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Research Article

FRAMING OF TIMETABLE- MADE EASE WITH MS EXCEL SPREADSHEET

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ABSTRACT

Timetable for classes plays a major role in handling the classes effectively. It helps the students to follow the classes with full attention, which in turn brings out good results. Framing of time table in every educational institution is found be very hard and time consuming task. Though many automated timetable generator exits, it have some disadvantages too. In this paper we herewith explain the method to frame timetable with the help of Microsoft excel spread sheet program.

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INTRODUCTION

In School education system, timetable is framed once in a year and in College education system it is done twice a year. In addition to that, there is also need for framing timetable like special classes. Framing of class timetable is always a difficult task for the person who gets involved in it. Some try for to use the previous academic timetable. But if there is any change subject allotment it becomes a tedious work to modify the previous timetable. Elimination of clashes plays a very important part in framing timetable.

Pre-Requirment

As a first step, the subjects to be allotted for each class and the corresponding staffs who are going to handle the concerned subject are being done. In usual process, it is done under the control of head of the department, with the prior discussion with the staffs who is willing to handle the paper. Willingness of the staffs in handling the concerned subject helps them to concentrate more on their lectures, which in turn helps the students to understand the subject well.

METHODOLOGY

In manual method, we use to sit for hours drawing boxes with pen. Then we start up filling the boxes with pencil, so that, we can use eraser to modify whenever needed. Here, we use ms excel, a powerful tool in framing timetable. It is a spreadsheet program, which has inbuilt columns and rows. We can just select and draw the required number of rows and columns. In this paper, we discuss, the framing of timetable to first year engineering course students for strength of 7 classes.

Hours - Each Subject

Before starting the work of framing timetable, we must have some prior idea about what we are going to do. As a first step, we go through the subject allotment. We find out the number of hours/periods required for each subject to complete the syllabus on time. Then, we go through the total number of hours for every cycle. Some institutions follow timetable in accordance with the day of the week. Few other institutions follow day order like I, II,III … Here cycle refers to either a week or some day order, which depends on the institution.

Hours - Each Cycle

After the calculation of number of hours/periods is done, we make an analysis on number of working days possible for the academic. This calculation helps in finding out the number of hours/periods needed to be allotted to each subject, so that, the syllabus will be completed with the time slot. Now, we are done with the calculation of hours to be allotted for each subject, for each cycle.

Hours – Each Day

Number of hours/periods to be conducted each day should be decided. It may vary from five to nine, based on the working timings of the institution. In addition to that, break timings are also to be decided. After how many hours/periods, break

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should be given is decided. It helps to fix continuous lab hours in an effective manner.

Lab and Theory Hours

As a follow up step of hour allocation to each subject, we may importance to the lab hours. It need to be allotted in continuous hours. Since, in one hour they may not be able to complete the practical allotted to the students. Some experiments require more than two hours. Depending on the number of hours needed for each lab experiments, we allot continuous hours, which may extend from one to three or sometimes four also.

Class-Room and Lab Allotment

Class rooms and labs should be allotted as a next step. Class room allotment does not impact more on framing timetable. But, lab should be allotted with more concentration. There may a single lab, which is used by more than one class. There is also a chance, of more than one lab, which can made an effective use of all the classes.

In some cases, there are labs, which can accommodate a particular number of students only and not the whole class. In such a situation, the whole class is split up into two and they are allotted to two different labs in proper coordination.

Constraints

There are few constraints, which are to be kept in mind in following the procedure of framing timetable. We categorize the constraints into two types, which we represent as positive and negative constraints.

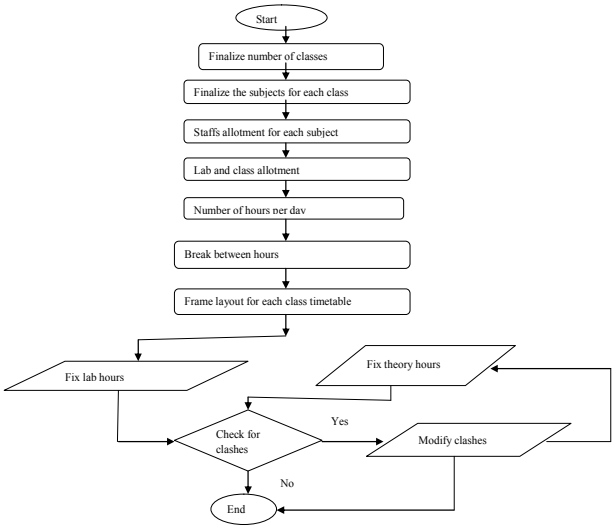
Positive Constraints

- Lab hours should be allotted first
- In first year, all the classes have the same type of labs. Hence, error of getting clash in lab hours should be given preference
- Tough subjects should be identified and make maximum use of morning hours
- Every subject should have a first hour class
- Maximum possibility of last hour class to every subject has to be done
- Staff preference in allotment of hours if any, has to considered
- If any staffs handle classes other than first year, care should be taken that the timings do not get clashed

Negative Constraints

- Not more than two continuous hours to be given for each subject
- However, under requisition of particular staff, more than two continuous hours can be allotted
- Hours allotted for tough subjects should not be more during afternoon hours, which the student may find it difficult to listen
- Same subject should not be given more continuous hours, which the student may find it hard to listen
- Two labs should not allotted for a class in a day, which results in whole day theory hours which is difficult to listen for the students

Pictorial Representation



Verifying Clashes

If we try to verify clashes after finishing the work, it is definitely going to end in failure. It is a must procedure to verify clashes for each staff simultaneously while allotting hours. In Excel we can use the second work sheet to fill individual timetable simultaneously, which helps to avoid clashes and save our double time work.

