



## FORMS AND MEANS OF PROVIDING RESOURCES TO TEACHERS THROUGH THE INFORMATION SYSTEM

Zakirova Feruza Makhmudovna,

DSc, Professor, Tashkent University of Information Technologies named after Muhammad Al-Khwarizmi,  
Tel: +998909822314

Abdullaeva Ozoda Safibullaevna

PhD, Professor of Namangan Engineering-Construction Institute,  
E-mail: [aspirantka.030@gmail.com](mailto:aspirantka.030@gmail.com), Tel: +998913549363

**Abstract:** This article provides formulated information about the design and implementation of the information system, the software product "Information system for personnel management of the department - (e-pedagog.uz)" was obtained, which allows automating the activities of the department of a higher educational institution. The software was fully tested in accordance with the program and test methodology. During testing, a number of errors regarding the correctness of calculations were identified and corrected. The check showed the operability of the system on all declared operating systems, as well as on various hardware platforms in the automation of the work of the department, namely the automation of the management processes of the department. The task of automation is the electronic recording of the individual plans of teachers of a higher educational institution is a key point in the analysis of the work of the entire higher educational institution as a whole. Automation of the process of fulfilling the teaching load by the teacher and filling out an individual plan: will allow you to calculate the theoretical and practical number of hours worked by the teacher automatically; will reduce the chance of error; control the publication activity of teachers of the department.

[Zakirova Feruza Makhmudovna. **FORMS AND MEANS OF PROVIDING RESOURCES TO TEACHERS THROUGH THE INFORMATION SYSTEM**. Nat Sci 2023, 21(3):76-81]. ISSN 1545-0740 (print); ISSN 2375-7167 (online). <http://www.sciencepub.net/nature> 07.doi:[10.7537/marsnsj210323.07](https://doi.org/10.7537/marsnsj210323.07).

**Key words:** information system, design, algorithms, models, management system.

### 1. Introduction

Nowadays, technology is developing rapidly in all areas. This applies to both everyday life and education. The management processes of higher educational institutions in modern conditions are unrealistic without a comprehensive automation of its activities. A higher educational institution is a complex organizational system consisting of an interconnected set of subsystems (types of activity) - educational, scientific, managerial, economic, economic, advertising, considered as objects of management. Therefore, the number of information systems that are used to manage a higher educational institution is currently growing.

Most of these systems are a collection of individual modules: the base of subjects, the educational process, training sessions, exams, the scientific process, messages, system. Information systems include both commercial systems and internal use systems of the organization. An analysis of the available information systems has shown that many of them are designed to facilitate human work.

In this regard, there was a need to automate the work of the department, namely the automation of the management processes of the department. The task of automating the electronic recording of individual plans of teachers of a higher educational institution is a key point in the analysis of the work of all higher educational institutions as a whole. Automation of the process of fulfilling the teaching load by the teacher and filling out an individual plan: will allow you to calculate the theoretical and practical number of hours worked by the teacher automatically; will reduce the chance of error; control the publication activity of teachers of the department.

Designing and developing an information system for the formation and accounting of an individual teacher's plan is an urgent task for higher educational institutions. This is evidenced by numerous works reviewed in this study.

### 2. Material and Methods

The purpose of this work is to automate the process of forming and accounting for an individual

teacher's plan by developing an information system using the example of the Department of Information Technology in Technical Systems of the Namangan Civil Engineering Institute.

Based on the analysis of the requirements for the creation of the author's system called "Information system for personnel management of the department", the following requirements for the development of an information product were identified:

- the system should provide the ability to enter and store structured information;
- the ability to edit, change and supplement information;
- differentiation of access rights to the system (rector, dean, head of department, lecturer);
- organized storage and automated output for viewing individual plans of teachers and reports on them;
- the ability to quickly and conveniently obtain any necessary statistical information on the selected teacher, the chosen area of work;
- the possibility of automated compilation and printing of individual plans for teachers and reports on them according to a given template.

