Co-funded by the Erasmus+ Programme of the European Union

ERASMUS+ MODELLING CYBPHYS

609557

Kryvyi Rih National University

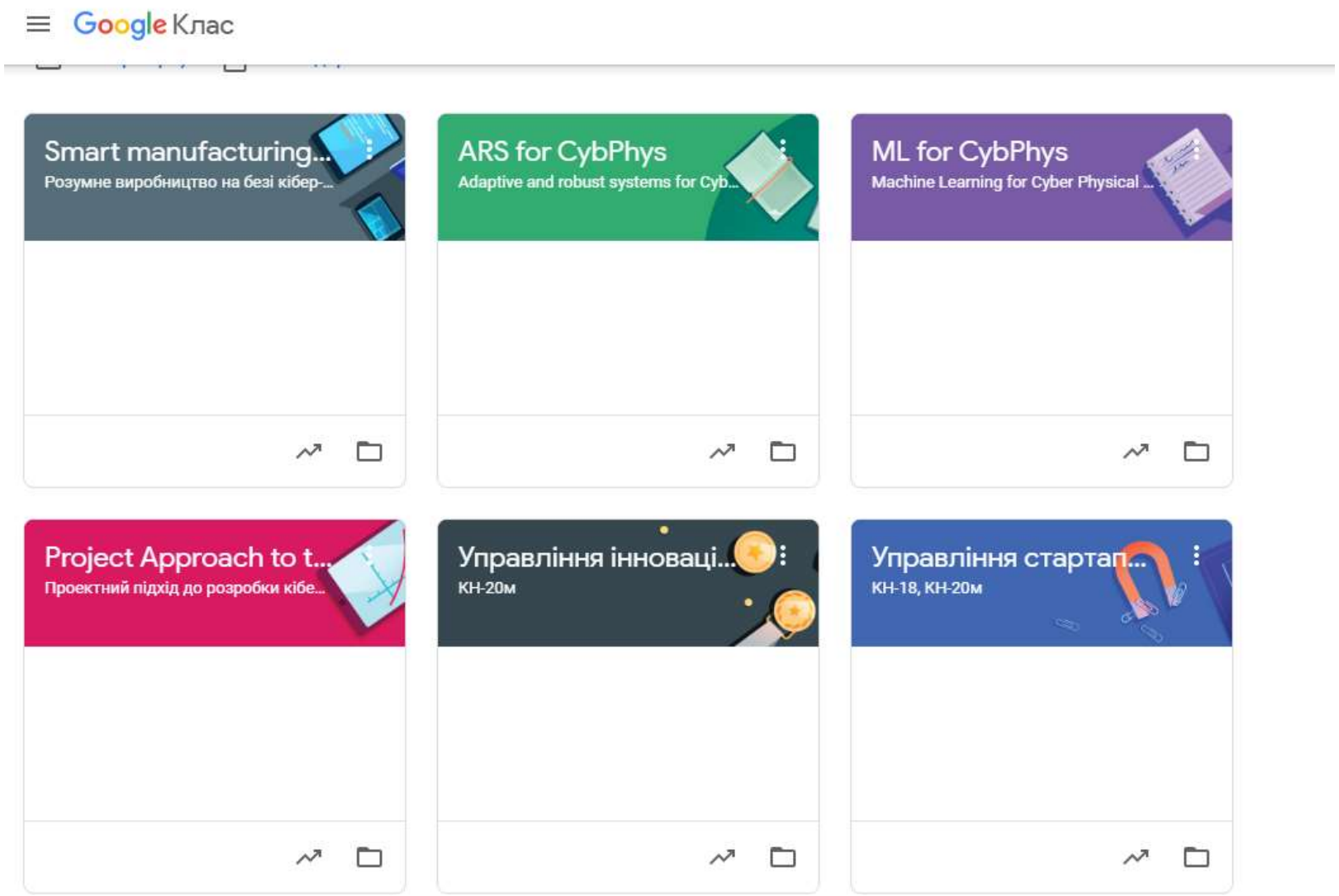
Courses development progress

Curriculum development aspects

Kriviy Rih National University declared development and implementation of 7 courses (3 new/4 updated). These courses will be included in 2 curricula – 151-Cyber-physical systems (Master Program) and 275 – Transportation technologies (Bachelor Program)

№	COURSES	THE NAMES OF RESPONSIBLE
	New courses	
1.	Smart manufacturing based on cyber-physical systems	**Sergii Ruban** PhD, Associate prof. of the Automation, Computer Science and Technology Department
2.	Machine Learning for Cyber Physical Systems and Industry 4.0	**Vitaliy Tron** PhD, Associate prof. of the Automation, Computer Science and Technology Department
3.	Transportation Cyber-Physical Systems	**Volodymyr Sistuk** PhD, Dean of Transport Faculty, Associate prof. of the Dep. of Automobile Transport
	Updated courses	
1.	Open Pit Intelligent Transportation System	**Mykola Stupnik** Rector of KNU, Professor, Doctor of Engineering Science **Yurii Monastyrskyi** Professor, Doctor of Engineering Science, Head of the Department of Automobile Transport
2.	Modern Information Technologies in Transport	**Volodymyr Sistuk** PhD, Dean of Transport Faculty, Associate prof. of the Dep. of Automobile Transport
3.	Adaptive and Robust Systems	**Natalia Morkun** Professor, Doctor of Sciences (Engineering), Head of the Automation, Computer Science and Technology Department
4.	Project Approach to the Designing of Cyber-Physical Systems	**Iryna Zavsiehdashnia** PhD, Associate prof. of the Automation, Computer Science and Technology Department

