Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
RUDN University

Faculty of Philology

educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

Data Journalism

course title

Recommended by the Didactic Council for the Education Field of:

42.04.02 Journalism

field of studies / speciality code and title

The course instruction is implemented within the professional education programme of higher education:

Global and Digital Media

higher education programme profile/specialisation title

1. OBJECTIVE OF THE DISCIPLINE

The goal of the discipline is to equip students with the skills and techniques necessary for the field of data journalism through the exploration of the process of obtaining, interpreting, visualizing and displaying data.

The main objectives are:

- providing the basics of data and data journalism, the history of the practice and its importance of it in today's world;
- teaching how to identify steps in the reporting process for using the right data in identifying, gathering, analysing, and exploring datasets in a basic news story and for an investigative story;
- developing skills of presenting data in appropriate visual formats such as tables, charts and maps.

2. REQUIREMENTS TO STUDENTS ON FINISHING THE COURSE

Students are expected to master the following competencies:

Table 2.1. The list of competencies formed in the mastering of the discipline (the results of the discipline)

Code	Competence	**Indicators of competence achievement** (within the discipline)
UC-1	Able to critically analyze problem situations on the basis of a systematic approach, to develop a strategy of action	UC-1.1 Knows types, methods, and concepts of critical analysis
		UC-1.2 Can apply types, methods, and concepts of critical analysis to develop a plan of action in problematic situations
		UC-1.3 Knows the basic principles that define the purpose and strategy for dealing with complex situations
GPC-7	Able to assess and predict the possible effects in the media sphere, following the principles of social responsibility	GPC-7.1 Knows the laws of social responsibility of forming the effects and consequences of professional activity, the concepts of its social responsibility
		GPC-7.2 Evaluates the correctness of creative techniques in gathering, processing, and disseminating information in accordance with generally accepted standards and rules of the journalistic profession
GPC-8	Able to use digital technologies and methods in professional activities to: study and model objects of professional activity, data analysis, presentation of information, etc.	GPC-8.1 Can analyze big data and incorporate it into the stages of the production process of a journalistic text and/or product
		GPC-8.2 Evaluates new editorial technologies

3. THE DISCIPLINE (MODULE) IN THE STRUCTURE OF EP HE

The discipline “Mobile journalism” belongs to the Part formed by participants of educational relations of Block 1 of the curriculum. Table 1 shows preceding and subsequent subjects aimed at forming competence discipline in accordance with the matrix of competencies.

Table 3.1. The list of components of the EP HE, contributing to the achievement of the planned results of the discipline

Code	Name of competence	Previous discipline	Subsequent disciplines
UC-1	Able to critically analyze problem situations on the basis of a systematic approach, to develop a strategy of action	Modern media systems / Современные медиасистемы Modern mass communication theories / Современные теории массовой коммуникации PR and media relations / PR и медиарилейшенз Methodology and methods of media research / Методология и методика медиаисследований Mass media sociology / Социология СМИ Image of a country / Имидж государства	Research practice / Научно-исследовательская практика
GPC-7	Able to assess and predict the possible effects in the media sphere, following the principles of social responsibility	Modern media text / Современный медиатекст PR and media relations / PR и медиарилейшенз	Research practice / Научно-исследовательская практика
GPC-8	Able to use digital technologies and methods in professional activities to: study and model objects of professional activity, data analysis, presentation of information, etc.	Mass media sociology / Социология СМИ	Research practice / Научно-исследовательская практика

4. THE SCOPE OF THE DISCIPLINE AND TYPES OF ACTIVITIES

The overall workload of the discipline is **5** credits.

Table 4.1. Types of educational work by periods of study of the EP HE for the full-time mode of study

Type of activity		TOTAL, ac. hours	Semester (s)			
			1	2	3	4
Classroom activities, ac. hours		34		34		
Including:						
Lectures		17		17		
Laboratory activities						
Practical lessons/Seminars		17		17		
Independent work, ac. hours		35		35		
Control, ac. hours		3		3		
Overall workload	ac. hours	72		72		
	credits	2		2		

5. CONTENT OF THE DISCIPLINE

Table 5.1 Content of the discipline (module) by type of activity

Name of the Unit	Content of the Units (topics)	Type of activity
Data Journalism	**Introduction to Data Journalism** 1. Understanding the role of data in journalism. 2. Historical context and evolution of data journalism. 3. Key skills and tools needed for data journalism. **Finding and Accessing Data** 4. Identifying credible data sources. 5. Using public databases and FOIA requests. 6. Evaluating the reliability and validity of data. **Data Cleaning and Preparation** 7. Techniques for cleaning messy data. 8. Tools for data cleaning: OpenRefine, Excel, Python libraries. 9. Handling missing or incomplete data.	Lecture
Data-Driven Storytelling	**Crafting a Narrative with Data** 10. Principles of storytelling in journalism. 11. Integrating data into a compelling narrative. 12. Case studies of successful data-driven stories. **Communicating Data Insights** 13. Techniques for effectively communicating data findings. 14. Writing clear and concise data-driven articles. 15. Using multimedia elements to enhance storytelling.	Lecture, Seminar
Structured Data	**Understanding Structured Data** 16. Definition and examples of structured data. 17. Differences between structured, semi-structured, and unstructured data. **Working with Databases** 18. Introduction to SQL and database management systems.	Lecture, Seminar

