*Recommended template: “Course Description, Syllabus, Course Requirements”*

# course syllabus and course requirements academic year 2025/2026 semester First

|  |  |
| --- | --- |
| Course title | IT Systems |
| **Course Code** | **IVB024AN** |
| **Hours/Week: le/pr/lab** | **2/0/0** |
| **Credits** | **4** |
| **Degree Programme** | **Computer Science Engineering BSC** |
| **Study Mode** | **Full time** |
| **Requirements** | **final exam** |
| **Teaching Period** | **Fall** |
| **Prerequisites** | **IVB026AN** |
| **Department(s)**  **Course Director** | **Department of Cybersecurity and Networks**  **Dr. Zsolt Ercsey** |
| **Teaching Staff** | **Dr. Zsolt Ercsey** |
|  |  |

# course description

*A short description of the course (max. 10 sentences).*

*Neptun: Instruction/Subjects/Subject Details/Basic data/Subject description*

During the course students gain knowledge about various information systems.

They become familiar with fundamental corporate information systems, their characteristics, the problems of integration, and some of the available tools.

In addition to the lectures, they will gain knowledge about real-life IT requirements through numerous case studies, which will be presented to the students by IT experts from leading companies who will present their specialized areas

# syllabus

*Neptun: Instruction/Subjects/Subject Details/Syllabus*

## **goals and objectives**

*Goals, student learning outcome.*

*Neptun: Instruction/Subjects/Subject Details/Syllabus/Goal of Instruction*

After the course, students will

* know the main areas of IT systems,
* have a glance into the current trends,
* know basic rules behind the various business models,
* understand some technical issues.

In this course, the students will get familiar with the most fundamental knowledge for understanding enterprise resource planning systems and internet technology related issues.

The Course includes:

* Regular (every week) lectures.
* Continuously communication and discussion between the Lecturer and the Students. Common evaluation.
* Multiple homework by the Students based on the instructions of the Lecturer.
* 1 test.
* Exam in two stages (after the Schedule of the Course).

Methods:

* Lectures about the fields of artificial intelligence.
* Discussion of event cases, situations.
* A short oral presentation by the Students at a fixed time during the semester.
* Tests by the Students at a fixed time during the semester.

The course is based on continuous discussions; examine of case studies, actual topics, conventional and non-conventional situations. The students' verbal feedback is required.

Methods:

* Lectures about the fields of IT systems.
* Invited speakers from IT companies with special interests and specific topics.
* Discussion of event cases, situations.
* Homework research and evaluation of specific topics by the students.
* A short oral presentation by the Students at a fixed time during the semester.
* Tests by the Students at a fixed time during the semester.

## **course content**

*Neptun: Instruction/Subjects/Subject Details/Syllabus/Subject content*

|  |  |
| --- | --- |
|  | TOPICS |
| LECTURE |  |
| PRACTICE | 1. *Introduction.* 2. *General concept and definitions of internet technology.* 3. *IoT concept.* 4. *Evolution of the web. Business model canvas.* 5. *Business model of android.* 6. *Business model of ios.* 7. *Freemium.* 8. *From B2B to M2M.* 9. *Industry 4.0.* 10. *Cloud.* 11. *Data storage in the cloud.* 12. *ERP systems.* |
| laboratory practice | 1. *topic* 2. *etc.* |

### **DETAILED SYLLABUS AND COURSE SCHEDULE**

### *academic holidays included*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| LECTURE / LABORATORY PRACTICE | | | | |
| week | **Topic** | **Compulsory reading; page number**  **(from … to …)** | **Required tasks (assignments, tests, etc.)** | **Completion date, due date** |
| 1. | Course introduction, orientation. | … | … | … |
| 2. | Introduction. General concept and definitions of internet technology. IoT concept. Evolution of the web. |  |  |  |
| 3. | Business model canvas. Business model of android. |  |  |  |
| 4. | Business model of ios. Freemium. From B2B to M2M. Industry 4.0. Cloud. Data storage in the cloud. |  |  |  |
| 5. | Corporate knowledge fundamentals Business processes. ERP selection and implementation. |  |  |  |
| 6. | Invited speaker |  |  |  |
| 7. | Invited speaker |  | homework 1 | Friday 24:00 |
| 8. | PhD Symposium |  |  |  |
| 9. | Invited speaker |  | homework 2 | Friday 24:00 |
| 10. | Presentations by students. |  |  |  |
| 11. | Presentations by students. |  |  |  |
| 12. | Presentations by students. |  |  |  |
| 13. | Test. |  |  |  |

Mondays, 9:30-11:00 A117

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 |
| 2025.09.08. | 2025.09.15. | 2025.09.22. | 2025.09.29. | 2025.10.06. | 2025.10.13. | 2025.10.20. |
| Week 8 | Week 9 | Week 10 | Week 11 | Week 12 | Week 13 | Week 14 |
| PhD Symp. | 2025.11.03. | 2025.11.10. | 2025.11.17. | 2025.11.24. | 2025.12.01. | 2025.12.08. |

## **assessment and evaluation**

*(Neptun: Instruction/Subjects/Subject Details/Syllabus/Examination and Evaluation System)*

##### **Attendance**

*In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description.*

According to the university code.

***Method for monitoring attendance*** *(e.g.: attendance sheet / online test/ register, etc.)*

An attendance sheet is used. Attending is required according to the university's attendance code. Attending is required to all classes where invited speaker from a leading company is presenting. In case of unexcused absences from more than 30% of the total number of lesson will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence. In the case of an illness or family emergency, the student must present a valid excuse, such as a doctor's note.

