APPROVED
Director of Utenos kolegija
Higher Education Institution
By order No. V-94 of 13 May 2024

# STRATEGY FOR STRENGTHENING APPLIED RESEARCH AND EXPERIMENTAL DEVELOPMENT OF UTENA HIGHER EDUCATION INSTITUTION FOR 2024-2029

The Strategy for Strengthening Applied Scientific Research and Experimental Development (hereinafter - R&D) of Utena Higher Education Institution (hereinafter – Utenos kolegija HEI) for 2024-2029 (hereinafter - the Strategy) has been prepared in accordance with the Law of the Republic of Lithuania (hereinafter - the Republic of Lithuania) on Science and Studies, the Action Plan of the Government of the Republic of Lithuania for Strengthening the Network of State Colleges for 2023-2024, approved by the Government of the Republic of Lithuania of January 18, 2023. Resolution No. 46, the Description of the Expert Evaluation of Applied Scientific Research and Experimental Development and/or Artistic Activities of Colleges, the Description of the Formal Evaluation of Scientific Research and Experimental Development, Artistic Activities of Colleges, the Description of the Formal Evaluation of Scientific Research and Experimental Development, Artistic Activities of Colleges, the Statute of Utenos kolegija HEI, the Strategic Activity Plan of Utenos kolegija HEI for 2022-2024, the Regulations on Scientific Activities of Utenos kolegija HEI, the Description of the Procedure for Accounting for the Workload of Utenos kolegija HEI Teachers and Research Staff, the Description of the Procedure for the Certification of Utenos kolegija HEI Teachers and Research Staff and the Organization of Competitions for Positions.

## I. SITUATION ANALYSIS

The second strategic goal of the Utenos kolegija HEI strategic activity plan for 2022-2024 is to develop applied scientific activities, research, and lifelong learning services relevant to the region and the country.

The study fields implemented at the Utenos kolegija HEI are thematically closely linked to the Utenos kolegija HEI's applied science activities, which are purposefully oriented towards relevant regional and national problems, the context of the professional field of specialists trained at the Utenos kolegija HEI. The Utenos kolegija HEI strengthens the connection between studies and scientific research by introducing innovations in teaching methods and new technologies, and by applying research results in specific study programs.

The Utenos kolegija HEI's researchers, teachers, and administration also perform other applied scientific work - organize scientific events, carry out publishing, give presentations at scientific conferences, involve students, Utenos kolegija HEI partners in scientific activities, etc. The Utenos kolegija HEI participates in R&D activities, consulting activities for the region and the country, developing project activities and providing non-formal education services. It can be stated that some indicators in 2023. increased significantly, such as - an increase in scientific publications (in 2022, - about 30, in 2023 - 60), contracts for research carried out in projects with foreign entities (in 2022 there were no such contracts, in 2023 - 4), participation in scientific events by giving presentations (in 2022 - 26, in 2023 - 30), funds earned for commissioned project-based scientific applied activities (in 2022 - 6526 EUR, in 2023 - 39,915 EUR). However, project-based activities of the R&D, publication of publications in high-ranking scientific journals, presentations at international conferences, public consultation, and student involvement in scientific activities need to be improved.

Taking into account the goals of the Government of the Republic of Lithuania to strengthen the applied research activities of colleges, the Utenos kolegija HEI's goal to achieve the level of applied research and experimental development provided for in the Law on Science and Studies of the Republic of Lithuania by 2029, and in order to strengthen ongoing studies, it is necessary to significantly increase the volume and quality of applied research and the publication of its results over the next 5 years.

## II. GOAL AND OBJECTIVES OF THE STRATEGY

The goal of the strategy is to strengthen the quality of the Utenos kolegija HEI's R&D so that by 2029 the R&D level required for colleges by the Law on Science and Studies of the Republic of Lithuania would be achieved in the fields of science conducted by the Utenos kolegija HEI.