Based on the requirements for the system, the following were identified as its main functional subsystems: system administration; systems of individual users (deans, heads of departments); faculty administration system. The modular structure of the system administration.

To work in the system of individual users "Dean of the Faculty", it is necessary to fill in the "Users" menu, this option is available only for users with the "System Administrator" type. To do this, the system administrator performs an initial login to the system using the authorization form (Fig. 1).

After that, by default, the main page is displayed with the appropriate privileges necessary to perform the initial input of user information, in this case, information about the deans of the faculty, as well as setting a login and password for these users. However, after completing the settings, it is better to change it to prevent a violation of the information system. So, the main page of the administrator contains the following tabs: "Users", "Faculties", "Office", "Academic years", "Exit". Adding users is done by clicking on the "Add" button on the "Users" tab. When adding a new user, the system automatically issues an ID number to the entered user. Figure 2 shows the form for filling in the user's data, in this case, information about the deans of the faculty.

Further, the dean user similarly logs into the system using the login and password given to him by the system administrator. The main page of the administrator contains the following tabs: "Users", "Account", "Statistics of teachers of the department", "Exit". As an administrator in the role of "Dean", the

data is entered and the login and password are issued to the head of the department of this faculty. Similarly, the head of the department carries out actions applicable to the faculty of the department (Fig. 2). Users "Dean", "Head of the department", as well as "Teacher" enter personal data into the system by clicking on the "Edit" button and filling in the necessary information: first name, last name, patronymic, term of employment, date and place of birth, nationality, education, specialty by education, academic degree, academic title, knowledge of foreign languages, state awards. This form also contains an entry for filling in work activity, which takes into account the addition of subsequent work activity records by clicking on the "Add" button. After entering personal information, you must click on the "Save" button (Fig.3).

The administration system of the teaching staff is designed to take into account general and personal information about the teachers of the department, plan work according to the individual plan of the teacher for the upcoming academic period, as well as record the implementation of various types of work according to the plan.

To go and launch the main page "Teacher", you must enter using the login and password that was provided to them by the head of the department.

The main page "Teacher" contains the tabs: "Educational work", "Educational and methodical work", "Research work", "Organizational and methodological work", "Spiritual, moral and educational work", "Cabinet", "Exit".

The "Study work" tab contains the "Add" button for entering the study load, "Study periods", "Types of semesters (autumn, spring)", a table for filling in the study load by teachers according to the plan (subject name, additional information, study work (lecture, practice, laboratory classes, term paper, thesis, scientific research management), as well as accounting for work performed, unscheduled work and incentive points, crediting fines). To fill in the entries, you must click on the "Add" button.

Имя пользователя\*

admin

Пароль\*

admin3452

Подтвердить

Fig.1. Authorization form

CRM

Пользователи

ID	Имя	Фамилия	Имя пользователя
27	Иван	Иванов	ivanov
28	Александр	Сидоров	sidorov
29	Сергей	Петров	petrov

Имя\*

Фамилия\*

Отчество\*

Имя пользователя\*

Пароль\*

Подтвердите пароль\*

Сохранить

Fig.2. Form for entering user information and setting a password, as a system administrator

Научно-исследовательская работа

2022-2023

ID	Наименование выполненной работы	Срок По плану:	Зачеты по выполненной работе		Объем работы		Набранные баллы	
			Выполнено:	Республиканские	Зарубежные	По плану:		Выполнено:
6	Научная статья ГАК	29/07/2022	-	0	0	150	-	30
Всего						150	0	30
Внеплановая работа:								0
Штрафы:								0