Advantages of Using Excel Spreadsheet

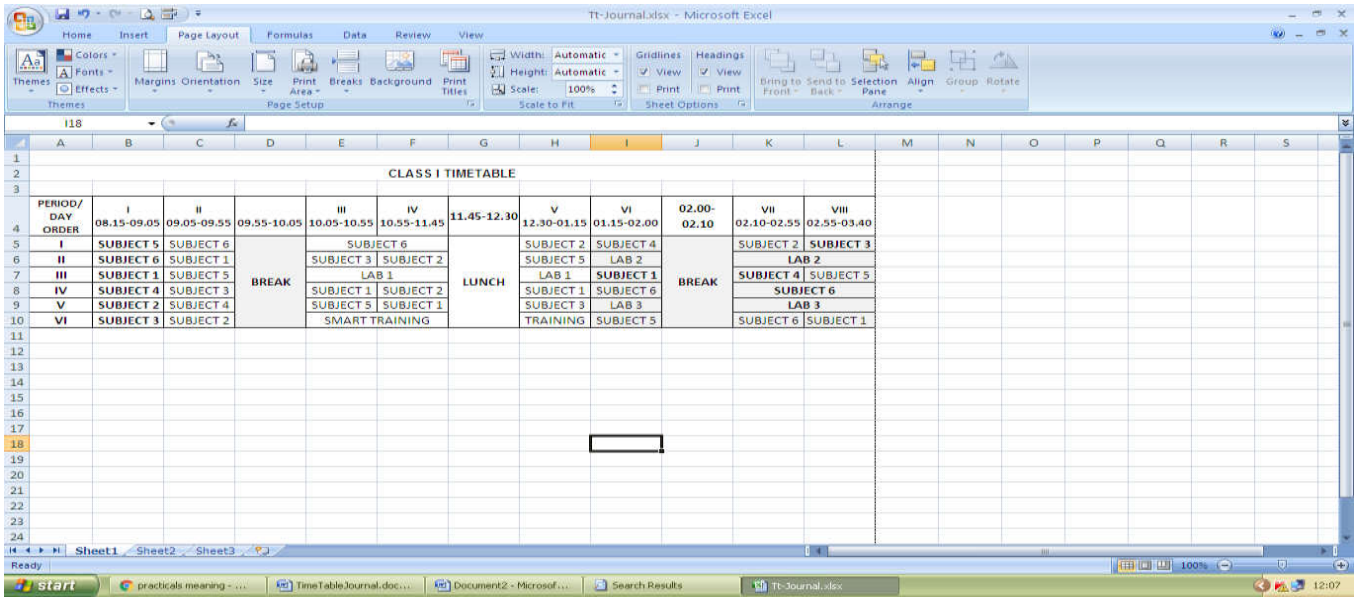
Excel works as a powerful tool in framing timetable. The spreadsheet program has many user friendly advantages. Herewith, we list out a few which is used in timetable framing.

- We can frame table easily by selecting cells, which is a minute process
- By a single conditional formatting method, we can given different colors to each subject, which helps to view easily
- In a single sheet, we can frame as many tables, as we need. This helps us to prevent from turning pages for each class
- In the second sheet, we can work out individual timetable simultaneously, which prevents our tedious work of removing clashes
- After framing timetable, we can easily insert/delete columns/rows, for our needs like break
- Every time typing the subject name in full will be difficult. So, we can just give some identification and after finishing the work, we can change it using find and replace option
- To denote continuous hours, merge option may be used
- It is easy to modify changes if any
- Another important usage of Excel, is that, timetable in-charge can lock each sheet with their own password, so that, there is no chance for others to edit it

CONCLUSION

Time table for first year Engineering course for 7 classes, which contains 6 theory subjects and 3 lab subjects, has been

successfully frames with the help of Excel. A sample of one class has been given below for reference.



CLASS I TIMETABLE

PERIOD/ DAY ORDER	I 08.15-09.05	II 09.05-09.55	09.55-10.05	III 10.05-10.55	IV 10.55-11.45	11.45-12.30	V 12.30-01.15	VI 01.15-02.00	02.00-02.10	VII 02.10-02.55	VIII 02.55-03.40
I	SUBJECT 5	SUBJECT 6	BREAK	SUBJECT 6		LUNCH	SUBJECT 2	SUBJECT 4	BREAK	SUBJECT 2	SUBJECT 3
II	SUBJECT 6	SUBJECT 1		SUBJECT 3	SUBJECT 2		SUBJECT 5	LAB 2		LAB 2	
III	SUBJECT 1	SUBJECT 5		LAB 1			LAB 1	SUBJECT 1		SUBJECT 4	SUBJECT 5
IV	SUBJECT 4	SUBJECT 3		SUBJECT 1	SUBJECT 2		SUBJECT 1	SUBJECT 6		SUBJECT 6	
V	SUBJECT 2	SUBJECT 4		SUBJECT 5	SUBJECT 1		SUBJECT 3	LAB 3		LAB 3	
VI	SUBJECT 3	SUBJECT 2		SMART TRAINING			TRAINING	SUBJECT 5		SUBJECT 6	SUBJECT 1

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