

SYLLABUS

Cognitive Work Analysis

University year 2025-2026

1. Information regarding the programme

1.1. Higher education institution	Babeş-Bolyai University
1.2. Faculty	The Faculty of Psychology and Educational Sciences
1.3. Department	Department of Psychology
1.4. Field of study	Psychology – Cognitive Sciences
1.5. Study cycle	Bachelor
1.6. Study programme/Qualification	Psychology – Cognitive Sciences / Bachelor in Psychology
1.7. Form of education	Full-time

2. Information regarding the discipline

2.1. Name of the discipline	Cognitive Work Analysis			Discipline code	PLE1532		
2.2. Course coordinator	Asist. Univ. Dr. Sabina Trif-Duma						
2.3. Seminar coordinator	Asist. Univ. Dr. Sabina Trif-Duma						
2.4. Year of study	III	2.5. Semester	5	2.6. Type of evaluation	E/V	2.7. Discipline regime	DS

3. Total estimated time (hours/semester of didactic activities)

3.1. Hours per week	4	of which: 3.2 course	2	3.3 seminar/laboratory	2
3.4. Total hours in the curriculum	56	of which: 3.5 course	28	3.6 seminar/laborator	28
Time allotment for individual study (ID) and self-study activities (SA)					hours
Learning using manual, course support, bibliography, course notes (SA)					25
Additional documentation (in libraries, on electronic platforms, field documentation)					15
Preparation for seminars/labs, homework, papers, portfolios and essays (mai mare sau egal cu nr. total ore prevăzut în calendarul disciplinei pentru temele de control)					25
Tutorship					1
Evaluations					2
Other activities: [de ex.: comunicare bidirecțională cu titularul de disciplină / tutorele]					2
3.7. Total individual study hours	70				
3.8. Total hours per semester	126				
3.9. Number of ECTS credits	5				

4. Prerequisites (if necessary)

4.1. curriculum	<p>Completing other courses will facilitate students in learning this course:</p> <ul style="list-style-type: none"> • Psychological assessment • Personality psychology • Social cognition • Group dynamics • Quantitative and statistics research methods
4.2. competencies	<ul style="list-style-type: none"> • Basic skills and knowledge of research methods in social science • Knowledge of basic theories in Social Psychology and Organizational Psychology

5. Conditions (if necessary)

5.1. for the course	Room with at least 50 seats, computer and video projector, Internet connection
5.2. for the seminar /lab activities	Room with at least 50 seats, computer and video projector, Internet connection

6.1. Specific competencies acquired ¹

Professional/essential competencies	<p>KNOWLEDGE</p> <ul style="list-style-type: none"> • Proving deep understanding of the theoretical frameworks and methodologies of cognitive work analysis and how it is used in complex socio-technical systems. • Proving capacity of explaining the principles behind each phase of cognitive work analysis and how they contribute to system design and human-machine interaction. <p>ABILITIES</p> <ul style="list-style-type: none"> • Application in specific organizational contexts of methods, techniques and intervention procedures • Adapting and optimizing the implementation of cognitive work analysis methods, techniques or intervention procedures to various socio-technical systems. • Application of the different methods and frameworks in order understand the decision-making processes in complex systems and their impact on the work design and job performance. • Formulation and communication of professional information in a manner adapted to the specifics of the interlocutor
Transversal competencies	<ul style="list-style-type: none"> • Execution of professional tasks in accordance with the values and ethical principles in force • Development of teamwork skills by planning and implementing activities within small social groups • Permanent evaluation of one's own need for continuous training in order to adapt professional skills to the changing requirements of the socio-organizational context (development as a scientist-practitioner) • Cultivating personal responsibility for professional development in the field • Manifestation of a responsible attitude regarding the design and development of research in the field

6.2. Learning outcomes

Knowledge	The student knows the theoretical frameworks and methodologies of cognitive work analysis and how it is used in complex socio-technical systems.
Skills	The student is able to apply in specific organizational contexts of methods, techniques and intervention procedures

¹ One can choose either competences or learning outcomes, or both. If only one option is chosen, the row related to the other option will be deleted, and the kept one will be numbered 6.