Имя\*

Фамилия\*

Отчество\*

Имя пользователя\*

Срок принятия на работу:\*

Дата рождения:\*

Место рождения:\*

Национальность:\*

Образование:\*

Окончил(а):\*

Специальность по образованию:\*

Ученая степень:\*

Ученое звание:\*

Какими иностранными языками владеет:\*

Имеет ли правительственные-государственные награды:\*

Fig.3. Form for filling in personal data of users

The “Research work” tab contains the “Add” button for introducing a research plan by the teacher based on the types of activities and time standards (for example: preparation and publication of a scientific article, dissertation, invention (patent), creation of software tools; publication of monographs, preparation of information and analytical materials, creation of creative works; publishing a catalog of personal (thematic) creative works, creating new projects; editing textbooks, monographs and teaching aids; conducting research work on a topic approved by the university council; writing reviews of textbooks, teaching aids, monographs, brochures, scientific articles, dissertations,

abstracts and other works; preparation and defense of a dissertation for the degree of Doctor of Philosophy (PhD), Doctor of Science (DSc); membership in the editorial board of scientific journals; management of research and scientific and creative work students; organization of scientific or methodological conferences and seminars; participation in scientific or methodological councils, etc.). It contains "Study periods", as well as a "Table" for teachers to fill in (name of the work performed, the term and completion of work according to the plan, the amount of work according to the plan and their implementation, points scored, as well as unscheduled work and incentive points, crediting fines). To fill in the entries, click on the "Add" button. It turns out that the following form, in which you need to enter the name of the planned work, the deadline and the amount of hours (Fig.4).

Научно-исследовательская работа

2022-2023

ID	Наименование выполненной работы	Срок По плану:	Зачеты по выполненной работе		Объем работы		Набранные баллы	
			Выполнено:	Республиканские	Зарубежные	По плану:		Выполнено:
6	Научная статья ГАК	29/07/2022	-	0	0	150	-	30
Всего						150	0	30
Внеплановая работа:								0
Штрафы:								0

Название\*

Учебный год\*

Зарубежные\*

Республиканские\*

По плану:

Срок\*

Объем работы\*

Сохранить

Fig.4. Form for entering research papers of a teacher

The “Organizational and methodological work”, “Spiritual, moral and educational work” tabs contain the “Add” button for introducing a plan for these types of work (for example: helping a student go through the process of adapting to new conditions when entering a university and correctly allocating his time in period of stay at the university; holding meetings to develop the

student's personal and academic achievements; forming an understanding of the importance of the impact of grades and knowledge gained by students on their qualification level; working with students' parents; monitoring the work of graduates; conducting career guidance for students for admission to higher educational institutions; preparing students to receive state scholarships, international and republican Olympiads, competitions, organization and holding of sports, cultural, educational and creative events, etc.). It contains "Study periods", as well as a "Table" for teachers to fill in (name of work performed, deadline and completion of work according to the plan, scope of work according to the plan and their implementation, venue, points scored, as well as unscheduled work and incentive points, enrollment fines). To fill in the entries, click on the "Add" button. The following form appears, in which it is necessary to enter the name of the planned work, the deadline and the amount of hours (Fig.5).

Организационно-методическая работа (Работа преподавателя-ученика)

+ Добавить

2022-2023

ID	Наименование выполняемой работы	Срок		Место проведения	Объем работы		Набранные баллы
		По плану	Выполнено		По плану	Выполнено	
Список пуст							
Всего					0	0	0
Выполненная работа:							0
Штрафы:							0

Название\*

Учебный год\* 2022-2023

Место проведения\*

По плану:

Срок\* 1

Объем работы\* 0

July 2022

Su	Mo	Tu	We	Th	Fr	Sa
26	27	28	29	30	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6

Fig.5. Form of input of organizational-methodical, spiritual-moral and educational work by the teacher

### 3. Result

To develop a rating system, legal and regulatory documents were analyzed, as well as rating systems in higher educational institutions. In developing the assessment system, we identified the following patterns:

- Both positive (for unscheduled work) and negative points (penalties) are allowed;
- When evaluating individual indicators, the position, academic degree of the teacher (head of the department, professor, associate professor, senior lecturer, assistant) was taken into account;
- assessment is taken into account in units of measurement - points;
- indicators of evaluation of the teacher's activity - educational work, educational and methodological work, research work, organizational and methodological work, spiritual, moral and educational work. For each indicator, the calculation rules are determined, which include (receipt of points for academic work - 25 points, educational and methodological work - 25 points, research work - 30 points, organizational and methodological work - 10 points, spiritual, moral and educational work - 10 points Total 100 points) (Figure 3.2.23);
- the rating of teachers is taken into account according to the rules for determining the teaching load of the teaching staff of a higher educational institution and educational, methodological, research and "mentoring" work, approved by the Ministry of Higher and Secondary Specialized Education of the Republic of Uzbekistan;
- taking into account the distribution of the amount of work by co-authors, i.e. division of points for all co-authors for a scientific article, monograph, study guide, etc.;

- taking into account the adjustment of the assessment by indicators (previously recorded achievements, inconsistencies between the files uploaded to the system for the implementation of plans for the types of activities of the teacher, etc.), as well as entering into the system comments, warnings on the work performed by the teacher.

To display the general statistics of the teachers of the department, on the main page "Head of the Department" go to the tab "Statistics of the teachers of the department" where you can view statistics about the teachers of the department based on their rating.

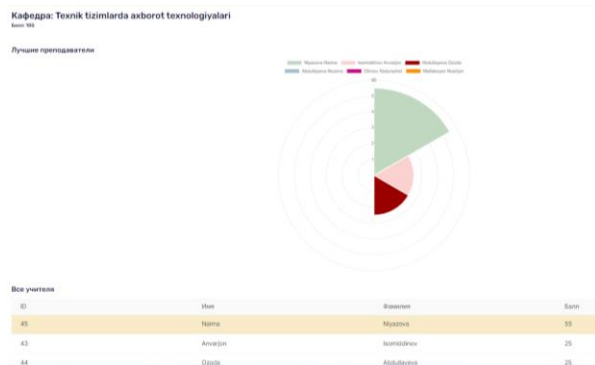


Fig.6. Statistics of teachers of the department

### Acknowledgements:

Thus, the developed information system for managing the personnel of the department will significantly reduce the time spent on processing and analyzing the activities of teachers according to individual plans, organize management processes more efficiently, improve the quality of analysis of the activities of the teaching staff, reduce the time spent on these operations, and reduce the number of errors caused by the "human factor". The developed system was successfully implemented in the activities of the department "Information technologies in technical systems" of the Namangan Civil Engineering Institute, which made it possible to reduce the time for analysis and data collection when planning the activities of the department by the head, since now there is no need to manually view all the individual plans of teachers in the format MS Excel, Word and collect the necessary data from them, this function is now performed by the developed system. Undoubtedly, the use of information technology in human activities saves a lot of time, and also eliminates the so-called human factor, that is, mistakes made by a person, for example, due to inattention, which has an extremely negative effect on the quality of the work performed.

Undoubtedly, the use of information technology in human activities saves a lot of time, and also eliminates the so-called human factor, that is, mistakes made by a person, for example, due to inattention, which has an extremely negative effect on the quality of the work performed.

### Literature:

1. Abdullayeva O. S. Ilmiy axborotnoma informatika 2016-yil, 3-son udk: 004.94: 622.794 Axborot texnologiyalarini o'rgatishda o'yinli texnologiyalardan foydalanish samaradorligini oshirish to'g'risida //Ilmiy axborotnoma. – C. 67.
2. Abdullayeva O. S., Ismanova M. D. IMPROVING THE EFFICIENCY OF THE PROCESS OF PREPARATION FOR

TEACHING ACTIVITIES OF THE UNIVERSITY STUDENTS //Теория и практика современной науки. – 2016. – №. 5. – С. 3-5.

