

**FEDERAL STATE BUDGET EDUCATIONAL  
INSTITUTION OF HIGHER EDUCATION  
“LOMONOSOV MOSCOW STATE UNIVERSITY”**

FACULTY OF ECONOMICS

«APPROVED»

Dean of the Faculty of Economics, MSU

professor \_\_\_\_\_ A.A.Auzan

«\_\_» \_\_\_\_\_ 2021

**COURSE SYLLABUS**

**Course title:**

**THEORIES OF DIGITAL BUSINESS (IN ENGLISH)**

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**Level of higher education:**

MASTER STUDIES

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**Field of study:**

38.04.02. MANAGEMENT

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**Mode of study:**

FULL-TIME

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Course syllabus is considered and approved by  
*the Educational and Methodological Council of the Faculty of Economics*  
(minutes №\_\_\_\_\_, date)

Moscow 2021

The course syllabus is developed in accordance with the self-established MSU educational standard (ES MSU) for implemented main professional educational programs of higher education for Master's degree in the field of study 38.04.02. Management

ES MSU is approved by the decision of MSU Academic Council dated December 28, 2020, minutes №7

Year (years) of enrollment: 2021 and forthcoming

## 1. Place and status of the course in the structure of the Master program

Course status: *elective*

Trimester: 4<sup>th</sup>

## 2. Course Prerequisites

*This discipline is based on the knowledge and skills acquired as a result of studying following courses:*

- Research Methods in Management (in English),
- International Business (in English).

## 3. Intended learning outcomes (ILO) of the course associated to the required competencies of the graduates

| Competencies of graduates (codes)                                                                              | Indicators of achievement of competencies                                                                                                     | Intended learning outcomes of the course (module) associated to the required competencies of the graduates                              |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>PC-9.</b> Capable of finding, systematizing and analyzing information in the field of management consulting | <b>PC-9.I-1.</b> Defines the information base of research in the field of management consulting                                               | <b>PC-9.I-1.K-1.</b> Knows the information base of research in the field of management consulting                                       |
|                                                                                                                |                                                                                                                                               | <b>PC-9.I-1.A-1.</b> Able to collect information in the field of management consulting                                                  |
|                                                                                                                | <b>PC-9.I-2.</b> Selects methodology and develops tools for systematization and analysis of information in the field of management consulting | <b>PC-9.I-2.K-1.</b> Knows the methods of systematization and analysis of information in the field of management consulting             |
|                                                                                                                |                                                                                                                                               | <b>PC-9.I-2.A-1.</b> Able to analyze and systematize collected information in the field of management consulting                        |
| <b>PC-10.</b> Capable of carrying out consulting management projects                                           | <b>PC-10.I-1.</b> Conducts consulting research                                                                                                | <b>PC-10.I-1.K-1.</b> Knows main technologies and methods of conducting consulting research                                             |
|                                                                                                                |                                                                                                                                               | <b>PC-10.I-1.A-1.</b> Able to correctly select and apply methods and tools for developing solutions to the formulated management issues |
|                                                                                                                | <b>PC-10.I-2.</b> Presents the results of the conducted study in the form of recommendations                                                  | <b>PC-10.I-2.A-1.</b> Able to present the results of consulting research in the form of recommendations                                 |

|                                                                                                                                                                                                                                                                        |                                                                                                                                                                                             |                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SPC-3. Capable of elaborating and implementing international development strategies for organizations with different forms of ownership based on the analysis of international business environment and modern trends, including digitalization of economic activities | SPC-3.I-1. Formulates and implements international development strategies for companies, considering their organizational and legal form                                                    | SPC-3.I-1.A-1. Able to analyze the existing international strategies of a company in international business                                                                                   |
|                                                                                                                                                                                                                                                                        | SPC-3.I-2. Adapts development strategies of organizations to the peculiarities of their international business environment and modern trends, including digitalization of economic activity | SPC-3.I-1.U-2. Able to make strategic managerial decisions in organizations / companies, considering their form of ownership and country of origin                                            |
|                                                                                                                                                                                                                                                                        |                                                                                                                                                                                             | SPC-3.I-2.A-1. Able to develop a strategy for the internationalization of the company, considering the peculiarities of the foreign business environment, the potential of the foreign market |
|                                                                                                                                                                                                                                                                        |                                                                                                                                                                                             | SPC-3.I-2.A-3. Able to evaluate the effect of implementation of new digital business models and technologies                                                                                  |

#### 4. Workload of the course by types of activity

The workload of the discipline is 6 ECTS: 216 academic hours, including 108 academic hours of contact work with a professor, 108 academic hours of self-directed studies.

