**MINISTRY OF SCIENCE & EDUCATION REPUBLIC OF AZERBAIJAN**



# Azerbaijan Architecture and Construction University

## Master's Center

"**Confirmed by**":

Director of the Master's Center:
_____ dos. R.Y.Samedov
"15" february 2024

**"Developing Digital Business Ecosystems"**
**Discipline**
**Education program**
***(syllabus)***

| **Specialty**(*code and name*) | **02_WORK4CE** |
|---|---|
| ***1. Information about discipline*** | |
| Name of discipline | **"Developing Digital Business Ecosystems"** |
| Academic language | *English* |
| Academic year | *2024* |
| Semestr | *Sping* |
| Type of education | *Full time* |
| Educational stage | *Master* |
| Group | |
| Educational load | 30 hours |
| Subject's teaching days | *Friday* |
| Number of training weeks | *15* |
| Lecture-hall | *№1121, I branch* |
| ***2. Information about lecturer*** | |
| Lecturer | ***Kanan Hasanov*** |
| *e- mail* adress | *kanan.hasanov@azmiu.edu.az* |
| Phone number | *Mobile: +994503456600 work:* |

Baku – 2024

## I. Course Prescription

Throughout the modern industrial era, industries have generally been organized as linear value chains. This gave birth to the vertically integrated organization, which was organized in such a way in order to control the entire value chain and achieve economies of scale, which in turn would create a significant competitive advantage. As digital technologies continue gaining adoption, they start enabling new ways of organizing how value is created. This transition means moving from value chains to digital ecosystems. This is giving way to new industry giants, which rely on the strength of their digital ecosystems to attain market dominance. However, there is still limited knowledge of digital ecosystems: how they are created, how they work and, importantly, how organizations beyond digital giants can approach digital ecosystems.

Importantly though, an ecosystem is more than a set of partnerships. Since it is a network of loose contributors who interact closely to create mutual value, there is necessarily an atmosphere of interdependency among partners in the ecosystem. This means that all partners share the same interests and that individual partners will only be successful if the ecosystem succeeds. As such, business and operating models need to be adapted to the new paradigm.

This module will enable you to understand how ecosystems are changing the fundamentals of the business world and introduce a common language, a way of thinking and a methodology to help you address the challenges and opportunities in this space.

**Overall Learning Outcome:**

At the end of the course, the student will understand the importance of considering the triple bottom line of Enhanced quality of life - Economic, Social, and Environmental in the DBE. The student will become familiar with the Digital Business Ecosystem (DBE) basis of business and digital ecosystem, the principles of DBE; the social-economical view of DBE and the Information-communication technology (ICT) view of DBE the triple bottom line of DBE

- Familiarity with the types of digital platforms
- Familiarity with the main theories explaining the functioning of platforms
- Simulation of ecosystem development around the platform
- Simulation of ecosystem development around the platform (system dynamics)
- Introducing business models using digital platforms
- Introduction to digital platform management
- Ecosystem topology around digital platforms
- Innovation around digital platforms
- The future of digital platforms
- Technical Competence: know and use DBE concepts for analyzing and building digital business environments for small and medium enterprises.
- Professional Competence: manage the process of developing the digital business environment.
- Global Competence: take into account cultural diversity, social differences, involvedness of participants, and individual features during developing DBE.

**Knowledge:**

- Understanding the fundamental concepts of digital business ecosystems.
- Familiarity with the key technologies and trends shaping digital business environments.
- Knowledge of the role of data analytics, artificial intelligence, and digital marketing in business ecosystems.
- Awareness of legal and ethical considerations in digital business.

**Skills:**

- Ability to analyze and assess digital business models and strategies.
- Proficiency in using digital tools and platforms for business operations and marketing.
- Data analysis and interpretation skills for making informed business decisions.
- Effective communication and collaboration skills within a digital ecosystem.
- Problem-solving skills in the context of digital business challenges.

**General competencies:**

- Adaptability and agility in navigating the rapidly evolving digital landscape.
- Critical thinking and decision-making abilities in digital business scenarios.
- Ethical and responsible use of technology and data in business practices.
- Teamwork and collaboration skills in multidisciplinary digital teams.
- Entrepreneurial mindset and innovation capabilities for creating digital business opportunities.

**III. Plan of lectures, subject matter and training schedule**

| № | Date | The topic of lecture and code of literature | Auditorium Hours |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 1 | 23.02.2024<br>01.03.2024 | Topic 1: Introduction to Digital Business Ecosystems<br>Outline:<br>1. Definition and scope of DBEs.<br>2. Historical context and evolution.<br>3. Importance in the modern economy. | 4 |
| 2 | 08.03.2024 | Topic 2: Components and Actors of Digital Business Ecosystems<br>Outline:<br>1. Core components.<br>2. Key actors and their roles.<br>3. Interaction and interdependencies. | 2 |
| 3 | 15.03.2024<br>22.03.2024 | Topic 3: Governance Models for Digital Business Ecosystems<br>Outline:<br>1. Governance structures.<br>2. Regulatory frameworks.<br>3. Case studies of governance models. | 4 |