In KNU we use Google Classroom platform for studying processes



ML for CybPhys
Machine Learning for Cyber Physical Systems and Industry 4.0

Потік | Завдання | Люди | Оцінки

+ Створити | Meet | Google Календар | Папка курсу на Диску

Усі теми

1 - CybPhys system...
2 - ML algorithms fo...
3 - Data preprocessi...
4 - Model evaluation...
5 - Combining mode...
6 - Regression analy...
7 - Clustering analys...
8 - Computer vision ...

Машинне навчання та наука про дані у пр... Чернетка
Зразок оформлення лабораторної роботи Чернетка
Наукові статті Чернетка

1 - CybPhys systems ability to learn from data

Первинний аналіз даних Чернетка
Візуальний аналіз даних Чернетка

2 - ML algorithms for classification

Робота - Дерево рішень Чернетка
Лінійні моделі класифікації та регресії Чернетка
Класифікація, дерева рішень Чернетка
Випадковий ліс Чернетка

3 - Data preprocessing and compressing

Побудова і відбір ознак Чернетка

4 - Model evaluation and hyperparameter tuni...

ARS for CybPhys
Adaptive and robust systems for CybPhys

Потік | Завдання | Люди | Оцінки

Усі теми

- Organizational mate...
- TOPIC 1. Identificati...
- Topic 2. The peculia...
- Topic 3. Adaptive co...
- Topic 4. Adaptive co...
- Topic 5. Algorithms ...
- Topic 6. Synthesis o...
- laboratory works
- Science School of K...
- Additional literature

Organizational materials

- Перелік літератури — Чернетка

TOPIC 1. Identification of dynamic objects

- ТЕМА 1. ІДЕНТИФІКАЦІЯ ДИНАМІЧНИХ ОБ... — Чернетка
- Adaptive control of drilling by identifying p... — Чернетка

Topic 2. The peculiarity of the adaptive approa...

- Тема 2.1. Постановка завдання синтезу ад... — Чернетка
- Тема 2.2. Огляд методів синтезу адаптивн... — Чернетка
- Adaptive control of ore mill charge — Чернетка
- Адаптивна система керування дробильно... — Чернетка

Topic 3. Adaptive control of dynamic objects ...

- Тема 3_1 Адаптивне керування динамічни... — Чернетка
- Тема 3.2. Складність керування об'єктами... — Чернетка
- Тема 3.3. Приклади синтезу пристроїв кер... — Чернетка

Topic 4. Adaptive control of distributed stocha...

Project Approach to the Designing of Cyber-Physical Systems
Проектний підхід до розробки кібер-фізичних систем

Потік | Завдання | Люди | Оцінки

Усі теми

Lectures

Supplimentary litera...

