# Course syllabus

## Artificial intelligence in management

**Degree of higher education – Master**
**Field of knowledge – 07 «Management and administration»**
**Specialty – 073 «Management»**
**Educational and scientific program - «International Management»**
**Year of study: I, Semester: II**
**Discipline of free choice**

**Number of credits:** 5

**Language of teaching:** English

## Lecturer

| Name | **Oksana Myhal** |
|---|---|
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## Description of the discipline

The purpose of studying the discipline «Artificial intelligence in management» is the formation of future specialists' knowledge in the field of management in the artificial intelligence era. The discipline «Artificial intelligence in management» provides theoretical and practical training to future specialists on the development of various types of AI in management, research on the influence of AI on the company's activities, the formation of effective AI strategies in management.

## Course structure

| № | Topic | Results of study | Task |
|---|---|---|---|
| 1. | Introduction to AI. The role of AI in business and management. | Know the role of AI in business and managemen. Be able to use main types of AI in management. | Questions for discussion, cases |
| 2. | Organizations in the artificial intelligence era. | To be able to use AI in all types of organizations. | Questions for discussion, cases |
| 3. | The role of artificial intelligence in decision-making processes. Main types of data analysis. | Know how to use AI tools for better decision-making process. | Cases |
| 4. | Leadership in the artificial intelligence era. | Know how to develop leadership in the era of AI. | Questions for discussion, cases |
| 5. | Introduction to marketing management in the AI era. | Be able to use AI tools in marketing management. | Test, case |
| 6. | AI in product management. | Be able to use AI tools in product management. | Test, case |
| 7. | Strategic management and AI. AI development strategies on the global arena. | Be able to use AI tools in strategic management. | Test |
| 8. | AI and future management tools for business transformation. | Know the peculiarities of AI management tools for business transformation. | Test |

# Recommended literature

1. Abbasi, A., Li, J., Clifford, G., & Taylor, H. (2018). Make "Fairness by Design" Part of Machine Learning. Harvard Business Review. Retrieved April 27 from https://hbr.org/2018/08/make-fairness-bydesign-part-of-machine-learning

2. Agrawal, A., Gans, J., & Goldfarb, A. (Eds.). (2019). The Economics of Artificial Intelligence: An Agenda. University of Chicago Press. Andrulis, J., Meyer, O., Schott, G., Weinbach, S., & Gruhn, V. (2020). Domain-Level Explainability -- A Challenge for Creating Trust in Superhuman AI Strategies 3rd International Workshop on Explainable AI Planning, Nancy, France. http://xaip.mybluemix.net/#/2020

3. Balakrishnan, T., Chui, M., Hall, B., & Henke, N. (2020). The State of AI in 2020. McKinsey. Retrieved April 19 from https://www.mckinsey.com/business-functions/mckinsey-analytics/ourinsights/global-survey-the-state-of-ai-in-2020

4. Barredo Arrieta, A., Díaz-Rodríguez, N., Del Ser, J., Bennetot, A., Tabik, S., Barbado, A., Garcia, S., GilLopez, S., Molina, D., Benjamins, R., Chatila, R., & Herrera, F. (2020). Explainable Artificial Intelligence (XAI): Concepts, taxonomies, opportunities and challenges toward responsible AI. Information Fusion, 58, 82-115. https://doi.org/10.1016/j.inffus.2019.12.012

5. British Antarctic Survey. (2021). Artificial Intelligence Lab. Natural Environment Research Council Retrieved February 10, 2021 from https://www.bas.ac.uk/project/ai/

6. Cade Metz (2021). Genius Makers: The Mavericks Who Brought AI to Google, Facebook, and the World. Dutton, 382 p.

7. Fjeld, J., Achten, N., Hilligoss, H., Nagy, A., & Srikumar, M. (2020). Principled Artificial Intelligence: Mapping Consensus in Ethical and Rights-based Approaches to Principles for AI. H. University.

8. Glikson, E., & Woolley, A. W. (2020). Human Trust in Artificial Intelligence: Review of Empirical Research. Academy of Management Annals, 14(2), 627-660. https://doi.org/10.5465/annals.2018.0057

9. Greg Kihlstrom, Carlos Manalo (2023). The Agile Brand Guide to AI & Marketing: Generative AI, Next Best Action, Task Automation, and Beyond for Marketers (Agile Brand Guides). 96 p.

10. Gunning, D., Stefik, M., Choi, J., Miller, T., Stumpf, S., & Yang, G.-Z. (2019). XAI-Explainable Artificial Intelligence. Science Robotics, 4(37), eaay7120. https://doi.org/10.1126/scirobotics.aay7120

11. Holmström, J. (2018). Recombination in Digital Innovation: Challenges, Opportunities, and the Importance of a Theoretical Framework. Information and Organization, 28(2), 107-110. https://doi.org/10.1016/j.infoandorg.2018.04.002

12. Paul Roetzer (2022). Marketing Artificial Intelligence: AI, Marketing, and the Future of Business. Matt Holt, 256 p.

13. Raj Venkatesan, Jim Lecinski (2021). The AI Marketing Canvas: A Five-Stage Road Map to Implementing Artificial Intelligence in Marketing. Stanford Business Books, 272 p.

