1. Cybernetic Approach in Project Management

Code…….   **Course item:**

1. INFORMATION ABOUT THE COURSE

A. Basic information

Name of course	***Cybernetic Approach in Project Management***
Study level	*Second stage*
Unit running the study programme	*Faculty of Management*
Study programme	*ERASMUS*
Speciality	*General Management*
Name of teacher (s) and his academic degree	*Dr rer. oec. et Dr-Eng. Bogdan Lent, adjoint Professor UST bogdan.lent@utp.edu.pl*
Introductory courses	*Not required*
Prerequisites	*Capability of reflective thinking.*

B. Semester schedule of classes (block wise)

Semester	Lectures	Classes	Laboratories	Project	Seminars	Field exercises	ECTS
summer	15				15		5

C. Course Outline

Projects dominated our life. Substantial part of GNP is generated from various projects. Yet, their performance offers a vast potential for improvements: only 1/3 today deliver the agreed results on time and within the budgeted costs.

The course Cybernetic Approach in project Management introduces the concept of better project management performance through consequent feedback considerations and decision making. Project management is viewed as a number of dedicated processes in alignment with ISO 21500:2012 standard. Feedbacks on three levels: project, process and human decision taking shall lead to faster deviation detection and better risk management in projects.

Course comprises: The cybernetic concept theory, Intuition training, Basic terms and standards in project management, state-of-the-art in project management, L-Timer project management system introduction, Reflection training on personal project experiences.

The andragogical approach, which addresses specifically the adults' education, focusses on interactive lectures, action learning, individual and group exercises and case studies.

D. Course Aims

The course aims in awaking the intuitive, iterative consideration of project occurrences, process implementations and personal conscious decision making. The acquired skills shall allow students to draw the big picture of their approach to the execution of their projects, both in individual private as well as professional environment, based on permanent feed-backing, rather than sequential procedures.

The course with broad application area trains the deployment of acquired knowledge in practical exercises and case studies. It offers foundations for further research and individual development. Course successful knowledge assimilation is evaluated through active course participation, exercise performance, action learning and case study results with final presentation.

2. EFFECTS OF EDUCATION (acc. to National Qualifications Framework)

Knowledge	*Principles of cybernetics. Project complexity. Awareness of intuitive thinking, iterative consideration of project occurrences, process implementations, feedbacking and personal conscious decision making. Analysis of the problem and synthesis of the procedures to get it solved. Practical exercises and case studies.*
Skills	The aims of the course are as follows: **A1**: *To introduce students to the concept of cybernetics of the first, second and third order.* **A2:** *To train students in developing their intuitive thinking and feed-backing on various levels.* **A3:** *To acquit students with the state-of-the-art in project management methods and techniques.* **A4**: *To develop the capability of individual assessment of a project situation and right action.* **A5**: *To train the critical thinking and decision making.*
Competences	Upon the completion of the course, the student is able to: **LO1**: *Understand and know the various concepts of project management.* **LO2:** *Deploy successfully the cybernetic approach in project management.* **LO3:** *Consciously use own intuition in decision making.* **LO4:** *Apply the cybernetic approach and intuition in various project occurrences.* **LO5:** *Critically evaluate the project courses and choose the appropriate methods to their handling* **LO6:** *Elaborate personal attitude towards project management and further research issues.*

3. TEACHING METHODS

Multimedia lectures and exercises. Students own elaboration of analysis and conclusions. Reflection and analysis of own experiences.

4. ASSESSMENT TOOLS

FORMATIVE	TESTING
F1. *Student feedback during the course*	**P1**. *Workshop and exercise performance*
F2. *Students action learning*	**P2.** *Action learning results*
F3. *Students self-assessment*	**P3.** *Action learning results presentation*
CREDITS	
Evaluation in Bloom's Taxonomy K1–K5 in notes	*2.0-5.0*
Examination passing criterion	*min. 3.0*

5. CONTENT AND PROGRAMME

No.	Topics	Description of the contents	Form	Number of hours
1.	Introduction, processes	*Goal and Aims of this subject; Process as basic element of project management, definition of a process, application processes, project management processes, Action learning team building*	L, W	2 4
2.	Complexity in projects, linear and non-linear systems	*Definition of a complexity, Gell-Mann model, static and dynamic complexity, linearity, linear and non-linear systems*	L, W	2 2
3.	Theory of Cybernetics,	*Wiener and von Foerster cybernetics, human decision process, cybernetics in project management*	L, W	2 2
4.	Project Management Methods	*ISO 21500:2012, PMI (PMBOK), IPMA, CMMI, ITIL,PRINCE2, HERMES standards and methods, strengths and weaknesses*	L, W	1, 2
5.	Knowledge areas in project management	*IQ, EQ and SQ intelligence, impact of uncertainties, risk handling, intuition*	L, W	1, 2
6.	Positive and negative feedback loops	*Cybernetic model of positive and negative feedback loops, Kinicki model, L-Timer project management system, positive and negative feedback orientation in project management processes*	L, W	2 4
7.	Action learning results, students' questions and feedback	*Presentation of teams results, evaluation of the assessments and conclusions, open issues, students' questions and feedback.*	W	4

6. READINGS

Basic readings	• Lent B., *Cybernetic Approach to Project Management,* Springer: Berlin, New York, 2013. • Lent B., Leader, Manager, Expert. The Project Management System, AON: Warszawa, 2011. • ISO., ISO 21500:2012, Guidance on Project Management, ISO: Geneva, 2012.
Selected recommended readings	• Wiener N.,. Cybernetics or Control and Communication in the Animal and in the Machine, MIT Press: Cambridge, 1948/1961 • Wysocki R., Executive Guide to the Project Management: Organizational Processes and Practices for Supporting Complex Projects. Wiley: Hoboken, 2011 • Waldrop MM., Complexity, the Emerging Sciene at the edge of Order and Chaos, Schuster Paperbacks, New York, 1992 • Von Foerster H Understanding Understanding, Esseys on Cybernetics and Cognition. Springer: New York, 2002 • PMI, A Guide to the Project Management Body of Knowledge: PMBOK

	guide, 5th Edition, PMI: Newton Square, 2013 •