

## *The Hebrew University of Jerusalem*

### *Syllabus*

## *Introduction to Learning Analytics in Education - 34379*

*Last update 23-11-2023*

*HU Credits: 2*

*Degree/Cycle: 1st degree (Bachelor)*

*Responsible Department: Education*

*Academic year: 0*

*Semester: 1st Semester*

*Teaching Languages: Hebrew*

*Campus: Mt. Scopus*

*Course/Module Coordinator: Dr. Janan Saba*

*Coordinator Email: [janan.saba@mail.huji.ac.il](mailto:janan.saba@mail.huji.ac.il)*

*Coordinator Office Hours: by email appointment*

*Teaching Staff:*

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Dr. Janan Saba

Course/Module description:

*This course provides an introduction to the field of learning analytics and its application in education. Students will explore concepts, theories, and methods to learning analytics, and examine how data-driven insights can be used to improve teaching and learning practices.*

Course/Module aims:

*The goal of this course is to introduce students to learning analytics in education and equip them with the knowledge about approaches and tools of learning analytics that aim for improving teaching and learning practices.*

Learning outcomes - On successful completion of this module, students should be able to:

- *Understand the fundamental concepts and theories of learning analytics.*
- *Consider the benefits and challenges of implementing learning analytics in education.*
- *Gain an understanding of key approaches and tools used in learning analytics.*
- *Develop a basic understanding of the tools and technologies used in learning analytics*
- *Discuss the ethical considerations related to the use of learning analytics.*

Attendance requirements(%):

*Teaching arrangement and method of instruction: 1. Instruction: It includes interactive instruction related to the topic of the week*  
*2. Class discussions: providing students with the opportunity to share their insights and engage in collaborative activities related to learning analytics.*  
*3.Exercises and Assignments: To reinforce learning, reading assignments, practical exercises and assignments will be assigned to students as homework and in class.*

Course/Module Content:

- *Introduction to Learning Analytics: Definitions, Key concepts in Learning analytics*
- *Methods and approaches: Visual Analytics; Predictive Modelling; Natural Language*

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*Processing; Social network analysis; and Self-Regulated Learning*  
*- Analytics in the Real World: Personalization; Assessment; Academic Analytics;*  
*Ethics and policy.*

**Required Reading:**

- 1.Ferguson, R. (2012). Learning analytics: drivers, developments and challenges. *International Journal of Technology Enhanced Learning*, 4(5-6), 304-317.
- 2.Gardner, J., & Brooks, C. (2018). Student success prediction in MOOCs. *User Modeling and User-Adapted Interaction*, 28, 127-203.
- 3.Lang, C., Siemens, G., Wise, A., & Gasevic, D. (Eds.). (2017). *Handbook of learning analytics* (p. 23). New York: SOLAR, Society for Learning Analytics and Research.
- 4.Pardos, Z. A., Tang, S., Davis, D., & Le, C. V. (2017, April). Enabling real-time adaptivity in MOOCs with a personalized next-step recommendation framework. In *Proceedings of the fourth (2017) ACM conference on learning@ scale* (pp. 23-32).
- 5.Rabbany, R., Elatia, S., Takaffoli, M., & Zaïane, O. R. (2014). Collaborative learning of students in online discussion forums: A social network analysis perspective. *Educational data mining: Applications and trends*, 441-466.
- 6.Roll, I., & Winne, P. H. (2015). Understanding, evaluating, and supporting self-regulated learning using learning analytics. *Journal of Learning Analytics*, 2(1), 7-12.
- 7.Salehi, S., Burkholder, E., Lepage, G. P., Pollock, S., & Wieman, C. (2019). Demographic gaps or preparation gaps?: The large impact of incoming preparation on performance of students in introductory physics. *Physical Review Physics Education Research*, 15(2), 020114.
- 8.Verbert, K., Ochoa, X., De Croon, R., Dourado, R. A., & De Laet, T. (2020, March). Learning analytics dashboards: the past, the present and the future. In *Proceedings of the tenth international conference on learning analytics & knowledge* (pp. 35-40).

**Additional Reading Material:**

*Additional readings will be added in the beginning of the course.*

**Grading Scheme:**

*Essay / Project / Final Assignment / Home Exam / Referat 55 %*  
*Presentation / Poster Presentation / Lecture/ Seminar / Pro-seminar / Research proposal 15 %*  
*Submission assignments during the semester: Exercises / Essays / Audits / Reports / Forum / Simulation / others 30 %*

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*Additional information:*