## **Strategy objectives:**

- 1. To develop R&D and its dissemination by implementing project and other initiatives, cooperating with social partners, and solving problems relevant to the country and the region;
- 2. To develop the established international partnerships in the field of scientific research and development, increasing the internationality of scientific activities;
- 3. Carry out socially responsible scientific activity orders, consultations for national and regional entities, expand the scope of commissioned research, applied scientific work for financial reward, including student research; form the offer of R&D (research, ED works) and publish it on the website and social networks;
  - 4. Increase the number of scientific publications in high-ranking scientific journals and other scientific publications;
  - 5. To attract funds for the implementation of R&D from companies, LMT-coordinated and international scientific programs;

- 6. To activate the participation of teachers and researchers working in all fields of study in the activities of international and national associations related to scientific activities, to activate involvement in international networks; to appoint responsible persons to coordinate the activities of the Utenos kolegija HEI in association and network initiatives;
- 7. To activate the activities of the R&D by strengthening existing and forming new research groups, involving researchers and lecturers from foreign partner institutions;
  - 8. Involve students in R&D activities;
  - 9. To develop the scientific competence of teachers, researchers, and students.

#### III. IMPLEMENTATION OF THE STRATEGY

- 10. The strategy is implemented by planning, implementing and evaluating the activities of the R&D at the levels of the institution, faculty, department, lecturer and researcher.
- 11. Responsible for the implementation of the strategy are: lecturers, researchers, departments, faculties, Project Management, International Relations departments.
- 12. Lecturers, researchers, departments, faculties, Project Management, International Relations departments implement the Strategy as follows:
  - 12.1. annually plans the R&D by preparing annual activity programs and includes the measures provided for in this strategy;
- 12.2. implements the measures provided for in the activity programs and discusses the implementation of the Strategy at the department, faculty, and Utenos kolegija HEI levels at least twice a year;
- 12.3. prepares annual activity reports, which present and analyze the results of the implemented R&D activities and the achievement of the indicators provided for in the Strategy;
  - 12.4. The results of the implementation of the strategy are included in the Utenos kolegija HEI's annual activity report;
- 12.5. The Strategy is reviewed at least once a year and, if necessary, adjusted. New versions of the Strategy are formalized by order of the Director of the Utenos kolegija HEI;
- 12.6. The Deputy Director for Studies and Research is responsible for coordinating and monitoring the implementation of the Strategy at the Utenos kolegija HEI level, at the faculty level the Dean of the Faculty, at the department level the Head of the Department, and at the research group level the Group Leader/Coordinator.
- 13. The R&D activity of a professor, associate professor, assistant, junior assistant, senior lecturer, head, senior research worker, researcher, and the publication and dissemination of the results of this activity are mandatory. It is recommended that R&D activity, the publication and

dissemination of the results of this activity constitute at least 33 percent. of the total workload of a professor, associate professor, assistant, junior assistant, senior lecturer, and at least 25 percent. of the total workload of a lecturer.

- 14. The activities of the R&D are carried out by research groups or individual researchers approved by order of the dean of the faculty. These groups are encouraged to include in their activities researchers who are just starting out and motivated students interested in scientific activities.
  - 15. Research groups are led by leaders/coordinators, who are usually scientists or lecturers or researchers with research experience.
- 16. The leader/coordinator of the research group forms guidelines for activities in a specific scientific field and organizes the group's activities.
  - 17. Research groups may join with other groups and carry out interdisciplinary R&D work.

## IV. CRITERIA FOR EVALUATING THE IMPLEMENTATION OF THE STRATEGY

- 18. The implementation of the goal and objectives of the Strategy is assessed according to the following criteria:
- 18.1. number of published scientific publications (scientific papers);
- 18.2. funds earned in commissioned, project-based (international programs, corporate orders, other orders) activities <sup>1</sup>in EUR;
- 18.3. organization of scientific events;
- 18.4. presentations at scientific events;
- 18.5. improving the scientific competences of teachers and researchers;
- 18.6. involving students in scientific activities and improving scientific competences;
- 18.7. organization of lifelong learning activities for the public (organization of additional competences, qualification improvement events, other educational activities for the public, provision of consultations for the public number of participants, funds earned (Eur.);

## VI. INDICATORS OF ACHIEVEMENT OF STRATEGIC GOALS AND OBJECTIVES FOR 2024-2029

<sup>&</sup>lt;sup>1</sup> Outsourced project activities are the execution of R&D orders of economic entities. The formal description of the evaluation of scientific research and experimental development, artistic activities of colleges, approved by the Order of the Minister of Education, Science and Sports of the Republic of Lithuania of March 6, 2024 No. V-265, paragraph 4.29.