#### 5. Learning format

Full-time, with the use of educational platform On.Econ (use of distant learning technologies is allowed if necessary).

#### 6. Content of the course structured by topics (sections) indicating the number of academic hours allocated to them and types of training

| Title and brief content of sections and topics of the course (module),<br><br>Form of assessment for the course (module) | Total (hours) | Contact work (work in contact with a professor)<br><i>Types of contact work, hours</i> |                     |                          |       | Student self-directed studies<br><i>Types of self-directed studies, hours</i> |                     |       |
|--------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------|---------------------|--------------------------|-------|-------------------------------------------------------------------------------|---------------------|-------|
|                                                                                                                          |               | Seminars                                                                               | Group consultations | Individual consultations | Total | Group project                                                                 | Written examination | Total |
| Topic 1. Concept of Digital Transformation                                                                               | 20            | 4                                                                                      | 2                   | 2                        | 8     | 10                                                                            | 2                   | 12    |
| Topic 2. Transformation of Information                                                                                   | 20            | 4                                                                                      | 2                   | 2                        | 8     | 10                                                                            | 2                   | 12    |

|                                                               |            |           |           |           |            |           |           |            |
|---------------------------------------------------------------|------------|-----------|-----------|-----------|------------|-----------|-----------|------------|
| Technologies in the company                                   |            |           |           |           |            |           |           |            |
| Topic 3. Big Data as an element of Digital Transformation     | <b>28</b>  | 8         | 4         | 4         | <b>16</b>  | 10        | 2         | <b>12</b>  |
| Topic 4. Agile approach in project development                | <b>28</b>  | 8         | 4         | 4         | <b>16</b>  | 10        | 2         | <b>12</b>  |
| Topic 5. The Internet of Things in the modern business        | <b>20</b>  | 4         | 2         | 2         | <b>8</b>   | 10        | 2         | <b>12</b>  |
| Theme 6. Artificial intelligence and machine learning         | <b>28</b>  | 8         | 4         | 4         | <b>16</b>  | 10        | 2         | <b>12</b>  |
| Topic 7. Neural networks and blockchain technology            | <b>28</b>  | 8         | 4         | 4         | <b>16</b>  | 10        | 2         | <b>12</b>  |
| Topic 8. Analysis of examples of building a digital business  | <b>24</b>  | 4         | 4         | 4         | <b>12</b>  | 10        | 2         | <b>12</b>  |
| Midterm assessment (control):<br>— <i>Written examination</i> | <b>20</b>  | 8         | -         | -         | <b>8</b>   | -         | 12        | <b>12</b>  |
| <b>Total</b>                                                  | <b>216</b> | <b>56</b> | <b>26</b> | <b>26</b> | <b>108</b> | <b>45</b> | <b>27</b> | <b>108</b> |

### **Brief content of the course topics**

#### **Topic 1.** Concept of Digital Transformation

- 1.1. The concept of Digital Transformation.
- 1.2. The main elements of Digital Transformation.
- 1.3. The practical results of the introduction of digital technology

#### **Topic 2.** Transformation of Information Technologies in the company

- 1.1. Changes in the approach of building an IT department in a company
- 1.2. Key business process optimization tools

#### **Topic 3.** Big Data as an element of Digital Transformation

- 1.1. The concept and main characteristics of Big Data
- 1.2. Types of Big Data
- 1.3. Big Data Analysis for management decision making
- 1.4. Big Data Management

#### **Topic 4. Agile approach in project development**

- 1.1. Principles for Agile in Project Development
- 1.2. SCRUM technique
- 1.3. The effectiveness of the application of a Agile approach

