

**2002 SURVEY OF COMPUTERISED TIMETABLING IN HIGHER EDUCATION**

**DATA FROM ALL RETURNS**

This is the second part of the report on the third national survey by AIMS of timetabling practices in HE. The first survey (1997) attracted sixteen replies. The second (1999) attracted twenty-four. This survey has attracted sixty-six. This growth of interest reflects an increasing level of interest in computerised scheduling that AIMS and others have detected in universities over the last 18 months.

The outcome of this survey has now (October 2003) been produced in PDF format and made available to the entire HE community. For convenience in the conversion process, the report has been split into two. The first part, pages 1-12, summarises the responses. The second part (pages 13-31), shows the unedited returns. If you require further information about AIMS, please see the AIMS website: <http://www.aims.eu.com> .

**INSTITUTIONS RESPONDING IN EACH SIZE CATEGORY**

The institutions have not been identified in the summaries of data that they provided.

*NUMBER OF FTE STUDENTS*

<b>≥ 20,000</b>	<b>15-20,000</b>	<b>10-15,000</b>	<b>5-10,000</b>	<b>≤ 5,000</b>
1. Leeds Metropolitan	1. Anglia Polytechnic	1. Brighton	1. Aberdeen	1. Abertay, Dundee
2. Manchester	2. Birmingham	2. Coventry	2. Bangor	2. Buckingham
3. Nottingham Trent	3. Cambridge	3. Durham	3. Bath	3. Imperial College, Wye Campus
4. Open	4. Cardiff	4. Galway, NUI	4. Birkbeck, London	4. Institute of Cancer Research, London
5. Sheffield Hallam	5. Central Lancashire	5. Glamorgan	5. Bournemouth	5. RF & UC Medical School CHIME (UCL)
6. UWE, Bristol	6. KCL	6. Greenwich	6. Bradford	6. School of Pharmacy, London
	7. Liverpool	7. Hull	7. Buckinghamshire Chiltern University College	7. SHTM, London
	8. Middlesex	8. Imperial, London	8. City	8. SOAS
	9. Nottingham	9. Loughborough	9. East Anglia	9. Swansea Institute of HE
	10. Salford	10. Newcastle upon Tyne	10. Essex	
	11. South Bank	11. North London	11. Heriot-Watt	
	12. UCL	12. Oxford Brookes	12. Lancaster	
	13. Wolverhampton	13. Queen's, Belfast	13. Napier	
		14. Thames Valley	14. QMW, London	
		15. UEL	15. Robert Gordon	
		16. Warwick	16. Royal Holloway	
			17. Stirling	
			18. Surrey	
			19. Sussex	
			20. UMIST	
			21. University College, Northampton	
			22. York	

**GROUP 1. INSTITUTIONS WITH MORE THAN 20,000 STUDENTS**

**Question 5. Awareness of Available Systems**

Name	Know of system	If evaluated, means used					System is used here
		Views of others	Reviews	Visits to users	Testing or use	Other	
Adesoft							
Celcat	4	2			2		1
Facilities	4	2		1	1		2
Infosilem							
Syllabus Plus	3	1		1			2
Other							

**Question 6. If you have recently carried out a formal comparison of systems and are able to make comments, please do so below.**

- Review imminent. Celcat used at present in 11 versions, locally managed. We want a central database distributed across users.
- At present used mainly for rooms bookings but we schedule one faculty from scratch

**Question 7. What advice would you give to staff from other institutions who were about to introduce computerised timetabling?**

- Ensure early "buy-in" from all parts of the organisation.
- Ensure all data correct. TT only as good as the data used.
- Do the feeder processes deliver the required info at the required time?

