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**МЕТОД СОСТАВЛЕНИЯ РАСПИСАНИЯ В ВЫСШЕМ  
УЧЕБНОМ ЗАВЕДЕНИИ  
ONE METHOD OF TIMETABLING AT HIGHER EDUCATIONAL  
INSTITUTION**

Organization of the coursework is impossible without the scheduling of training sessions at any higher educational institution. There is a large set of requirements and restrictions which is applied to the university timetable. The list of classes should be balanced for more effective training. It should organize continuous work of the teaching staff and use the room reserves rationally. There are special departments at educational institutions. Their main task is the continuous improvement of the timetable.

A specialist who is responsible for scheduling is a timetable clerk. He /she is able to handle the large flow of the documents that regulate the coursework. The

minimum set of actions to be executed to produce an acceptable version of the timetable at IMSIT consists of four steps:

1. scheduling the preliminary timetable;
2. coordination with the teaching staff;
3. verification of timetable by educational department;
4. correction of errors identified during verification.

Scheduling requires the following documents:

- teaching load: information about the teachers of the departments, disciplines assigned to the teachers and groups;
- application to the curriculum: information about the disciplines, forms of control, complexity, and the distribution of teaching load throughout the courses and terms;
- timetable of the coursework: temporal distribution of control weeks and examination sessions for all specializations of a separate organizational unit;
- issue of an order of the contingent: distribution of students in groups and subgroups.

Scheduling also requires the following information:

- information about the number of seats and computers in the classrooms;
- information about additional course subjects.

Curriculum, schedule of the educational process and the order are provided by the educational department in the administrative building, teaching load – by the laboratory assistants. The information about classrooms is collected by the timetable clerk after examining the classrooms. All the documents, except for the order are provided in paper form. The order is given to the clerk orally.

After completion the scheduling of the rooms the following documents must be submitted:

- timetable: schedule for each group, signed by the head of the educational department and the timetable clerk;
- an extract about the availability of the rooms: information about the workload of rooms for a term in the table form;
- the schedule of each teacher of the department.

The head of the educational department receives a timetable and certifies preliminary and final ones. So he is able to control making up the main documents.

The most time-consuming and laborious step is preliminary timetabling. Adding a subject to the schedule grid the timetable clerk has to follow all the rules of the organization of students' and teachers' work time, as well as to consider the recommendations for additional course. It is obvious that the process of adding a subject to the schedule grid is repeated several times, so a timetable clerk can choose the most appropriate time and place for a subject.

Taking into account all the above we can identify the following problems of the timetabling at the university:

1. the head of the educational department must receive, transfer documents and certify the preliminary and final timetable;
2. despite the fact that documents are prepared electronically, a timetable clerk receives them in paper form;
3. control over the timetabling is carried out through the execution of the newsletter;
4. there may be a blunder in teachers' timetable:
  - there can be more than one lesson at the same time;

- long breaks between classes (windows);
  - the geographical remoteness of buildings where classes are held are not taken into account;
5. despite the attempts to take into account the size of the audience, there are situations where the number of students is greater than or at times less than the number of seats in the room;
  6. absence of clear time frames for providing key documents;
  7. inconformity of room reserves of different specialties and departments.

To resolve these problems, the authors offer the following ways:

1. to exclude certification and transference of the preliminary timetable;
2. to provide documents in electronic form;
3. to introduce strict rules and work instructions for a timetable clerk;
4. to introduce an internal document - an extract from the schedule of teachers. Before scheduling each teacher must submit a document containing information about the specifics of teacher's work. This document should be agreed with the personnel department and signed by the rector. When the timetable clerk receives this document, the information is brought in the extract from the schedule of the teacher;
5. to add the opportunity of quick changing of the timetable: to swap around the rooms, to exchange the lessons (this selection is governed by the timetable clerk);
6. to take into account all the information about the room reserve while making up the internal document;
7. to use the previous timetable as an example.

Thus, the new process can be represented in a diagram (Fig. 1). There are three electronic data storage: teachers' schedule, timetable and room reserve.

