General Information:

Name of Course:	# INTERNET TECHNOLOGY
Course Code:	IVB167AN
Semester:	Six
Number of Credits:	3
Allotment of Hours per Week:	2 Lectures /Week
Evaluation:	Exam
Prerequisites:	**Computer networks**

Instructors: **Dr Zsolt ERCSEY, Assistant Professor**
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Introduction, Learning Outcomes:

During this course students will get know the characteristics of internet technologies and gain insight to some basic applications. The history of internet together with recent trends will be reviewed. Business model of the android and ios will be compared and freemium model will be discussed in details. The concept of IOT, industry 4.0 as well as models from B2B to M2M will be introduced. With the help of industrial examples general characteristics and basic hardware equipment of the internet industry will be examined. Basic network science issues will be discussed. Smart glasses and some technical details, for example scalability will be considered as separate topics. Roles, process user story, task lists and their practical usage together with some collaborative techniques offered in virtual space will be discussed to support application developments. Agile development, scrum and waterfall models will be compared.

After the course, students will
- know the main areas of internet technology,
- have a glance into the current trends,
- know basic rules behind the various business models,
- understand some technical issues.

General Course Description and Main Content:

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

The Course includes:
- Regular (every two weeks) 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).

Methodology:

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 internet technology.

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- 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.

Schedule:
The rough outline of the schedule is as follows:

Week 1.   Introduction. General concept and definitions of internet technology. IoT concept. Evolution of the web. Business model canvas. Business model of android.

Week 3.   Business model of ios. Freemium. From B2B to M2M. Industry 4.0. Cloud. Data storage in the cloud.

Week 5.   Invited speaker from an IT company.

Week 7.   Invited speaker from an IT company.

Week 9.   Intermission

Week 11. Invited speaker from an IT company.

Week 13. Invited speaker from an IT company. Test.

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 is assigned to a topic related to cloud infrastructure and/ or services (available in neptun/teams). The student should write a 3-10 pages long document about the topic. Among the topics there are for example, IBM cloud solutions, Amazon web services, Google cloud.

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:
        1. The scale of the presentation
        2. Clear verbal and visual communication
        3. Observance of the available time interval
    After the presentations, common evaluation!
    1. Which presentation was the highest quality and why?
    2. How was the project represented?
    3. 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.

Attendance:

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Attending is required according to the university's attendance code. Attending is required to all classes where invited speaker from an IT 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.

Signature condition:
1) Invited speaker's lecture should not be missed. 2) Homework should be prepared in due time and with acceptable content. 3) The test has to be above 40%.
Those not satisfying any of the above 3 conditions will not receive a signature.

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

Exams of the Students can be done during the Exam Period. The exam has two main parts that 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 first written part is approximately 30 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.

Exam Evaluation + Grading
Grading will follow the course structure with the following weight:
- Exam: 100%
- Please note that attendance will also be assessed according to participation, progress, effort and attitude, during the oral part of the exam, however it will only affect positively one's grade and will not adversely affect one's grade.

The final grade will be based on the following guidelines:

5. Outstanding work. Execution of work is thoroughly complete and demonstrates a superior level of achievement overall with a clear attention to detail. The student is able to synthesize the course material with new concepts and ideas in a thoughtful manner, and is able to communicate and articulate those ideas in an exemplary fashion.

4. High quality work. Student work demonstrates a high level of craft, consistency, and thoroughness throughout the work. The student demonstrates a level of thoughtfulness in addressing concepts and ideas, and participates in group discussions. Work may demonstrate excellence but less consistently than an '5' student.

3 Satisfactory work. Student work addresses all of the project and assignment objectives with few minor or major problems. Works performed are complete and satisfactory, exhibiting minor problems in detail.

2. Less than satisfactory work. The work is substandard, incomplete in significant ways, and lacks craft and attention to detail.

1. Unsatisfactory work. Work exhibits several major and minor problems with basic conceptual premise, lacking both intention and resolution; and is weak in clarity, craft and completeness.

Grading Scale:

Numeric Grade:	5	4	3	2	1
Evaluation in points:	90%-100%	80%-89%	70%-79%	41%-69%	0-40%

Students with Special Needs:

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Students with a disability and needs to request special accommodations, please, notify the Deans Office. Proper documentation of disability will be required. All attempts to provide an equal learning environment for all will be made.

Readings and Reference Materials:

Subject materials on Neptun Meet Street.

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

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

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

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

NIST. SP800-145.

NIST. SP800-144.

NIST. SP500-292.

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

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

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