Responsibility and autonomy:	The student has the ability to work independently to obtain effectiveness in their interventions
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7. Objectives of the discipline (outcome of the acquired competencies)

7.1 General objective of the discipline	Learning the main theories and scientific models of cognitive analysis of work and their use in order to explain the phenomena related to work, the way people perform their work tasks in different contexts and the design of effective interventions
7.2 Specific objective of the discipline	<p>After completing this course, students will be required to:</p> <ul style="list-style-type: none"> • Know and critically analyze the main theories, scientific models and empirical data from the literature to explain the phenomena related to work, with how people perform their work tasks in different contexts • Know and critically analyze the main theories, scientific models and empirical data from the literature to explain the relationship between person and organization (how it is formed, developed and concluded) • Develop and evaluate research approaches to the specific phenomena of work activity and the relationship between the individual and the organization • Demonstrate and practice skills of design, implementation and evaluation of work analysis, recruitment and professional selection, assessment of individual differences, professional performance and attitudes at work • To design intervention interventions in the work and organizational environment • To approach and develop the ethical sense of research and psychological interventions specific to the work activity and the relationship between the individual and the organization

8. Content

8.1 Course	Teaching method	Remarks
1. Past, present and future of Cognitive Work Analysis	Interactive lecture, Demonstrative Examples	<p>Students will selectively consult the references: Vicente, K. J. (1999). <i>Cognitive work analysis: Toward safe, productive, and healthy computer-based work</i>. Mahwah, NJ: Lawrence Erlbaum Associates.</p> <p>Naikar, N. (2011). <i>Cognitive Work Analysis: Foundations, Extensions, and Challenges. Air Operations Division, Defence Science and Technology Organisation..</i></p>

2. Work Domain Analysis	Interactive lecture, Case-studies	Students will selectively consult the references: Naikar, N, Hopcroft, R., Moylan, A. (2005). Work Domain Analysis. Theoretical Concepts and Methodology. <i>Air Operations Division, Defence Science and Technology Organisation</i>
3. Work Domain Analysis Models: Abstraction Hierarchy; Abstraction-Decomposition Model	Interactive lecture, Demonstrative Examples	Students will selectively consult the references: G. J. M., Salmon, P. M., Lenné, M. G. & Stanton, N. A. (2015). Designing sociotechnical systems with cognitive work analysis: Putting theory back into practice. <i>Ergonomics</i> , 58, 822–851. https://doi.org/10.1080/00140139.2014.980335 Naikar, N, Hopcroft, R., Moylan, A. (2005). Work Domain Analysis. Theoretical Concepts and Methodology. <i>Air Operations Division, Defence Science and Technology Organisation</i>
4. Control Task Analysis	Interactive lecture, demonstrative example	Students will selectively consult the references: Hollnagel, E. (2012). Task Analysis: Why, What, and How. In G. Salvendy (Ed.). <i>Handbook of Human Factors and Ergonomics</i> (Chapter 3, pp. 385 – 396). John Wiley & Sons. Naikar, N., Moylan A., Pearce, B. (2006). Analysing activity in complex systems with cognitive work analysis: concepts, guidelines and case study for control task analysis. <i>Theoretical Issues in Ergonomic Sciences</i> , 7(4), 371-394. DOI: 10.1080/14639220500098821 Lintern, G. (2010). A Comparison of the Decision Ladder and the Recognition-Primed Decision Model. <i>Journal of Cognitive Engineering and Decision Making</i> , 4(4). pp. 304–327. DOI 10.1518/155534310X12895260748902.
5. Strategies Analysis	Interactive lecture, collaborative learning, guided discovery	Students will selectively consult the references: Hassal, M. E., & Sanderson, P. M. (2012). A formative approach to the strategies analysis phase of cognitive work analysis. <i>Theoretical Issues in Ergonomics Science</i> , 15(3), 215-261, DOI: 10.1080/1463922X.2012.725781 Cornelissen, M., McClure, R., Salmon, P. M., & Stanton, N. A. (2014). Validating the Strategies Analysis Diagram: Assessing the reliability and validity of a formative method. <i>Applied Ergonomics</i> , 45(6), pp. 1484 – 1494.