| | | | |
|---|---|---|---|
| 4 | 29.03.2024<br>05.04.2024 | Topic 4: Business Networks and Industry Clusters in DBEs<br>Outline:<br>1. Definitions and examples.<br>2. Benefits and challenges.<br>3. Strategies for effective networking. | 4 |
| 5 | 12.04.2024 | Topic 5: Platform Economy in Digital Business Ecosystems<br>Outline:<br>1. Characteristics of platform economy.<br>2. Role of platforms in DBEs.<br>3. Case studies. | 2 |
| 6 | 19.04.2024<br>26.04.2024 | Topic 6: Business Processes, Models, and Value Chains in DBEs<br>Outline:<br>1. Definitions and examples.<br>2. Optimization strategies.<br>3. Integration into DBEs. | 4 |
| 7 | 03.05.2024 | Topic 7: Cost-Benefit Analysis and DBEs<br>Outline:<br>1. Methodologies for cost-benefit analysis.<br>2. Application in DBEs.<br>3. Case studies. | 2 |
| 8 | 10.05.2024<br>17.05.2024 | Topic 8: Innovation, Competition, and Dynamics in DBEs<br>Outline:<br>1. Drivers of innovation.<br>2. Competitive strategies<br>3. Dynamics and evolution of DBEs. | 4 |
| 9 | 24.05.2024<br>31.05.2024 | Topic 9: Trust Among Enterprises (SME) in DBEs<br>Outline:<br>1. Importance of trust.<br>2. Building and maintaining trust.<br>3. Case studies of trust dynamics. | 4 |
| | | **Total** | **30** |

## IV. Coursework and their features

There is no coursework in the subject program.

## V. Free work

Topics for free work of students.

In the learning process, students' knowledge of the subject is assessed by oral or written answers to theoretical questions posed by the subject teacher during lectures and lessons, as well as an oral examination on the ability to apply the knowledge in practical issues. Tests and discussions are organized by the teacher of the subject in order to check the quality of assimilation. The topics of free work performed by students are given by the teacher who teaches the subject, and may include the following topics:

1. **Case Study on a Successful Digital Business Ecosystem**
    - Analyze a real-world example of a successful DBE.
    - Identify key components, governance models, and the role of ICT.
    - Discuss the socio-economic impact and business benefits.
2. **Development of a Digital Business Ecosystem for a Specific Industry**
    - Propose a digital business ecosystem model for an industry of your choice.
    - Define the key components, actors, and governance model.
    - Discuss potential challenges and solutions.
3. **Impact of Digital Ecosystems on Small and Medium Enterprises (SMEs)**
    - Examine how DBEs influence SMEs.
    - Discuss the benefits and challenges for SMEs in integrating into DBEs.
    - Provide examples and case studies.
4. **Comparison of Governance Models in Different Digital Business Ecosystems**
    - Compare and contrast various governance models used in DBEs.
    - Evaluate their effectiveness and impact on ecosystem performance.
    - Provide recommendations for best practices.
5. **Role of Data Analytics and Business Intelligence in Digital Business Ecosystems**
    - Investigate the importance of data analytics and BI tools in DBEs.
    - Discuss how these tools enhance decision-making and efficiency.
    - Present case studies of successful implementations.
6. **Innovation and Competition in Digital Business Ecosystems**
    - Explore how DBEs foster innovation and competition.
    - Analyze the dynamics and evolution of competition within DBEs.
    - Discuss the role of platforms in driving innovation.
7. **Designing ICT Architecture for a Digital Business Ecosystem**
    - Propose an ICT architecture for a hypothetical DBE.
    - Define the key technologies and tools required.
    - Discuss the challenges and solutions in implementing this architecture.

## VI. assessment

Student's final score is calculated by the maximum 100 points.
Of these, the student earns 50 points during the semester and 50 points in the exam.

50 points scored during the semester include:
• for the duration of the course - 10 points;
• free works - 10 points;
• According to the results of classes - 30 points.
50 points scored before the exam in the semester include:
• for the attendance of the course - 10 points;
• according to the results of seminars - 30 points;
• for free works (1 point for one free work) - 10 points;

The number of points scored by the student in the exam must be at least 17.
Student knowledge is evaluated in accordance with the European credit transfer system (ECTS) in accordance with the following table:

| | | |
|---|---|---|
| 91 –100 points | A | Excellent |
| 81 – 90 points | B | Very good |
| 71 – 80 points | C | Good |
| 61 – 70 points | D | Enough |
| 51 – 60 points | E | Satisfactory |
| Less then 51 | F | Insufficient |

**Violation of the rules of conduct.** The student must be attentive and active in the educational process, must observe hygiene and should be engaged only in the training of the course. It is necessary to observe ethical standards accepted in society and legal norms existing in our country. If a student violates the rules of disciplinary action, he / she will be punished in the manner prescribed by the University Regulation.

## VII. Teaching materials

### 7.1. Recommended literature

Architecting the Internet of Things ( PDFDrive ).pdfArchitecting the Internet of Things ( PDFDrive ).pdf
Business-Analytics-2nd-Edition-by-James-Evans-pdf-free-download-booksfree.org_.pdfBusiness-Analytics-2nd-Edition-by-James-Evans-pdf-free-download-booksfree.org_.pdf
Data Analytics Made Accessible ( PDFDrive ).pdfData Analytics Made Accessible ( PDFDrive ).pdf
Data Analytics Made Accessible by Anil Maheshwari (z-lib.org).pdf

## VIII. It is planned to conduct written exam on the subject

**Note:** 1. Exams correspond to the curriculum of the subject (syllabus);
2. The number and content of exams can be changed by the subject teacher before the exam in accordance with the curriculum of the subject.

## IX. Training plan of discipline

In the academic calendar, the course schedule is organized in accordance with the academic schedule of the university.

## X. Studying students' views on the subject (comments and suggestions)

This employee training plan (syllabus) is in accordance with the State Standard for the Master's level Education Program of Azerbaijan Republic.

This employee training plan (syllabus) for the subject was discussed and approved at the meeting of the "Master's Center" on February 2024, protocol №_____.

Date of meeting ”16” February 2024

Senior Lecturer / MSc, Kanan Hasanov _____