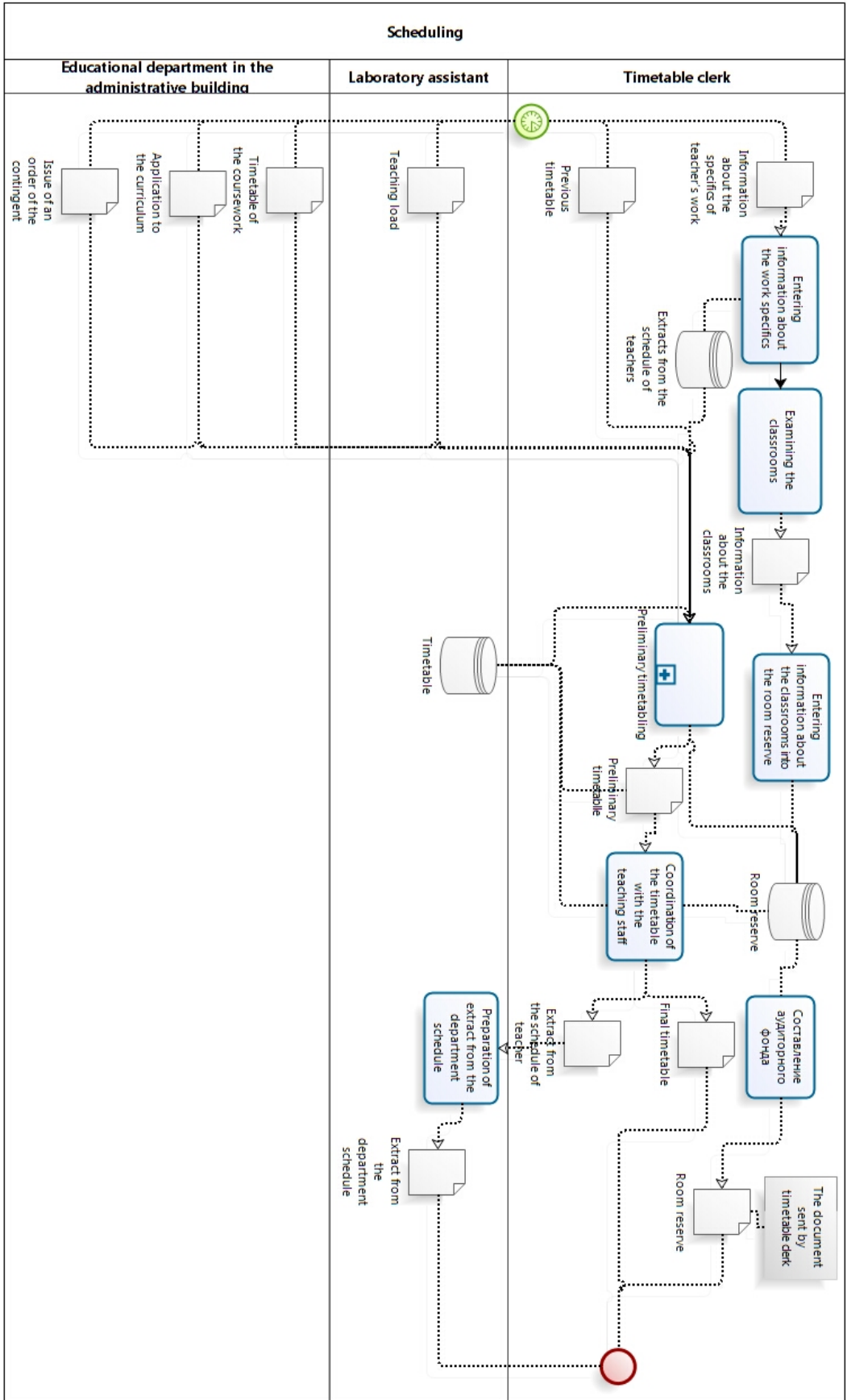
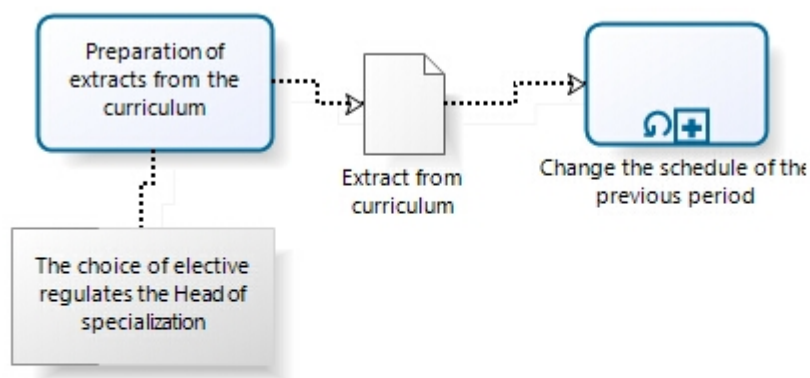


Fig.1. Timetabling at the updated model.

The special thing about preliminary timetabling (Fig. 2) of the updated model is that the timetable of the previous period is used like a starting point. Further, the original timetable is adjusted in accordance with the collected documents and schedule of the teaching staff.



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Fig.2. Preliminary timetabling in the updated model.

In conclusion, we note that timetabling takes about three - four working weeks nowadays. Applying the renewed schema the length of the timetabling can be reduced to two working weeks, taking into account the fact that one week will be spent on coordination of the timetable with the teaching staff.

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