##### **assessment**

*Cells of the appropriate type of requirement is to be filled out (course-units resulting in mid-term grade or examination). Cells of the other type can be deleted.*

Course-unit with final examination

**Mid-term assessments, performance evaluation and their weighting as a pre-requisite for taking the final exam**

(The samples in the table to be deleted.)

|  |  |  |
| --- | --- | --- |
| Type | Assessment | Weighting as a proportion of the pre-requisite for taking the exam |
| 1. *Homework 1* | *acceptable / not acceptable* |  |
| 1. *Homework 2* | *acceptable / not acceptable* |  |
| 1. *Test* | *acceptable above 40%* |  |

**Requirements for the end-of-semester signature**

(Eg.: mid-term assessment of 40%)

Homework by the students.

Each student receives multiple topics. The themes should be worked on at home, independently and documents summarising the findings have to be handed in due time.

Each student is assigned to a company from Fortune 500 list (available in neptun/teams). The student should write a document with the following content. i) An introduction about the company, 1(-3) pages, should be written. ii) A department / product / service of the company should be selected and its introduction should be written, 1(-3) pages. iii) The business model canvas of point 2, 1(-3) pages, should be given by the student. Total task: 3(-9) pages.

Each student must present a GPT model and related service. As part of the assignment, the documents submitted by other students must be analyzed, and any potential machine-human content creation must also be covered. For this, the prompting process must also be presented.

Further, the homework of the students may be presented in front of everybody at a specific date. Presentations should be 10 minutes long (min. 10 slides).

Criteria of evaluation:

* The scale of the presentation
* Clear verbal and visual communication
* Observance of the available time interval
* After the presentations, common evaluation!
* Which presentation was the highest quality and why?
* How was the project represented?
* How the presented projects could be taken further?

In case the presentation is missed or it is not successfully performed, it is neglected. Presentations can only be complemented during the Study Period.

Tests by the students. All tests are in writing. Tests are evaluated by points. Tests covers all or some of the main topics of the Course. In case the performance is below 40%, the test is said to be failed. In case the test is missed it is calculated as 0 points. No external aids are allowed to be used. Should the average of the tests be below 40%, the Student cannot enter the Exam Period, ie it is grounds for failing the course.

**Re-takes for the end-of-semester signature** (PTE TVSz 50§(2))

*The specific regulations for grade betterment and re-take must be read and applied according to the general Code of Studies and Examinations. E.g.: all the tests and the records to be submitted can be repeated/improved each at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.*

According to the general Code of Studies and Examinations. All the tests and the records to be submitted can be repeated/improved each at the end of the semester, and home assignments, i.e. the presentation can be repeated/improved in the first week of the examination period latest.

***Type of examination*** *(written, oral): written and oral*

Pre-exam of the Students can be done during the Study Period in case the Student has met the requirements of the attendance and successfully performed the presentation. Pre-exams are equal to Exams taken in the Exam Period.

Exams of the Students can be done during the Exam Period. The exam will test the Students' knowledge and problem-solving skills on all preceding lectures of the Course as well as the Presentations held by other Students'. The exam has a written part, it is approximately 60 mins. It covers all or some of the main topics of the Course. In case the performance is below 40%, the exam is said to be failed. In case the achievement is above 40%, then the oral part of the exam is entered automatically.

No external aids are allowed to be used.

***The exam is successful if the result is minimum 40 %.*** *(The minimum cannot exceed 40%.)*

**Calculation of the grade** (TVSz 47§ (3))

The mid-term performance accounts for  ***0***  %, the performance at the exam accounts for  ***100***  % in the calculation of the final grade.

**Calculation of the final grade based on aggregate performance in percentage.**

|  |  |
| --- | --- |
| **Course grade** | **Performance in %** |
| excellent (5) | 85 % … |
| good (4) | 70 % ... 85 % |
| satisfactory (3) | 55 % ... 70 % |
| pass (2) | 40 % ... 55 % |
| fail (1) | below 40 % |

The lower limit given at each grade belongs to that grade.

## **Specified literature**

*In order of relevance. (In Neptun ES: Instruction/Subject/Subject details/Syllabus/Literature)*

##### **compulsory reading and availability**

[1] Subject materials on Teams.

[2] Alexander Osterwalder, Yves Pigneur. Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. ISBN-13: 978-0470876411. (In Hungarian: ISBN9789632782201)

[3] Andrew Reichman. File Storage Costs Less In The Cloud Than In-House. August 2011. Forrester.

[4] Dave Evans. The Internet of Things. White paper. Cisco Internet Business Solutions Group (IBSG). April 2011.

[5] NIST. SP800-144. NIST. SP800-145. NIST. SP500-292.

[6.] Business Process Model and Notation (BPMN), 2011. OMG Document Number: formal/2011-01-03. Standard document URL: http://www.omg.org/spec/BPMN/2.0

##### **recommended literature and availability**

[7.] Bizagi Modeler. User guide. Bizagi, 2018. http://download.bizagi.com/docs/modeler/3300/en/Modeler\_user\_Guide.pdf

[8] B. Furht, A. Escalante (eds.), Handbook of Cloud Computing. ISBN 978-1-4419-6523-3 Springer Science+Business Media, LLC 2010.

[9] Securing the Cloud for the Enterprise. A Joint White Paper from Symantec and VMware. May 2011.

[10] Albert-László Barabási: Network Science. Cambridge University Press 2016. ISBN-13: 978-1107076266. (In Hungarian: Libri, 2016., ISBN 978-963-310-787-4.)

[11.] A. Drogin. Microsoft Dynamics NAV Development Quick Start Guide: Get up and running with Microsoft Dynamics NAV, December 27, 2018. ISBN-13: 978-1789612769

[12.] R. Lestina. Navision & dynamics nav user guide: volume 2: general guide for all users. ISBN-13: 978-0615944913