		http://dx.doi.org/10.1016/j.apergo.2014.04.010
6. Social Organisational and Cooperation Analysis	Interactive lecture, case study, guided discovery	<p>Students will selectively consult the references:</p> <p>Houghton, R. J., Baber, C., Stanton, N. A., Jenkins, D. P., & Revell, K. (2015). Combining network analysis with Cognitive Work Analysis: insights into social organisational and cooperation analysis. <i>Ergonomics</i>, 58(3), pp. 434-449, DOI: 10.1080/00140139.2014.966770</p> <p>E. Austin, B. Blakely, P. Salmon, J. Braithwaite & R. Clay-Williams (2021): The scope for adaptive capacity in Emergency Departments: Modelling performance constraints using Control Task Analysis and Social Organisational Cooperation Analysis, <i>Ergonomics</i>, DOI: 10.1080/00140139.2021.1992004</p>
7. Worker Competencies and Ecological Interface Design	Interactive lecture, collaborative learning, guided discovery, demonstrative example	<p>Students will selectively consult the references:</p> <p>Kilgore, R., & St-Cyr, O. (2006). The SRK inventory: A tool for structuring and capturing a worker competencies analysis. <i>Proceedings of the Human Factors and Ergonomics Society, 50th annual meeting</i>.</p> <p>Bennet, K. B. (2017). Ecological interface design and system safety: One facet of Rasmussen's legacy. <i>Applied Ergonomics</i>, 59, pp. 625-636</p> <p>Musam, J. (2023). The Challenges of Modern Economy on the Competencies of Knowledge Workers. <i>Journal of the Knowledge Economy</i>, 14, pp. 1635–1671. https://doi.org/10.1007/s13132-022-00979-y</p>
8. Case-studies & Applications	Interactive lecture, proving rationale, example, demonstration, guided discovery	Students will selectively consult the references:
9. Neuroergonomics: Physical and Cognitive work	Interactive lecture, example, demonstration, guided discovery	<p>Students will selectively consult the references:</p> <p>Parasuraman, R. (2003). Neuroergonomics: research and practice. <i>Theoretical Issues in Ergonomics Science</i>, 4(1-2), pp. 5-20.</p>

		Mehta, R. K., & Parasuraman, R. (2013). Neuroergonomics: A review of applications to physical and cognitive work. <i>Frontiers in Human Neuroscience</i> , 7.
10. Collective Performance in Socio-Technical Systems – Science-based guidance	Interactive lecture, collaborative learning, guided discovery, role play	Students will selectively consult the reference: Roberts, A. P. et al. (2022). State of science: models and methods for understanding and enhancing teams and teamwork in complex sociotechnical systems. <i>Ergonomics</i> , 65(2), 161-187, DOI: 10.1080/00140139.2021.2000043
11. Human Performance in Socio-Technical Systems	Interactive lecture, example, demonstration	Students will selectively consult the reference: Kyriakidis, M. et al. (2017). Understanding human performance in sociotechnical systems – Steps towards a generic framework. <i>Safety Science</i> , http://dx.doi.org/10.1016/j.ssci.2017.07.008
12. Work design and Wellbeing in sociotechnical systems	Interactive lecture, collaborative learning, guided discovery, simulation example, exercise	Students will selectively consult the reference: Parker, S. & Knight, C. (2024). The SMART model of work design: A higher order structure to help see the wood from the trees. <i>Human Resource Management. Advancing Human Resource Research and Practice</i> , 63(2), pp. 265 – 291, https://doi.org/10.1002/hrm.22200
13. Work design and attitudes in sociotechnical systems	Interactive lecture, collaborative learning, guided discovery	Students will selectively consult the reference: Chapter 9 from Conte, J.M. & Landy, F.J., (2019). <i>Work in the 21st century: An introduction to industrial and organizational psychology (6th Edition)</i> . Wiley.
14. Recapitulation		