Field of research	Field of research, Thematic areas	Research group	Target indicators 2024-2029.						
	Thematic areas	leaders	2024	2025	2026	2027	2028	2029	
			Scientific pa	pers, publications, R&D	projects, orders				
Business and Public Management L00 Management L02 Business L01 Accounting L04 Tourism and recreation L08	Social sciences S 000 Management S 003 Economy S 004 Thematic area: Business environment research	Dr. R. Meištė Dr. J. Daubarienė Dr. S. Jakštienė Dr. R. Narkūnienė Dr. V.Bartkutė - Norkūnienė	Publications: 17 publications (7 doctors of science; 10 other lecturers), 5 of which are in high-ranking publications 2.  Reports: 15, including: 10 national conf., 5 international conf.;  Student reports: 10	Publications: 30 publications (10 doctors of science; 20 other lecturers), 10 of them in high-ranking publications.  Reports: 20, including: 10 national . conf., 10 international . conf .;  Student reports: 15  Corporate R&D orders/Competitive (design) R&D projects **; 1 per research group.	Publications; 30 publications (10 doctors of science; 20 other lecturers), 10 of which are in high-ranking publications.  Reports: 20, including: 10 national . conf ., 10, int. conf .;  Students Messages: 15  Corporate R&D orders/Competitive (design) R&D projects **; 2 per research group	Publications: 30 publications (10 doctors of science; 20 other lecturers), 10 of which are in high-ranking publications.  Reports: 20, including: 10 national . conf ., 10, int. conf .;  Student reports: 15  Corporate R&D orders/Competitive (design) R&D projects **; 2 per research group	Publications: 30 publications (10 doctors of science; 20 other lecturers), 10 of which are in high-ranking publications.  Reports: 20, including: 10 national . conf ., 10, int. conf .;  Student reports: 15  Corporate R&D orders/Competitive (design) R&D projects **; 3 per research group	Publications: 30 publications (10 doctors of science; 20 other lecturers), 10 of which are in high-ranking publications.  Reports: 20, of which: 10 national . conf 10, int. conf .;  Student reports: 15  Corporate R&D orders/Competitive (design) R&D projects **; 3 per research group	
<b>Law K00</b> Law K01	Social sciences S 000 Law S 001  Thematic direction: Legislative and practical application issues	Dr. D. Petrėnaitė Dr. R. Jurka	Publications: 5 publications (2 doctors of science; 3 other lecturers), 2 of which are in high-ranking publications. Papers: 3rd int. conf. Student reports: 2	Publications: 6 publications (3 doctors of science; 3 other lecturers), 3 of them in high-ranking publications.  Papers: 3rd int. conf .  Student reports: 3	Publications: 7 publications (4 doctors of science; 3 other lecturers), 4 of which are in high-ranking publications. Papers: 3rd int. conf. Students messages: 3	Publications: 8 publications (5 doctors of science; 3 other lecturers), 5 of which are in high-ranking publications. Papers: 3rd int. conf. Student reports: 4	Publications: 8 publications (5 doctors of science; 3 other lecturers), 5 of which are in high-ranking publications. Papers: 3rd int. conf . Student reports: 4	Publications: 8 publications (5 doctors of science; 3 other lecturers), 5 of which are in highranking publications. Papers: 3rd int. conf . Student reports: 4	