#### **Topic 5. The Internet of Things in the modern business**

- 1.1. The concept and basic principles of the Internet of Things
- 1.2. Basic scenarios for using the Internet of Things in an enterprise

#### **Topic 6. Artificial intelligence and machine learning**

- 1.1. Basic Principles of Artificial Intelligence
- 1.2. Application of artificial intelligence in the enterprise
- 1.3. Machine learning for business tasks
- 1.4. The main scenarios of machine learning in the company

#### **Topic 7. Neural networks and blockchain technology**

- 1.1. Principles of building neural networks in the enterprise
- 1.2. The use of blockchain technologies for the implementation of business objectives
- 1.3. Practically recommendations on the introduction of neural networks and blockchain in the enterprise

#### **Topic 8. Analysis of examples of building a digital business**

- 1.1. Examples of digital companies abroad
- 1.2. Examples of digital companies in Russia.

### **7. Assessment tools to assess the course learning outcomes**

#### **7.1. Sample assessment tools:**

| Learning outcomes of the course                                                                   | Types of assessment tools                                                                                                                |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PC-9.I-1.K-1.</b> Knows the information base of research in the field of management consulting | <ul style="list-style-type: none"> <li>• Group project</li> <li>• Participation in discussions</li> <li>• Written examination</li> </ul> |

|                                                                                                                                                                                                      |                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PC-9.I-1.A-1.</b> Able to collect information in the field of management consulting                                                                                                               | <ul style="list-style-type: none"> <li>• Group project</li> </ul>                                                                        |
| <b>PC-9.I-2.K-1.</b> Knows the methods of systematization and analysis of information in the field of management consulting                                                                          | <ul style="list-style-type: none"> <li>• Group project</li> <li>• Participation in discussions</li> <li>• Written examination</li> </ul> |
| <b>PC-9.I-2.A-1.</b> Able to analyze and systematize collected information in the field of management consulting                                                                                     | <ul style="list-style-type: none"> <li>• Group project</li> </ul>                                                                        |
| <b>PC-10.I-1.K-1.</b> Knows main technologies and methods of conducting consulting research                                                                                                          | <ul style="list-style-type: none"> <li>• Group project</li> <li>• Participation in discussions</li> <li>• Written examination</li> </ul> |
| <b>PC-10.I-1.A-1.</b> Able to correctly select and apply methods and tools for developing solutions to the formulated management issues                                                              | <ul style="list-style-type: none"> <li>• Group project</li> </ul>                                                                        |
| <b>PC-10.I-2.A-1.</b> Able to present the results of consulting research in the form of recommendations                                                                                              | <ul style="list-style-type: none"> <li>• Group project</li> </ul>                                                                        |
| <b>SPC-3.I-1.A-1.</b> Able to analyze the existing international strategies of a company in international business                                                                                   | <ul style="list-style-type: none"> <li>• Group project</li> <li>• Participation in discussions</li> </ul>                                |
| <b>SPC-3.I-1.U-2.</b> Able to make strategic managerial decisions in organizations / companies, considering their form of ownership and country of origin                                            | <ul style="list-style-type: none"> <li>• Group project</li> </ul>                                                                        |
| <b>SPC-3.I-2.A-1.</b> Able to develop a strategy for the internationalization of the company, considering the peculiarities of the foreign business environment, the potential of the foreign market | <ul style="list-style-type: none"> <li>• Group project</li> </ul>                                                                        |
| <b>SPC-3.I-2.A-3.</b> Able to evaluate the effect of implementation of new digital business models and technologies                                                                                  | <ul style="list-style-type: none"> <li>• Group project</li> <li>• Participation in discussions</li> </ul>                                |

## 7.2. Course assessment criteria (scores):

| Types of assessment tools                        | Score      |
|--------------------------------------------------|------------|
| Practical home tasks (stages of a group project) | 150 (6x25) |
| Participation in discussions                     | 90         |
| Written examination                              | 60         |
| <b>Total</b>                                     | <b>300</b> |

### 7.3. Grade for the course is determined based on the following criteria:

| Grade               | Minimum score | Maximum score |
|---------------------|---------------|---------------|
| <i>Excellent</i>    | 255           | 300           |
| <i>Good</i>         | 195           | 254,9         |
| <i>Satisfactory</i> | 120           | 194,9         |
| <i>Failed</i>       | 0,0           | 119,9         |

**Note:** in case a student's score obtained during the trimester is less than 20% of the maximum score of the discipline, the following rule of passing the course should be applied at the midterm assessment (and further re-examination): 'a student can obtain only a satisfactory mark and only in case she/he receives for the midterm assessment, including all the course material, no less than 85% of the score allocated to this assessment'.