References

- Aamodt, M. G. (2016). *Industrial/ Organizational Psychology: An applied approach (Eighth Edition)*. Boston, MA: Cengage Learning.
- Beier, M.E., Young, C.K., & Villado, A.J. (2018). Job knowledge: Its definition, development and measurement. In D. S. Ones, N. Anderson, C. Viswesvaran, & H. K. Sinangil (Eds.), *The SAGE Handbook of Industrial, Work and Organizational Psychology: Personnel Psychology and Employee Performance* (Chapter 10, pp. 279-298). Sage Publication Ltd. DOI: 10.4135/9781473914940.n11
- Campbell, J. P., & Wiernik, B.M. (2015). The modeling and assessment of work performance. *Annual Review of Organizational Psychology and Organizational Behavior*, 2, 47-74.
- Connelly, B.S., Ones, D.S., & Hülshager, U.R. (2018). Personality in Industrial, Work and Organizational Psychology: Theory, measurement and application. In D. S. Ones, N. Anderson, C. Viswesvaran, & H. K. Sinangil (Eds.), *The SAGE Handbook of Industrial, Work and Organizational Psychology: Personnel Psychology and Employee Performance* (Chapter 13, pp. 320-365). Sage Publication Ltd. DOI: 10.4135/9781473914940.n13
- Conte, J.M. & Landy, F.J. (2019). *Work in the 21st century. An introduction to industrial and organizational psychology (6th Edition)*. Hoboken: Wiley.

Hansen, J.-I. C. & Wiernik, B.M. (2018). Work preferences: Vocational interests and values. In D. S. Ones, N. Anderson, C. Viswesvaran, & H. K. Sinangil (Eds.), *The SAGE Handbook of Industrial, Work and Organizational Psychology: Personnel Psychology and Employee Performance* (Chapter 14, pp. 408-445). Sage Publication Ltd. DOI: 10.4135/9781473914940.n15

Harari, M.B. & Viswesvaran, C. (2018). Individual job performance. In D. S. Ones, N. Anderson, C. Viswesvaran, & H. K. Sinangil (Eds.), *The SAGE Handbook of Industrial, Work and Organizational Psychology: Personnel Psychology and Employee Performance* (Chapter 3, pp. 55-72). Sage Publication Ltd. DOI: [10.4135/9781473914940.n4](https://doi.org/10.4135/9781473914940.n4)

Wiernik, B. M., & Ones, D. S. (2018). Ethical employee behaviors in the consensus taxonomy of counterproductive work behaviors. *International Journal of Selection and Assessment*. DOI: 10.1111/ijsa.12199

Wilmot, M. P., Wanberg, C. R., Kammeyer-Mueller, J. D., & Ones, D. S. (2019, May 23). Extraversion Advantages at Work: A Quantitative Review and Synthesis of the Meta-Analytic Evidence. *Journal of Applied Psychology*. Advance online publication. <http://dx.doi.org/10.1037/apl0000415>.

Optional references:

Berry, J., & Gilbert, R. H. (2008). Using Roald Dahl's Charlie and the Chocolate Factory to teach different recruitment and selection paradigms. *Journal of Management*, 32(2), 228-247.

Y., Berry, C. M., & Gonzalez-Mulé, E. (2019). The importance of being humble: A meta-analysis and incremental validity analysis of the relationship between honesty-humility and job performance. *Journal of Applied Psychology*, 104(12), 1535– 1546. <https://doi.org/10.1037/apl0000421>

E., Kozlowski, S.W.J., Chen, G. (2017). A century of progress in Industrial and Organizational Psychology: Discoveries and the next century. *Journal of Applied Psychology*, 102(3), 589–598.

HH, Li N, Harris TB, Rosen CC, Zhang X. Informational advantages in social networks: The core-periphery divide in peer performance ratings. *J Appl Psychol*. 2020 Aug 27. doi: 10.1037/apl0000822. Epub ahead of print. PMID: 32852987.

www.onet.org
www.siop.org
www.eawop.com
www.apio.ro
www.copsi.ro

!!! Note:

From the references mentioned above, it is mandatory to read only the chapters related to the topics taught in the course and seminar to these papers will be added scientific papers provided by the course holder, depending on the specific study needs identified during the teaching activities.