Social sciences J00 Social work J04	Social sciences S 000 Sociology S 005 Educology S 007 Thematic direction: Social work problems	Dr.V.Bartuševičienė Dr. E. Budrytė E. Vaitiekus Z. Kuprėnaitė	Publications: 8 publications (2 doctors of science; 6 other lecturers), 2 of which are in high-ranking publications.  Reports: 6, including: 4 national . conf ., 2 international . conf .;  Student reports: 6	Publications: 10 publications (3 doctors of science; 7 other lecturers), 3 of which are in high-ranking publications.  Reports: 8, including: 5 national . conf ., 3 international . conf .;  Student reports: 8	Publications: 12 publications (4 doctors of science; 8 other lecturers), 4 of which are in high- ranking publications.  Reports: 8, including: 5 national . conf ., 3 international . conf .;  Students Messages: 10	Publications: 14 publications (5 doctors of science; 9 other lecturers), 4 of which are in high-ranking publications.  Reports: 10, including: 6 national . conf ., 4 international . conf .;  Student reports: 12	Publications: 16 publications (6 doctors of science; 10 other lecturers), 4 of which are in high-ranking publications.  Reports: 10, including: 6 national . conf ., 4 international . conf .;  Student reports: 12	Publications: 18 publications (7 doctors of science; 11 other lecturers), 4 of which are in high-ranking publications.  Reports: 10, including: 6 national conf., 4 international conf.;  Student report i: 12
Health Sciences G00 Nursing and midwifery G08	Medical and health sciences M 000 Nursing M 005 Medicine M 001  Thematic direction: Nursing practice research (evidence-based nursing practice, healthy aging)	Dr. D. Kriukelytė Dr. Ž.Valiulienė Dr. A. Beiša D.Šakalytė	Publications: 15 publications (3 doctors of science; 12 other lecturers), 5 of which are in high- ranking publications.  Reports: 15, including: 10 national . conf ., 5 international . conf .;  Student reports: 10	Publications: 17 publications (4 doctors of science; 13 other lecturers), 6 of which are in high-ranking publications.  Reports: 20, including: 10 national . conf ., 10 international . conf .;  Student reports: 15	Publications: 20 publications (5 doctors of science; 15 other lecturers), 8 of which are in high- ranking publications.  Reports: 20, including: 10 national . conf., 10 international . conf.;  Students Messages: 15	Publications: 25 publications (6 doctors of science; 19 other lecturers), 9 of which are in high- ranking publications.  Reports: 20, including: 10 national . conf ., 10 international . conf .;  Student reports: 15	Publications: 25 publications (6 doctors of science; 19 other lecturers), 9 of which are in high-ranking publications.  Reports: 20, including: 10 national . conf ., 10 international . conf .;  Student reports: 15	Publications: 25 publications (6 doctors of science; 19 other lecturers), 9 of which are in high- ranking publications.  Reports: 20, including: 10 national . conf., 10 international . conf.;  Student reports: 15
Health Sciences G00 Oral care G03	Medical and health sciences M 000 Dentistry M 002 Public Health M 004  Thematic areas: Oral health research (prophylaxis, technologies, material compatibility); Dental restoration issues (comparison of technology and materials)	A. Šulskienė A.Stoškienė	Publications: 12 publications, 2 of which are in high- ranking publications.  Reports: 8, including: 5 national . conf., 3 international . conf.;  Student reports: 6	Publications: 16 publications , including 3 in high- ranking publications.  Reports: 12, including: 7 national . conf ., 5 international . conf .;  Student reports: 10	Publications: 18 publications , including 3 in high- ranking publications.  Reports: 16, including: 10 national conf . , 6 international conf .;  Students messages: 14	Publications: 20 publications, including 3 in high- ranking publications.  Reports: 20, including: 12 national conf., 8 international conf.;  Student reports: 14	Publications: 22 publications, including 3 in high- ranking publications.  Reports: 20, including: 10 national . conf ., 10 international . conf .;  Student reports: 14	Publications: 24 publications, including 3 in high-ranking publications.  Reports: 20, including: 10 national . conf ., 10 international . conf .;  Student reports: 14