3. Abdullaeva O. S. The course of study—Pedagogical Competence of the Engineer-Teacher //Monograph. Publisher: LAP Lambert Akademik publishing & Co. KG, Saarbrücken, Germany. – 2018. – С. 189.
4. Abdullaeva O. S. Pedagogical competence of a professional teacher (on the example of 5330200-Informatics and information technology) //Study guide. Publisher: LAP Lambert Academic publishing & Co. KG, Saarbrücken, Germany. – 2018. – С. 105.
5. Abdullaeva O. S. Technology enhance the educational process of professional colleges and academic lyceums (for example, studying the course of informatics and information technology) //Monograph. Publisher: Navruz.-Tashkent. – 2016. – С. 189.
6. Abdullaeva O. S. Technologies of increasing the efficiency of the process of preparing for pedagogical activity of students in the direction of vocational education //Diss... PhD in pedagogical sciences: 13.00. 01.-Namangan. – 2018. – С. 156.
7. Abdullayeva O., Beknazarova S. MEDIA CULTURE OF MODERN YOUTH IN UZBEKISTAN //Современное состояние медиаобразования в России в контексте мировых тенденций: материалы II международной научной конференции. Таганрог, 15 октября 2020 г. – ООО ДиректМедиа, 2020. – С. 22.
8. Beknazarova S., Abdullayeva O., Abdullayev Z. METHODS OF PROCESSING INFORMATION RESOURCES IN MULTIMEDIA SYSTEMS //Конференции. – 2021.
9. Абдуллаева О.С., Бекназарова С.С. Технологии повышения эффективности внеклассного учебного процесса //Исследователь, США. – 2016. – №. 8. – С. 30.
10. Safibullaevna, A. An integrated approach to the effectiveness of training masters of technical higher educational institutions //International Journal of Mechanical Engineering this link is disabled, 2022, 7(1), стр. 1170–1173
11. Safibullaevna, A.O., Inomjonovich, I.A., Murodullayevich, M.N., ...Avazovna, S.N., Muxammatrixoyevich, N.A. ORGANIZATIONS AND CONTROL OF SELF-EDUCATIONAL EDUCATION MAGISTRATORS TECHNICAL EDUCATION //International Journal of



- Mechanical Engineering this link is disabled, 2022, 7(1), стр. 1174–1177
12. Safibullaevna, A.O., Karamtdin Kizi, J.M., Engalichev, M.I., Safibullaevna, B.S. Online-learning organization methodology as component of it technologies at students of technical universities // 2020 International Conference on Information Science and Communications Technologies, ICISCT 2020, 2020, 9351487
  13. O.S. Abdullayeva, A. Isomiddinov. Diagnostics and identification of conditions of effectiveness of the process of preparation for pedagogical activity of students on the direction of "professional education" // International journal of mechanical and production engineering research and development (ijmperd), issn (online): 2249-8001; issn (print): 2249-6890; impact factor(jcc) (2019): 8.8746.
  14. O.S. Abdullayeva, S.S. Beknazarova. A. SH. Mukhamadiyev. M.R. Gaumitbayev. Segmentation of rgb images: methods and algorithms // International journal of mechanical and production engineering research and development (ijmperd), issn (online): 2249-8001; issn (print): 2249-6890; impact factor(jcc) (2019): 8.8746.
  15. O.S. Abdullayeva, M.K. Jaumitbayeva, S.S. Beknazarova. Technology of projecting-mobile application // International Congress on Applied Sciences, which will be held in on March 15-16, in Tashkent Chemical-Technological Institute.
  16. Safibullaevna, A.O., Abdurasulovna, K.G. Methodology for organizing online learning as a component of IT technologies for masters of technical higher educational institutions // Annals of the Romanian Society for Cell Biology, 2021, 25(4), стр. 9032–9041.
  17. Safibullaevna, A.O., Karamtdin Kizi, J.M., Engalichev, M.I., Safibullaevna, B.S. Online-learning organization methodology as component of it technologies at masters of technical universities // International Conference on Information Science and Communications Technologies, ICISCT 2020, Tashkent 2020.

3/25/2023