8.2 Seminar / Laboratory	Teaching method	Remarks
1. Designing research in Socio-Technical Systems and Cognitive Work Analysis	Conceptual distinction, demonstrative example, guided discovery	Students will selectively consult the reference: Chapter 2 (Modules 2.1, 2.2, 2.3 & Module 2.4) - Methods and Statistics in I-O Psychology in Landy, F.J., Conte, J.M. (2013). <i>Work in the 21st century. An introduction to industrial and organizational psychology</i> (4th Edition). Maiden, MA: Blackwell Publishing.
2. Work Domain Analysis	Conceptual distinction, demonstrative example, guided discovery, collaborative learning	Students will read and analyse the articles provided at the course
3. Work Domain Models	Conceptual distinction, demonstrative example, guided discovery, collaborative learning	Students will read and analyse the articles provided at the course

4. Control Task Analysis	Conceptual distinction, demonstrative example, guided discovery, collaborative learning	Students will read and analyse the articles provided at the course
5. Strategies Analysis	Conceptual distinction, demonstrative example, guided discovery, collaborative learning	Students will read and analyse the articles provided at the course
6. Social organisational and cooperation analysis	Conceptual distinction, demonstrative example, guided discovery, collaborative learning	Students will read and analyse the articles provided at the course
7. Job performance – Conceptualization - Applications	Conceptual distinction, demonstrative example, guided discovery, collaborative learning	Students will read and analyse the articles provided at the course
8. Job performance – Assessment process - Applications	Conceptual distinction, demonstrative example, guided discovery, collaborative learning	Students will read and analyse the articles provided at the course
9. Job performance – Assessment process - Applications	Conceptual distinction, demonstrative example, guided discovery, collaborative learning	Students will read and analyse the articles provided at the course
10. Personnel recruitment - Applications	Conceptual distinction, demonstrative example, guided discovery, collaborative learning	Students will read and analyse the articles provided at the course
11. Personnel selection - Applications	Conceptual distinction, demonstrative example, guided discovery, collaborative learning	Students will read and analyse the articles provided at the course
12. Personnel selection - Applications	Conceptual distinction, demonstrative example, guided discovery, collaborative learning	Students will read and analyse the articles provided at the course

