

## Rendszerező, azonosító információk

<b>A fejlesztés címe</b>	Business Data Analysis
<b>Azonosító</b>	T7A.1.
<b>A fejlesztésben résztvevők</b>	Racskó Péter
<b>A fejlesztés eredményének elérhetősége</b>	BCE, Tanárképző és Digitális Tanulás Központ honlap, Kutatás lap alatt
<b>Kapcsolattartó a további információkhoz</b>	Dr. Daruka Magdolna <a href="mailto:magdolna.daruka@uni-corvinus.hu">magdolna.daruka@uni-corvinus.hu</a>

### A fejlesztés rövid bemutatása

# Business Data Analysis tárgy megújítása

A fejlesztés az EFOP-3.4.3-16-2016-00006 azonosító számú, „A Budapesti Corvinus Egyetem intézményi fejlesztései a felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása érdekében” című projekt támogatásával valósult meg.

Az angol nyelvű bachelor képzések első évében kötelező tantárgy 12 előadást és 12 gyakorlatot tartalmaz. Az egész kurzus intenzív blended learning támogatással, Moodle keretrendszerben működik.

A mostnai fejlesztés során a gyakorlatok mellé az elméleti tananyagot is átszerveztük blended learning rendszerűvé. Ennek keretében készült el 16 db oktató videó Racskó Péter előadásában. Ezek a videók egyenként 15-20 percesek. A hallgatók Minden második héten hagyományos keretek között vesznek részt az élő előadásokon, a köztes heteken pedig előre beosztott sorrendben és kiosztásban a videókat kell feldolgozniuk. A videók és az élő előadások fóliái a Moodleben érhetőek el.

Az élő előadásokon az önállóan feldolgozott videóanyagokból egy Kahoot teszt keretében adnak számot a hallgatók. Ez lehetőséget teremt arra is, hogy a félreértéseket az előadáson tisztázzák, illetve hogy átismételjék a videón elhangzott tananyag lényeges pontjait. A Kahoot tesztet hibátlanul kitöltők plusz pontokat szerezhetnek, amelyek a vizsga minimumkövetelményeinek teljesülése után az összpontszámot növelik.

Az előadások időbeosztása:

1st week: Data sources

- SME
- Enterprise

- Financial institution
- Government
- Sports
- Science
- Social networks

2nd week: VIDEO  
Introduction

- V1/a: Data source timing (Part I.)
- V1/b: Data source timing (Part II.)

3rd week: Gathering and storing  
data

- I/O devices
- Storage (local and cloud)

4th week: VIDEO Enterprise information  
systems

- V2: Integrated Information Systems
- V3: Enterprise Information Systems
- V4: Information Systems

5th week: Basic applications –  
digitalization

- Enterprise Information Systems
- Integrated information Systems
- ERP
  - HR
    - CRM
    - Finance
  - MM
- Communication (Internet, email, VOIP, IM, Social Networks, Intranet, VPN, Extranet)

6th week: VIDEO CRM, HR,  
MM, FI

- V5: CRM
- V6: HR

- V7: Material Management
- V8: Financial Management

#### 7th week: Operational models

- On premises
- Outsourcing
- X as a service – cloud computing
- Comparison of operational models

#### 8th week: VIDEO Operational models and Business Data Analysis

- V9: Operational models
- V10: Decision Support Systems
- V11: Big Data
- V12: Business Data Analysis
- V13: Future Trends in IT

#### 9th week: Data Security and Privacy

- Vulnerabilities of the information systems
- Privacy concept and compliance

#### 10th week: VIDEO Data Security and Privacy

- V14: Information Security
- V15: Privacy

#### 11th week: Business Data Analysis

- Decision Support Systems
- Big Data
  - Structured databases ○
  - Not fully structured data ○
  - Handling unstructured data ○

## Visualization of the results

- IoT

12th week: Final exam

<http://moodle.uni-corvinus.hu/course/view.php?id=145829>

BUDAPESTI  
**CORVINUS**  
EGYETEM



Tanárképző és  
Digitális Tanulás  
Központ

Home Semesters My courses This course

My courses 2EB34NAK03B\_Elmélet:E (2019/20/1)

## Business Data Analysis

Your

### Topical

[Announcement](#)

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[Rules of class attendance](#)

[Syllabus - Fall 2019](#) 129.2KB PDF document

[Class Schedule - Fall 2019](#) 81.5KB PDF document

[Timetable - Fall 2019](#)

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# Lectures

A fejlesztés az EFOP-3.4.3-16-2016-00006 azonosító számú, „A Budapesti Corvinus Egyetem intézményi fejlesztései a felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása érdekében” című projekt támogatásával valósult meg.