### 7.4. Typical tasks and other materials necessary to assess the learning outcomes:

#### — Participation in discussions

Sample topics for discussion:

- Based on Netflix's case study, highlight the key elements of the digital transformation used by the company to lead on the market.
- Analyze online taxi services. What additional features could be added? Make your suggestions based on the Agile methodology;
- Give examples of companies that competed unsuccessfully against new digital players. What made these companies unsuccessful? Submit your answer in a form of an essay.

#### — Written examination

It is carried out in the form of a test with multiple choice questions with only one correct answer. The test includes all the material studied before it. To pass the test successfully students are required not only to study contact lessons materials, but also recommended literature.

1. Today the concept of machine learning can be used:
  - a) in medicine;
  - b) in the financial sector;
  - c) in public services;
  - d) in all of the above cases.
2. What is SCRUM?
  - a) one of the Agile techniques;
  - b) one of the particular cases of artificial intelligence;
  - c) sports discipline;

- d) part of data science.
3. According to IDC, what will be the share of digital companies in global GDP by 2021?
- a) 20%;
  - b) 10%;
  - c) 90%;
  - d) 50%

— *Project*

The project within the course is carried out in small groups, the distribution of students into groups and discussion of the project topics takes place at the first seminar.

Topics examples:

- Analysis of the successful implementation of digital technologies using Tesla Motors as an example;
- Overview of digital bank leaders in the Russian Federation;
- Online retail: the evolution of trade in goods;
- Artificial intelligence in agriculture: why machine learning technologies are needed in the cultivation of food?
- Short-term rental market: will car-sharing services replace a private car?

### 7.5. Methodological guidelines and assignment requirements:

All assignments must be completed in strict accordance with the requirements set out at the course page at the educational platform On.Econ.

## 8. Resources

### 8.1. List of main and additional literature

#### Main literature:

1. Clayton M. Christensen, The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail, Harvard Business Review Press - 1997
2. David Soskin, Net Profit. How to Succeed in Digital Business, John Wiley & Sons Limited - 2010
3. Erik Brynjolfsson, Andrew McAfee, The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies, W. W. Norton & Company – 2016
4. Eric Schmidt, Jared Cohen, The New Digital Age: Transforming Nations, Businesses, and Our Lives, Vintage – 2014
5. Tapscott Don, Tapscott Alex, Blockchain Revolution: How Bitcoin is Changing the World, Penguin Group, - 2017

#### Additional literature (for reports and essays preparation):

1. Ari Kaplan, Reinventing Professional Services. Building Your Business in the Digital Marketplace, John Wiley & Sons Limited – 2011
2. Markoff John, Machines of Loving Grace: The Quest for Common Ground Between Humans and Robots, Ecco - 2015

## **8.2. List of licensed software**

Package of Software ‘Microsoft Office’.

## **8.3. List of professional databases and information referral systems**

Institutional subscription resources of the Faculty of Economics, MSU.

## **8.4. List of Internet resources (if necessary)**

- Harvard Business Review
- Forbes
- <https://www.delltechnologies.com/en-us/perspectives/digital-transformation-index.htm>

## **8.5. Description of material and technical support**

For the appropriate organization of classes, the following equipment is needed:

- ‘ON.ECON’ electronic educational information environment of the Faculty of Economics, Lomonosov Moscow State University;
- multimedia class with a video projector, Internet access
- Institutional subscription resources of the Faculty of Economics, MSU.

## **9. Language of instruction:** English

## **10. Professor (professors):** PhD in Economics Vartanyan A.A.

## **11. Syllabus authors:** PhD in Economics Vartanyan A.A.