Practical lessons

Course workshop (project) Чернетка

Syllabus (project) Чернетка

Subjects templates for Cyber-Physical desi... Чернетка

Lectures

Lecture 8. Risk management of the project ... Чернетка

Lecture 7. HR management of the cyb-phys ... Чернетка

Lecture 6. Fundamentals of cyber-physical ... Чернетка

Lecture 5. Estimation of investment attracti... Чернетка

Lecture 4. Defining the concept of the proje... Чернетка

Lecture 3. The concept of project life cycle Чернетка

Lecture 2. Implementation of cyber-physica... Чернетка

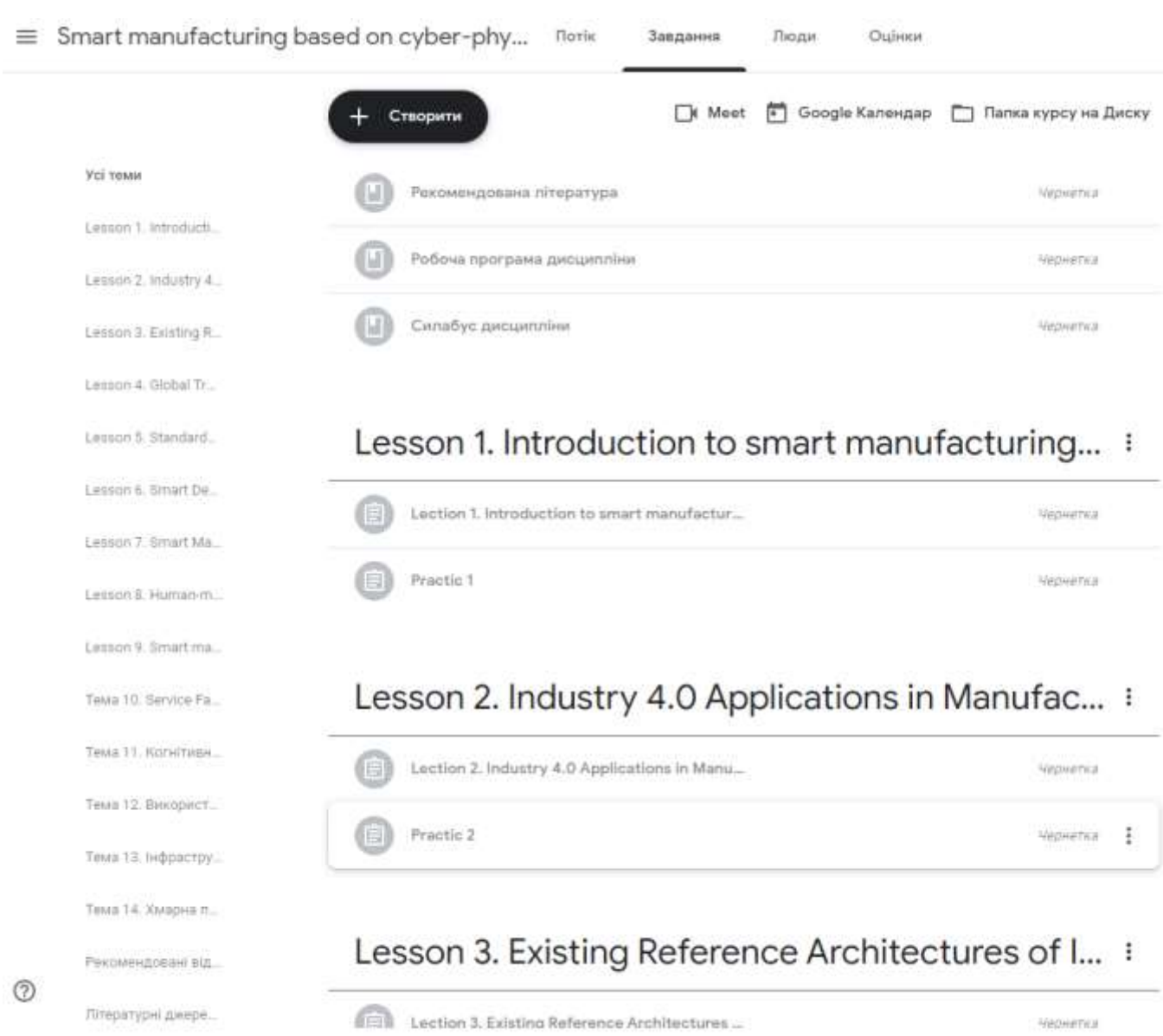
Lecture 1. The concept of the project. The e... Чернетка

Supplimentary literature

Стандарти Чернетка

PMBOK_5 Чернетка

Practical lessons


Smart manufacturing based on cyber-phy...
Потік
Завдання
Люди
Оцінки
Створити
Meet
Google Календар
Папка курсу на Диску
Усі теми
Lesson 1. Introducti...
Lesson 2. Industry 4...
Lesson 3. Existing R...
Lesson 4. Global Tr...
Lesson 5. Standard...
Lesson 6. Smart De...
Lesson 7. Smart Ma...
Lesson 8. Human-m...
Lesson 9. Smart ma...
Тема 10. Service Fa...
Тема 11. Когнітивн...
Тема 12. Використ...
Тема 13. Інфрастру...
Тема 14. Хмарна п...
Рекомендовані від...
Літературні джере...
Рекомендована література
Робоча програма дисципліни
Силабус дисципліни
Чернетка
Lesson 1. Introduction to smart manufacturing...
Lection 1. Introduction to smart manufactur...
Practic 1
Lesson 2. Industry 4.0 Applications in Manufac...
Lection 2. Industry 4.0 Applications in Manu...
Practic 2
Lesson 3. Existing Reference Architectures of I...
Lection 3. Existing Reference Architectures ...

Deep Traffic Videoanalysis based on AI

- Case study of the roundabout in the city of ...
- Traffic analysis menu in DFS
- Annotation configuration detailed descripti...
- The first view of Datafromsky
- Traffic Analysis in Datafromsky Viewer
- Manage Annotation Configurations
- **Basics of Datafromsky approach for advanc.**

SSAM approach with VISSIM car-following mo...

- Surrogate safety measures analysis with dri... Чернетка
- Accident analysis using SSAM approach wit... Чернетка
- VISSIM car-following model adjustment Чернетка

There is a brief description of Wiedemann 74/99 car-following model adjustment which is used as a basic algorithm of driver behaviour simualtion in VISSIM software. It will help you to perform the next exercise

vissimprotocol-50-58.pdf
PDF

Description of the course

The course was updated corresponding to Erasmus + KA2 "CybPhys" project .

CIKT.pdf
PDF

Co-funded by the
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KRIVYI RIH NATIONAL UNIVERSITY –

WE ARE READY FOR ERASMUS + MODELLING CYBPHYS 609557 CHALLENGES!