## Lectures

### Lecture - resources

- Kahoot for 2nd week videos
- Kahoot for 4th week videos
- Kahoot for 6th week videos
- Kahoot for 8th week videos
- Kahoot for 10th week videos

### Theoretical sample quiz

### Theoretical assessment

 [KahootBusiness Data Analysis week 06](#) 75.1KB Excel 2007 spreadsheet













 [KahootBusiness Data Analysis week 04](#) 77.8KB Excel 2007 spreadsheet

 [KahootBusiness Data Analysis week 08](#) 159.3KB Excel 2007 spreadsheet

 [KahootBusiness Data Analysis week 10](#) 133.5KB Excel 2007 spreadsheet


## 9 September -15 September

### Excel-1 (*Fundamentals of managing data*)




-  for teachers 01
-  class01 - for teachers 2.1MB Powerpoint 2007 presentation
-  class01
-  Excel01\_account
-  Excel01\_homework
-  Classwork - 01 Monday 9:50 - 11:20
-  Classwork - 01 Monday 11:40 - 13:10
-  Classwork - 01 Monday 13:40 - 15:10
-  Classwork - 01 Tuesday 8:00 - 9:30
-  Classwork - 01 Tuesday 11:40 - 13:10
-  Classwork - 01 Tuesday 13:40 - 15:10
-  Classwork - 01 Tuesday 15:30 - 17:00


### *Solutions*

### *Solutions*

-  Excel01\_account(solved)













### *Other resources*

-  Excel is Fun (MS Excel 2010) - Textbook
  -  Excel Basics (video to watch)
  -  wifi, vpn, etc.
- 



-  Practical sample test


## 16 September - 22 September

### **Excel-2** (*Charts, Text, Date and time functions*)

-  for teachers 02
-  class02 - for teachers
-  class02 487.4KB PDF document
-  Excel02\_charts\_functions
-  Excel02\_charts\_functions\_withStackedColumn
-  Excel02\_homework
-  Classwork - 02 Monday 9:50 - 11:20
-  Classwork - 02 Monday 11:40 - 13:10
-  Classwork - 02 Monday 13:40 - 15:10
-  Classwork - 02 Tuesday 8:00 - 9:30
-  Classwork - 02 Tuesday 13:40 - 15:10
-  Classwork - 02 Tuesday 15:30 - 17:00


### *Solutions*

-  Cheat sheet - Computer Class Notes - 2 693.9KB PDF document
  -  Excel02\_charts\_functions(solved)
- 


-  Quick test - 01

## 23 September - 29 September


### **Excel-3** (*Conditional formulas*)

 For teachers - 03

 class03 - for teachers


 class03

 Excel03 functions


 Excel03 homework


 Classwork - 03 Monday 9:50 - 11:20

 Classwork - 03 Monday 11:40 - 13:10

 Classwork - 03 Monday 13:40 - 15:10

 Classwork - 03 Tuesday 8:00 - 9:30

 Classwork - 03 Tuesday 13:40 - 15:10

 Classwork - 03 Tuesday 15:30 - 17:00


### *Solutions*

 Excel03 functions (solved)



## 30 September - 6 October

### Excel-4 (Look up data by using functions)

 for teachers - 04

 class04 - for teachers

 class04

 Excel04\_lookup

 Excel04\_homework

 Classwork - 04 Monday 9:50 - 11:20

 Classwork - 04 Monday 11:40 - 13:10

 Classwork - 04 Monday 13:40 - 15:10

 Classwork - 04 Tuesday 8:00 - 9:30

 Classwork - 04 Tuesday 13:40 - 15:10

 Classwork - 04 Tuesday 15:30 - 17:00

### Solutions

 Excel04\_lookup(solved)

 Cheat sheet - Computer Class Notes - 4 778.5KB PDF document












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 Quick test - 03






## 7 October - 13 October

### Excel-5 (Manage your data)

-  for teachers - 05
-  class05 - for teachers
-  class05
-  Excel05 DataTable
-  Excel05 homework
-  Classwork - 05 Monday 9:50 - 11:20
-  Classwork - 05 Monday 11:40 - 13:10
-  Classwork - 05 Monday 13:40 - 15:10
-  Classwork - 05 Tuesday 8:00 - 9:30
-  Classwork - 05 Tuesday 13:40 - 15:10
-  Classwork - 05 Tuesday 15:30 - 17:00