Health Sciences G00 Rehabilitation G06	Medical and health sciences M 000 Medicine M 001 Nursing M 005 Public Health M 004  Thematic direction: Problems of human physical activity and their solutions (recommendations on health issues)	Dr. G. Šustickas V. Kerulienė E. Rekus A. Tilindis	Publications: 5 publications (1 Doctor of Science; 4 other lecturers), 2 of which are in high- ranking publications.  Reports: 3, including: 2 national . conf., 1 international . conf.;  Student reports: 4	Publications: 6 publications (1 Doctor of Science; 5 other lecturers), 3 of which are in high- ranking publications.  Reports: 6, including: 4 national . conf ., 2 international . conf .;  Student reports: 6	Publications: 7 publications (1 Doctor of Science; 6 other lecturers), 3 of which are in high- ranking publications.  Reports: 8, including: 5 national . conf ., 3 international . conf .;  Students message i:8	Publications: 8 publications (1 Doctor of Science; 7 other lecturers), 3 of which are in high- ranking publications.  Reports: 8, including: 5 national. conf., 3 international. conf.;  Student reports: 10	Publications: 8 publications (1 Doctor of Science; 7 other lecturers), 3 of which are in high- ranking publications.  Reports: 8, including: 5 national . conf., 3 international . conf.;  Student reports: 10	Publications: 8 publications (1 Doctor of Science; 7 other lecturers), 3 of which are in high- ranking publications.  Reports: 8, including: 5 national . conf ., 3 international . conf .;  Student reports: 10
Health Sciences G00 Cosmetology G10	Medical and health sciences M 000 Medicine M 001  Thematic direction: cosmetology procedures and products	Research group Dr. I. Audzevičiūtė Liutkiene Dr. V.Bartuševičienė L.Macijauskienė R. Malakauskienė E. Pernaviene J.Prakapavičienė	Publications: 5 publications (2 doctors of science; 3 other lecturers), 2 of which are in high-ranking publications.  Reports: 4, including: 2 national . conf ., 2 international . conf .;  Student reports: 4	Publications: 6 publications (2 doctors of science; 4 other lecturers), 3 of which are in high- ranking publications.  Reports: 8, including: 5 national. conf., 3 international. conf.;  Student reports: 6	Publications: 7 publications (2 doctors of science; 5 other lecturers), 3 of which are in high- ranking publications.  Reports: 8, including: 5 national. conf., 3 international. conf.;  Students Messages: 8	Publications: 8 publications (2 doctors of science; 6 other lecturers), 3 of which are in high-ranking publications.  Reports: 10, including: 6 national . conf ., 4 international . conf .;  Student reports: 8	Publications: 8 publications (2 doctors of science; 6 other lecturers), 3 of which are in high-ranking publications.  Reports: 10, including: 6 national . conf ., 4 international . conf .;  Student reports: 8	Publications: 8 publications (2 doctors of science; 6 other lecturers), 3 of which are in high- ranking publications.  Reports: 10, including: 6 national . conf ., 4 international . conf .;  Student reports: 8
Engineering Sciences E00 Environmental Engineering E03	Natural Sciences N 000 Ecology and Environmental Studies N 012 Technological Sciences T 000 Environmental Engineering T 004  Thematic direction: Research on environmental issues	Dr. I. Jakštonienė Dr. I. Pliopaitė Bataitiene	Publications: 3 publications (1 doctor of science; 2 other lecturers), 1 of which in high-ranking publications.  Papers: 3rd int. conf . 3;  Student reports: 2	Publications: 4 publications (2 doctors of science; 2 other lecturers), 2 of which are in high-ranking publications.  Papers: 3rd int. conf .;  Student reports: 3  Corporate R&D	Publications: 4 publications (2 doctors of science; 2 other lecturers), 2 of which are in high-ranking publications.  Papers: 3rd int. conf .;  Students messages: 3	Publications: 4 publications (2 doctors of science; 2 other lecturers), 2 of which are in high- ranking publications.  Papers: 3rd int. conf .; Student reports: 3 Corporate R&D	Publications: 4 publications (2 doctors of science; 2 other lecturers), 2 of which are in high-ranking publications.  Papers: 3rd int. conf.;  Student reports: 3  Corporate R&D	Publications: 4 publications (2 doctors of science; 2 other lecturers), 2 of which are in high-ranking publications.  Papers: 3rd int. conf .;  Student reports: 3  Corporate R&D

Technological sciences F00 Food Technology F06	Technological Sciences T 000 Chemical Engineering T 005 Natural Sciences N 000 Chemistry N 003 Biochemistry N 004  Thematic direction: Food production and quality	Dr. I. Jakštonienė G. Stasiulionienė		orders/Competitive (design) R&D projects **; 1 per research group.	Corporate R&D orders/Competitive (design) R&D projects **; 1 per research group.	orders/Competitive (design) R&D projects **; 1 per research group.	orders/Competitive (design) R&D projects **; 1 per research group.	orders/Competitive (design) R&D projects **; 1 per research group.
Agricultural Sciences I00 Agricultural Sciences I01	Agricultural Sciences A 000 Agronomy A001 Forestry A004  Thematic direction: Agri-environmental protection and landscape improvement	Dr. I. Jakštonienė Ivanauskiene D						
Engineering Sciences E00 Electronic Engineering E09	Technological Sciences T 000 Electrical and Electronic Engineering T 001 Computer Science Engineering T 007  Thematic direction: Industrial automation Measurement engineering	Dr. V. Bartkutė- Norkūnienė Dr. L. Kairiūkštis Dr. G. Dervinis	Publications: 8 publications (4 doctors of science; 4 other lecturers), 4 of which are in high-ranking publications.  Papers: 6th int. conf .  Student reports: 6	Publications: 10 publications (6 doctors of science; 4 other lecturers), 6 of which are in high-ranking publications.  Papers: 6th int. conf .;  Student reports: 6	Publications: 10 publications (6 doctors of science; 4 other lecturers), 6 of which are in high-ranking publications.  Papers: 6th int. conf .;  Student reports: 6	Publications: 10 publications (6 doctors of science; 4 other lecturers), 6 of which are in high-ranking publications.  Papers: 6th int. conf .;  Student reports: 6	Publications: 10 publications (6 doctors of science; 4 other lecturers), 6 of which are in highranking publications.  Papers: 6th int. conf .;  Student reports: 6	Publications: 10 publications (6 doctors of science; 4 other lecturers), 6 of which are in high-ranking publications.  Papers: 6th int. conf .;  Student reports: 6