14. Raisch, S., & Krakowski, S. (2021). Artificial Intelligence and Management: The Automation Augmentation Paradox. Academy of Management Review, 46(1), 192-210. https://doi.org/10.5465/2018.0072

15. Recker, J., Lukyanenko, R., Jabbari, M., Samuel, B. M., & Castellanos, A. (2021). From Representation to Mediation: A New Agenda for Conceptual Modeling Research in a Digital World. MIS Quarterly, 45(1), 269-300. https://doi.org/10.25300/MISQ/2020/16207

16. Sergeeva, A. V., Faraj, S., & Huysman, M. (2020). Losing Touch: An Embodiment Perspective on Coordination in Robotic Surgery. Organization Science, 31(5), 1248-1271. https://doi.org/10.1287/orsc.2019.1343

17. Seth Earley, Tom Davenport (2020). The AI-Powered Enterprise: Harness the Power of Ontologies to Make Your Business Smarter, Faster, and More Profitable. LifeTree, 320 p.

18. Shrestha, Y. R., Ben-Menahem, S. M., & von Krogh, G. (2019). Organizational Decision-Making Structures in the Age of Artificial Intelligence. California Management Review, 61(4), 66-83. https://doi.org/10.1177/0008125619862257

19. Stuart Russell, Peter Norvig (2020). Artificial Intelligence: A Modern Approach (Pearson Series in Artifical Intelligence). Pearson; 4th edition, 1136 p.

20. Strich, F., Mayer, A.-S., & Fiedler, M. (2020). What Do I Do in a World of Artificial Intelligence? Investigating the Impact of Substitutive Decision-Making AI Systems on Employees' Professional Role Identity. Journal of the Association for Information Systems, 22(2), 304-324.

https://doi.org/10.17705/1jais.00663

21. Sturm, T., Gerlach, J. P., Pumplun, L., Mesbah, N., Peters, F., Tauchert, C., Nan, N., & Buxmann, P. (2021). Coordinating Human and Machine Learning for Effective Organizational Learning. MIS Quarterly, 45, forthcoming.

22. Tensor Oliver (2019). Artificial intelligence and Machine learning for business: the ultimate guide to use data science for business through applied artificial intelligence. 122 p.

23. Townsend, A. M., & Hunt, R. A. (2019). Entrepreneurial Action, Creativity, & Judgment in the Age of Artificial Intelligence. Journal of Business Venturing Insights, 11(e00126). https://doi.org/10.1016/j.jbvi.2019.e00126

24. Verganti, R., Vendraminelli, L., & Iansiti, M. (2020). Innovation and Design in the Age of Artificial Intelligence Journal of Product Innovation Management, 37(3), 212-227. https://doi.org/10.1111/jpim.12523

25. Von Krogh, G. (2018). Artificial Intelligence in Organizations: New Opportunities for Phenomenon-Based Theorizing. Academy of Management Discoveries, 4(4), 404-409. https://doi.org/10.5465/amd.2018.0084

26. Yannick Peifer, Tim Jeske, Sven Hille (2022). Artificial Intelligence and its Impact on Leaders and Leadership. URL: https://www.sciencedirect.com/science/article/pii/S1877050922003106

27. Young Christopher (2023). Build a Winning AI Strategy for Your Business. URL: https://hbr.org/2023/07/build-a-winning-ai-strategy-for-your-business.

## Assessment Policy

**Deadline and retake policy:** Modules are retaken with the permission of the dean's office if there are good reasons (for example, sick leave).

**Academic Integrity Policy:** write-offs during control work are prohibited (including using mobile devices).

**Visiting policy:** Attending classes is a mandatory component of the assessment. For objective reasons (for example, illness, international internship, and other reasons), training can take place online with the permission of the university administration.

## Assessment

The final score (on a 100-point scale) from the discipline «Startup management» is defined as a weighted average, depending on the specific weight of each credit component:

| Module 1 | Module 2 | Module 3 |
|---|---|---|
| 30% | 40% | 30% |
| 1. Oral discussion (test) during the class (topics 1-5 for 8 points) = 40 points.<br><br>2. Paperwork = 60 points. | 1. Oral discussion (test) during the class (topics 6-8 for 10 points) = 30 points.<br><br>2. Paperwork (control) = 70 points. | 1. Active participation in training = 20 points<br><br>2. Writing a CPIT, based on formed individual tasks = 50 points.<br><br>3. Defense of CPIT = 30 points. |

**Rating scale:**

| According to the scale of the university | According to the national scale | According to the ECTS scale |
|---|---|---|
| 90-100 | Excellent | A (Excellent) |
| 85-89 | Good | B (Very good) |
| 75-84 | | C (Good) |
| 65-74 | Satisfactory | D (Satisfactory) |
| 60-64 | | E (Enough) |
| 35-59 | Unsatisfactory | FX (unsatisfactory with the possibility of retaking the exam) |
| 1-34 | | F (unsatisfactory with mandatory completion of the course) |