### Solutions

-  Excel05 DataTable(solved)
-  Cheat sheet - Computer Class Notes - 5 633.8KB PDF document
-  Quick test - 04





## 14 October - 20 October

### Excel-6 (Analyze information, Create Pivot table)

-  For teachers - 06
-  class06 - for teachers
-  class06
-  Excel06\_pivottable
-  Excel06\_homework
-  Classwork - 06 Monday 9:50 - 11:20
-  Classwork - 06 Monday 11:40 - 13:10
-  Classwork - 06 Monday 13:40 - 15:10
-  Classwork - 06 Tuesday 8:00 - 9:30
-  Classwork - 06 Tuesday 13:40 - 15:10
-  Classwork - 06 Tuesday 15:30 - 17:00












### Solutions

-  Excel06\_pivottable (solved)
-  Cheat sheet - Computer Class Notes - 6 812.5KB PDF document

- 
-  Quick test - 05

## 21 October - 27 October

### Graphical presentation with PowerPoint










-  For teachers - 7
-  class7 - for teachers
-  class7
-  Africa
-  Fogg
-  Classwork - 7 Monday 9:50 - 11:20
-  Classwork - 7 Monday 11:40 - 13:10
-  Classwork - 7 Monday 13:40 - 15:10
-  Classwork - 7 Tuesday 8:00 - 9:30
-  Classwork - 7 Tuesday 13:40 - 15:10
-  Classwork - 7 Tuesday 15:30 - 17:00

### Solutions

-  Fogg (solved)
  -  Africa (solved)
- 

-  Quick test - 06

### Home assignment #1

-  Requirements - Home assignment #1
-  Monday 9.50-11.20 Betsabé Pérez Garrido
-  Monday 9.50-11.20 Dávid Burka
-  Monday 11.40-13.10 Betsabé Pérez Garrido
-  Monday 11.40-13.10 Szabina Fodor
-  Monday 11.40-13.10 Dávid Burka
-  Monday 13.40-15.10 Betsabé Pérez Garrido
-  Monday 13.40-15.10 Szabina Fodor
-  Monday 13.40-15.10 Dávid Burka

## 28 October - 3 November

### Autumn holiday

#### Sample Excel Assessment












-  Sample Excel assessment 450KB PDF document
-  Sample Excel assessment - Excel file 20.8KB Excel 2007 spreadsheet

## 4 November - 10 November

### Project week


## 11 November - 17 November

#### Excel-7 (Data visualization features in spreadsheets)

-  For teachers - 08
-  class08 - for teachers
-  class08
-  Excel07 visualization 1
-  Excel07 homework
-  Classwork - 08 Monday 9:50 - 11:20
-  Classwork - 08 Monday 11:40 - 13:10
-  Classwork - 08 Monday 13:40 - 15:10
-  Classwork - 08 Tuesday 8:00 - 9:30
-  Classwork - 08 Tuesday 13:40 - 15:10
-  Classwork - 08 Tuesday 15:30 - 17:00

#### Solutions


-  Excel07 visualization (solved)
-  Cheat sheet - Computer Class Notes - 8 984.9KB PDF document

 Quick test - 07


## 18 November - 24 November


### Written assessment - Excel

 A-2019

 B-2019

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 C-2019 194.8KB Excel 2007 spreadsheet

 D-2019 194.9KB Excel 2007 spreadsheet


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 E-2019

 F-2019


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 G-2019

 H-2019

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 Excel assessment Monday 9:50 - 11:20

 Excel assessment Monday 11:40 - 13:10

 Excel assessment Monday 13:40 - 15:10












 Excel assessment Tuesday 8:00 - 9:30

 Excel assessment Tuesday 13:40 - 15:10

 Excel assessment Tuesday 15:30 - 17:00

## 25 November - 1 December

### Excel-8 (Excel macros)

-  For teachers - 9
-  class9 - for teachers
-  class9
-  Excel8\_macro.xlsx
-  Excel8\_homework.xlsm 37.5KB Excel 2007 macro-enabled workbook
-  Classwork - 9 Monday 9:50 - 11:20
-  Classwork - 9 Monday 11:40 - 13:10
-  Classwork - 9 Monday 13:40 - 15:10
-  Classwork - 9 Tuesday 8:00 - 9:30
-  Classwork - 9 Tuesday 13:40 - 15:10
-  Classwork - 9 Tuesday 15:30 - 17:00

### Solutions

-  Excel8\_macro (solved)
- 


### Home assignment #2

-  Requirements - Home assignment #2
-  sample excel file 10.1KB Excel 2007 spreadsheet
-  Home Assignment #2 - Deadline: 7th of December, 2019