Computer Science B00 Computer Engineering B04	Technological Sciences T 000 Computer Science Engineering T 007 Natural Sciences N 000 Informatics N 009  Thematic direction: IT application and innovation	Dr. J. Urbonienė Dr. V. Bartkutė- Norkūnienė Dr. L. Kairiūkštis		Corporate R&D orders/Competitive (design) R&D projects **; 1 per research group.	Corporate R&D orders/Competitive (design) R&D projects **; 1 per research group.	Corporate R&D orders/Competitive (design) R&D projects **; 1 per research group.	Corporate R&D orders/Competitive (design) R&D projects **; 1 per research group.	Corporate R&D orders/Competitive (design) R&D projects **; 1 per research group.
Technological sciences F00 Polymer and Textile Technologies F02	Technological Sciences T 000 Chemical Engineering T 005 Materials Engineering T 008  Thematic direction: Issues related to the development of clothing production technologies	I. Breitmoser						
				Scientific events				
Event name		Responsible persons, departments	Estimated event time	3				
International Scient Conference "Aspect Development: Theo	ts of Sustainable	VTF	2024 H1 .		2026 H1 .		2028 H1 .	
International Scientific-Practical Conference "Evidence-Based Practice: From Health to Social Well-Being"		MF	2024 H1 .		2026 H1 .		2028 H1 .	
International Studer Conference "A Cou Good"	nt Scientific Practical ntry Where Life is	VTF		2025 H1 .		2027. First half .		2029 H1 .

Republican Scientific Practical Conference "Realities, Challenges and Trends in Social Work" .	MF	2024 H1 .	2025 H1	2026 H1	2027 H1	2028 H1	2029 H1
		Improving the sci	entific competences of	teachers and researcher	rs		
Research ethics	Deputy Director for Studies and Research		2025 H1		2027 First half of the year		2029 First half of the year
Quantitative and qualitative data analysis methods and their application	VTF		2025 H1		2027 First half of the year		2029 First half of the year
Preparation and registration of scientific publications	Deputy Director for Studies and Research, Library	2nd half of 2024		2nd half of 2026		2nd half of 2028	
International scientific programs; preparation of R&D projects	Project Management Department International Relations Department	2nd half of 2024		2nd half of 2026		2nd half of 2028	
		Impro	ving students' scientific	competences			
Finding information sources	Library	2nd half of 2024	2nd half of 2025	2nd half of 2026	2nd half of 2027	2nd half of 2028	2nd half of 2029
Ethics of applied scientific research	Deputy Director for Studies and Research		2025 H1		2027 First half of the year		2029 First half of the year
Academic writing	Deputy Director for Studies and Research	2nd half of 2024	2nd half of 2025	2nd half of 2026	2nd half of 2027	2nd half of 2028	2nd half of 2029
Quantitative and qualitative data analysis methods and their application	VTF	2024 H1	2025 H1	2026 H1	2027 First half of the year	2028 First half of the year	2029 H1
		Organizing	g lifelong learning activ	ities for the public			

Events for the public (entrepreneurship, environmental, healthy lifestyle, etc. events (pcs.))	MF VTF Project Management Department	10	10	10	10	10	10
Professional competence development events (pcs.)	Project Management Department	40	40	40	45	45	45