13. Assessment of decision techniques and decisions; Applicant reactions - Applications	Conceptual distinction, demonstrative example, guided discovery, collaborative learning	Students will read and analyse the articles provided at the course
14. Attitudes at work and recap	Conceptual distinction, demonstrative example, exercise	Students will read and analyse the articles provided at the course
<p>References</p> <p>modt, M. G. (2016). <i>Industrial/ Organizational Psychology: An applied approach (Eighth Edition)</i>. Boston, MA: Cengage Learning.</p> <p>ier, M.E., Young, C.K., & Villado, A.J. (2018). Job knowledge: Its definition, development and measurement. In D. S. Ones, N. Anderson, C. Viswesvaran, & H. K. Sinangil (Eds.), <i>The SAGE Handbook of Industrial, Work and Organizational Psychology: Personnel Psychology and Employee Performance</i> (Chapter 10, pp. 279-298). Sage Publication Ltd. DOI: 10.4135/9781473914940.n11</p> <p>mpbell, J. P., & Wiernik, B.M. (2015). The modeling and assessment of work performance. <i>Annual Review of Organizational Psychology and Organizational Behavior</i>, 2, 47-74.</p> <p>nnelly, B.S., Ones, D.S., & Hülshager, U.R. (2018). Personality in Industrial, Work and Organizational Psychology: Theory, measurement and application. In D. S. Ones, N. Anderson, C. Viswesvaran, & H. K. Sinangil (Eds.), <i>The SAGE Handbook of Industrial, Work and Organizational Psychology: Personnel Psychology and Employee Performance</i> (Chapter 13, pp. 320-365). Sage Publication Ltd. DOI: 10.4135/9781473914940.n13</p> <p>nte, J.M. & Landy, F.J. (2019). <i>Work in the 21st century. An introduction to industrial and organizational psychology</i> (6th Edition). Hoboken: Wiley.</p> <p>nsen, J.-I. C. & Wiernik, B.M. (2018). Work preferences: Vocational interests and values. In D. S. Ones, N. Anderson, C. Viswesvaran, & H. K. Sinangil (Eds.), <i>The SAGE Handbook of Industrial, Work and Organizational Psychology: Personnel Psychology and Employee Performance</i> (Chapter 14, pp. 408-445). Sage Publication Ltd. DOI: 10.4135/9781473914940.n15</p> <p>rari, M.B. & Viswesvaran, C. (2018). Individual job performance. In D. S. Ones, N. Anderson, C. Viswesvaran, & H. K. Sinangil (Eds.), <i>The SAGE Handbook of Industrial, Work and Organizational Psychology: Personnel Psychology and Employee Performance</i> (Chapter 3, pp. 55-72). Sage Publication Ltd. DOI: 10.4135/9781473914940.n4</p> <p>ernik, B. M., & Ones, D. S. (2018). Ethical employee behaviors in the consensus taxonomy of counterproductive work behaviors. <i>International Journal of Selection and Assessment</i>. DOI: 10.1111/ijsa.12199</p> <p>lmot, M. P., Wanberg, C. R., Kammeyer-Mueller, J. D., & Ones, D. S. (2019, May 23). Extraversion advantages at work: A quantitative review and synthesis of the meta-analytic evidence. <i>Journal of Applied Psychology</i>. Advance online publication. http://dx.doi.org/10.1037/apl0000415.</p> <p>Optional references:</p> <p>erry, J., & Gilbert, R. H. (2008). Using Roald Dahl's Charlie and the Chocolate Factory to teach different recruitment and selection paradigms. <i>Journal of Management</i>, 32(2), 228-247.</p> <p>Y., Berry, C. M., & Gonzalez-Mulé, E. (2019). The importance of being humble: A meta-analysis and incremental validity analysis of the relationship between honesty-humility and job performance. <i>Journal of Applied Psychology</i>, 104(12), 1535– 1546. https://doi.org/10.1037/apl0000421</p> <p>E., Kozlowski, S.W.J., Chen, G. (2017). A century of progress in Industrial and Organizational Psychology: Discoveries and the next century. <i>Journal of Applied Psychology</i>, 102(3), 589–598.</p> <p>HH, Li N, Harris TB, Rosen CC, Zhang X. Informational advantages in social networks: The core-periphery divide in peer performance ratings. <i>J Appl Psychol</i>. 2020 Aug 27. doi: 10.1037/apl0000822. Epub ahead of print. PMID: 32852987.</p>		



9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program

- The contents of the discipline are compatible with the recommendations of professional associations at the global level (Society for Industrial and Organizational Psychology, Division 14 of the American Psychological Association), European (European Association of Work and Organizational Psychology and EFPA) regarding the granting of the right to free practice in Work, Personal and Organizational Psychology

10. Evaluation

Activity type	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percentage of final grade
10.4 Course	The correctness and completeness of knowledge; The assimilation of the specialized language; logical coherence	Oral Exam	60%
10.5 Seminar/laboratory	The capacity to apply the concepts and theoretical models in a work context	Oral Exam	40%
10.6 Minimum standard of performance			
<ul style="list-style-type: none"> The level and accuracy of knowledge on the topics in the curriculum Acquiring the specialized language The logical coherence of oral expression regarding cognitive work analysis The cumulative score on all components of the oral examination should be at least 4.5 points 			

11. Labels ODD (Sustainable Development Goals)²

								
<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>		<i>Not applicable</i>
<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>

Date:
29.09.2025

Signature of course coordinator

Signature of seminar coordinator

² Keep only the labels that, according to the [Procedure for applying ODD labels in the academic process](#), suit the discipline and delete the others, including the general one for *Sustainable Development* – if not applicable. If no label describes the discipline, delete them all and write „*Not applicable.*”.

Date of approval:

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Signature of the head of department

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