## 2 December - 8 December

### Excel-9 (Excel macros II)

 [class10](#)

 [class10- for teachers](#)

 [Excel9\\_Products](#)


 [Excel9\\_homework.xlsx](#) 62KB Excel 2007 spreadsheet

 [Classwork - 10 Monday 9:50 - 11:20](#)

 [Classwork -10 Monday 11:40 - 13:10](#)

 [Classwork - 10 Monday 13:40 - 15:10](#)

 [Classwork - 10 Tuesday 8:00 - 9:30](#)

 [Classwork -10 Tuesday 13:40 - 15:10](#)

 [Classwork - 10 Tuesday 15:30 - 17:00](#)

### Solutions

 [Excel9\\_Products \(solved\)](#)

 [Excel9\\_Products \(solved\) - Tuesday 8.00](#) 70.3KB Excel 2007 macro-enabled workbook

Commented VBA codes in the solution (Macros are named "Selections" and "Calculate")

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 [Quick test - 08](#)

## 9 December - 15 December

### Students' presentation

 [Sample Questions for the theoretical exam](#) 13.3KB Word 2007 document

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## Combined Exam

### The structure of the combined exam:

Students have multiple sections in the combined exam.


- first section: theoretical written assessment for 30 points (20 minutes)
- second section: quiz for 20 points (30 minutes)
- third section: excel written assessment for 50 points (90 minutes)

100 points can be earned and the overall grade will be given based on the scores of the three sections.

**Please note: the very last grade obtained that will count (even it is worse than the previous one).**

### Registration:

- in Moodle under "**Combined exam registration**" link until 12<sup>th</sup> of December (23:55).


 [Combined exam registration](#)

**The combined exam will be held on 17th of December (Tuesday) from 10:00 to 14:00 in computer room S220 (Salhouse) and S302 (Salhouse).**

## 16 December - 22 December

### Combined Exam


 [Room schedule for Combined Exam - 2019.12.17](#) 69.6KB PDF document

 [Combined exam - Theoretical quiz](#)


 [Combined exam - Practical quiz](#)


 [Combined exam- Excel group #1](#) 43.4KB Excel 2007 spreadsheet


 [Combined exam - Excel group #2](#) 43.5KB Excel 2007 spreadsheet


 [Combined exam - Practical part](#)

 [Combined exam- Excel assessment group #1 \(Word\)](#) 21.3KB Word 2007 document


 [Solution Combined exam- Excel assessment group #1](#) 72.3KB Excel 2007 spreadsheet

 [Combined exam- Excel assessment group #2 \(Word\)](#) 21.3KB Word 2007 document


 [Solution Combined exam- Excel assessment group #2](#) 78.4KB Excel 2007 spreadsheet

 [K...](#)


 [Combined exam - Excel group #2](#) 43.5KB Excel 2007 spreadsheet

 [Combined exam - Practical part](#)

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 [Combined exam- Excel assessment group #1 \(Word\)](#) 21.3KB Word 2007 document


 [Solution Combined exam- Excel assessment group #1](#) 72.3KB Excel 2007 spreadsheet


 [Combined exam- Excel assessment group #2 \(Word\)](#) 21.3KB Word 2007 document

 [Solution Combined exam- Excel assessment group #2](#) 78.4KB Excel 2007 spreadsheet

 [Kahoot Video01/1](#)

 [Kahoot Video01/2](#)

 [Kahoot Video02](#)

 [Kahoot Video03](#)

 [Kahoot Video04](#)

 [Kahoot Video05](#)

 [Kahoot Video06](#)

 [Kahoot Video07](#)

 [Kahoot Video08](#)

 [Kahoot Video09](#)

 [Kahoot Video10](#)

 [Kahoot Video11](#)

 [Kahoot Video12](#)

 [Kahoot Video13](#)

 [Kahoot Video14](#)

 [Kahoot Video15](#)

## Lectures

### 9 September - 15 September: Data sources

- SME
- Enterprise
- Financial institution
- Government
- Sports
- Science
- Social networks

*Resources*

[Lecture notes #1](#)

### 16 September - 22 September: VIDEO - Introduction

*Resources*

**A large enterprise :**  
 has at least 5000 employees and/or  
 has an annual turnover greater than  
 1.5 billion euros and/or  
 has a balance sheet total of more  
 than 2 billion euros.