Name of the Unit	Content of the Units (topics)	Type of activity
	19. Performing basic SQL queries to extract data. 20. Best practices for managing and maintaining databases.	
Investigative Data Journalism	**Advanced Data Analysis Techniques** 21. Statistical methods for investigative journalism. 22. Case studies of data-driven investigations. **Data and Accountability** 23. Techniques for uncovering hidden information. 24. Ethical considerations in investigative data journalism. **Collaborative Investigative Projects** 25. Working with other journalists and organizations. 26. Successful examples of collaborative data journalism projects.	Lecture, Seminar
Visualization and data analysis	**Principles of Data Visualization** 27. Key principles of effective data visualization. 28. Common types of data visualizations and their uses. 29. Avoiding common pitfalls in data visualization. **Tools for Data Visualization** 30. Introduction to visualization tools: Tableau, Power BI, D3.js. 31. Hands-on practice creating visualizations. 32. Comparing strengths and weaknesses of different tools. **Interpreting and Presenting Visual Data** 33. Presenting visual data in a clear and engaging manner. 34. Case studies of impactful visual data presentations.	Lecture, Seminar
Mapping	**Introduction to Geographic Information Systems (GIS)** 35. Basics of GIS and its applications in journalism. 36. Overview of GIS tools: ArcGIS, QGIS. 37. Collecting and preparing spatial data. **Creating Interactive Maps** 38. Principles of effective map design. 39. Using tools like Mapbox and Leaflet to create interactive maps. 40. Best practices for integrating maps into journalistic content. **Analyzing Spatial Data** 41. Techniques for spatial data analysis.	Lecture, Seminar

Name of the Unit	Content of the Units (topics)	Type of activity
	42. Advanced mapping techniques: heatmaps, choropleth maps, and geocoding.	

6. MATERIAL AND TECHNICAL SUPPORT OF THE DISCIPLINE

The discipline is implemented using e-learning and distance learning technologies

Table 6.1. Material and technical support of the discipline

Type of classroom	Classroom equipment	Specialized educational/laboratory equipment, software and materials for the mastering of the discipline (if necessary)
Digital Classroom	A classroom is equipped with a computer, TV VCR and a transparency projector. CD players and DVD players are available upon request.	

** The classroom for students' independent work **MUST be indicated**!*

7. EDUCATIONAL AND METHODICAL AND INFORMATIONAL SUPPORT OF THE DISCIPLINE

Main readings

1. Bounegru, L., & Gray, J. (2021). The Data Journalism Handbook: Towards a Critical Data Practice (p. 415). Amsterdam University Press.
2. Gray J. (2012) The Data Journalism Handbook: How Journalists Can Use Data to Improve the News. O'Reilly Media. – 242 p.
3. Hermida, A., & Young, M. L. (2019). Data Journalism and the Regeneration of News. Routledge.

Other recommended readings

1. Bradshaw P. The Online Journalism Handbook: Skills to survive and thrive in the digital age (Longman Practical Journalism Series). Routledge: N.Y., 2011 – 224 p.
2. Anderson, C. W. (2018). Apostles of certainty: Data journalism and the politics of doubt. Oxford University Press
3. Ausserhofer, J., Gutounig, R., Oppermann, M., Matiasek, S., & Goldgruber, E. (2020). The datafication of data journalism scholarship: Focal points, methods, and research propositions for the investigation of data-intensive newswork. Journalism, 21,(7) 950–973. https://doi.org/10.1177/1464884917700667
4. Stray, J. The Curious Journalist's Guide to Data, 2016.
5. Howard, A. B. (2014). The art and science of data-driven journalism.
6. Mutsvairo, B., Bebawi, S., & Borges-Rey, E. (Eds.). (2020). Data journalism in the Global South. Springer Nature.

Web-sites and online resources

1. Data Visualisation. Mistakes We Made So You Don't Have To: Data Visualisation, Journalism and the Web by Jonathon Berlin// http://learno.net/courses/data-visualisation-journalism-and-the-web

Databases and search systems:

– Journalist's Toolbox. URL: https://www.journaliststoolbox.org/category/mobile-journalism/

Teaching materials for students' independent work while mastering the discipline/module:*

1. A course of lectures on the discipline.
2. Practical assignments and their brief contents;
3. Questions for self-check, test assignments.

* - all educational and methodical materials for students' independent work are published in accordance with the current order on the page of the discipline in TUIS!

8. GRADING MATERIALS AND GRADING-RATING SYSTEM FOR ASSESSING THE LEVEL OF COMPETENCE FORMED IN THE DISCIPLINE

The grading materials and grading-rating system* for assessing the level of competence (part of competences) for the discipline are presented in the Appendix to this Working program of the discipline.

* - are formed on the basis of the requirements of the corresponding local normative act of RUDN University.