connections. The most famous world model: the World3 model, the book „Limits to Growth" and the report series to the Club of Rome. Integrated assessment modelling; some important integrated climate change models: DICE and IGSM. Introduction to the economics of climate change: the Stern-Nordhaus debate. Political economy of climate change (and of environmental policy).

Schedule: **1** = a, b, c, d, e; **2** = f; **3** = g; **4** = h, i, j; **5** = k, l, m; **6** = n; **7** = o; **8** = p, q; **9** = r; **10**= s.

Course requirements: submission of pieces of homework, activity at classes
Grading scale: >80 %: excellent, 60-79 %: good, 40-59 %:satisfactory, 20-39 %:pass

Course Programme: environmental science	**Semester:** 2019_2020_2	**Lecturer:** András JÁNOSSY, Dr.