**Data types**

Numbers	1234.5
Text	John Smith
Date and time	July 23, 2017
Logical value	True/False
Images	
Video	
Audio	



### 23 September - 29 September: Gathering and storing data

- I/O devices
- Storage (local and cloud)

*Resources*

[Lecture notes #2](#)

30 September - 6 October: VIDEO - Enterprise information systems Integrated Information Systems

**types of information systems**

Information system

Enterprise Collaboration Systems – enhance team and workgroup communications and productivity

Transaction Processing Systems

Process Control Systems

Enterprise Collaboration Systems

**information system model**

Components of an Information System

Software

Hardware

Data

Users

Networks

**Modules**

SAP ERP

### 7 October - 13 October: Basic applications – Digitalization

- Enterprise Information Systems
- Integrated Information Systems
- ERP
  - HR
  - CRM
  - Finance
  - MM
- • Communication (Internet, email, VOIP, IM, Social Networks, Intranet, VPN, Extranet)

Resources

[Lecture notes #3](#)

### 14 October - 20 October: VIDEO - CRM, HR, MM, FI

Resources

**The CRM module (SAP)**  
Customer Interactions in marketing:

The diagram shows a central blue circle labeled 'eMarketing' surrounded by eight purple ovals: Social media, Online advertising, Direct mail, Email, Mobile, CRM, Analytics, and Secure login. A play button icon is in the top left of the diagram area.

A man in a suit and glasses is speaking in a video frame on the right side of the slide.

**HUMAN RESOURCE MANAGEMENT MODULE**  
Human Resources (HR) department responsibilities:

- Recruiting, and hiring new employees
- Communicating information regarding new positions and hires
- Ensuring proper education, training, and certification for employees
- Handling issues related to employee conduct
- Making sure employees understand job responsibilities
- Using effective process to review employee performance and determine salary increases and bonuses
- Managing salary and benefits for each employee
- Communicating changes in salaries, benefits, or policies to employees
- Supporting management plans for changes in the organization

A man in a suit and glasses is speaking in a video frame on the right side of the slide.

A man in a suit and glasses is speaking in a video frame. The background shows a large lecture hall filled with students.

### FINANCIAL INFORMATION MODULE

#### ACCG 101 ANALYSIS AND RECONCILIATION

Opening Balance  
Totals of Transactions



### 21 October - 27 October: Operational models

- On premises
- Outsourcing
- X as a service – cloud computing
- Comparison of operational models

Resources

[Lecture notes #4](#)

### 11 November - 17 November: VIDEO - Operational models, Business Data Analysis

Resources

### Operational models

#### Benefits of outsourcing

Cost savings  
Increased efficiency  
Focus on core areas  
Save on infrastructure and technology  
Access to skilled resources  
Time zone advantage  
Faster and better services



### Decision Support Systems



### Big Data Velocity

Speed of data is of an unprecedented speed and must be dealt with in a timely manner. RFID tags, sensors and smart metering are driving the need to deal with torrents of data in near-real time.



### Business Data Analysis

Data mining processes  
Discover patterns in large datasets involving methods of statistics, artificial intelligence, machine learning, database systems



### Future Trends in Information and Communication Technology

The interconnection between the new devices are creating new types of smart applications and services



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## 18 November - 24 November: Data Security and Privacy

- Vulnerabilities of the information systems
- Privacy concept and compliance

### Resources

[Lecture notes #5](#)

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## Resources

**Information security**

**Security threats - examples**

- Malware** - virus code that runs against your will
- MacroViruses** - viruses eg. in Office files attached to emails
- Trojan horses** - hidden functions like spying, key logging, downloading other malicious programs
- Spam** - mass of unwanted mails
- Ransomware** - blocks your computer or encrypts your files until you pay ransom
- Phishing** - legitimate-looking mail for gathering personal and financial information



**Privacy**

**The US has several forms of rules**

- Privacy - general**
- Sector rules:** Health Insurance Portability and Accountability Act (HIPAA), Gramm-Leach-Bliley Act for financial information.
- Federal rules** eg. For the collection of child data on-line, Children's On-line Privacy Protection Act.
- State rules** eg. California Online Privacy Act.
- Cross-border regulations**
- Safe Harbor - Privacy Shield**



## 2 December - 8 December: Business Data Analysis

- Decision Support Systems
- Big Data
  - Structured Databases
  - Not fully structured data
  - Handling unstructured data
  - Visualization of the results
- IoT

## Resources

[Lecture notes #6](#)

## 9 December - 15 December: Theoretical written assessment

## Other resources

[Fundamentals of Information Systems](#)

Last modified: Wednesday, 28 August 2019, 4:44 PM