**Question 8. Has computerised timetabling led directly to any identifiable financial savings, space benefits or to other benefits such as improved planning and delivery of courses?**

- Certainly helped as a planning tool. On one campus, all faculties are linked and share data, which helps with servicing modules.
- Planning has definitely improved. Also other benefits eg space utilisation, course delivery.
- Significant improvements in rooms bookings and staff can now book on-line

**Question 9. Please indicate the organisational location of the staff responsible for the functions shown (the numbers of responses is shown: 0.5 means two locations mentioned)**

	Registrar/ Secretary's Office	Estates/ Buildings Office	VC's Office	Faculties/ Schools/ Depts	Exams Office	Planning Office
Scheduling lectures		1.5	.5	3		1
Scheduling Exams	1	1.5		1	1.5	1
Ad-hoc room bookings		5				1
Conference Room bookings		5				1

**Question 10. If you have central computerised timetabling:**

**Are data entered centrally, in Departments/Schools or in both?**

- Both
- Both
- Both
- Central

**How many TT staff employed centrally and what type?**

- Unsure
- 2.5 admin and 1 planning
- 3 clerical

**Number of students and courses scheduled centrally and number by computer?**

- 20,000 students
- Under review
- None (?)
- Not known

**Is the system linked to a course database and/or to a student database?**

- Yes
- Not yet but under development
- Yes, both
- Buildings database only

***Does the system provide output in WWW format, and if so, in relation to what (eg staff, groups, individual students, rooms)?***

- Yes
- Individual timetables for students on intranet
- Yes – for staff, groups, students, rooms
- Now under development

***Do you charge user departments directly for the space they book, perhaps to discourage overbooking?***

- No
- Yes
- No
- No

***Do you schedule specialist rooms such as laboratories?***

- No
- Not centrally
- No
- No

***Do you allow the system to run freely or are significant constraints placed on it?***

- Yes
- Yes, not generally permitted to change rooms, times, staff specified by schools/depts.

***If there are constraints, what are the obstacles to removing them?***

- Staff attitudes, university culture. Staff unaware of power and potential benefits of the software.

***What are the benefits of the system now, to students, staff and the institution as a whole?***

- Provides a basis for moving towards fully centralised timetabling
- Shared info, less conflict for academic depts, fewer room clashes, improved planning
- Clashes can be identified quickly and resolved. Room booking info available immediately. Far easier to keep records.

***What are the disadvantages?***

- Significant training needed for staff, who must be very IT literate
- Problems when staff leave because of training required.

***Question 11. Further comments***

**GROUP 2. INSTITUTIONS WITH 15-20,000 STUDENTS**

**Question 5. Awareness of Available Systems**

Name	Know of system	If evaluated, means used					System is used here
		Views of others	Reviews	Visits to users	Testing or use	Other (Presentation)	
Adesoft	2						
Celcat	11	4	2		1	1	1
Facilities	10	3	3	3	2	2	7
Infosilem	5						1
Syllabus Plus	12	5	3	5	4	2	3
Other	2						
In house	1						1

**Question 6. If you have recently carried out a formal comparison of systems and are able to make comments, please do so below.**

- CMIS and Syllabus Plus short listed from formal invitation to tender, CMIS selected.
- Reviewed CMIS, Celcat and Syllabus Plus approx three years ago. Chose CMIS because it seemed to best reflect our needs.
- Have used both Syllabus Plus and CMIS. One seemed easier to use but the other provided better support.
- I used Syllabus Plus at another institution and CMIS here. I consider CMIS better.
- We recently installed CMIS, having invited presentations from Celcat, CMIS and Syllabus Plus and looked at them in detail. Celcat does not have an automatic scheduler, but would be fine for a room bookings system or timetabling system that data that was fixed in time (not space). Syllabus Plus seemed more complicated and less easy to extract data. CMIS seemed (at the time) to have better web facilities.

**Question 7. What advice would you give to staff from other institutions who were about to introduce computerised timetabling?**

- Need strong steer from Directorate. Allow significant time to collect all required data. Usually a great deal of clearing of data is required.
- Always run a test (dummy) alongside regular timetabling to ensure the programme accurately meets the needs.
- Make sure that data needed for timetabling is available for upload. Make sure there is enough staff resource. Make sure you have strong support at university senate level.
- We are in the middle of introducing automatic scheduling. My advice would be to be involved with the procurement of the product and know the long term aims of the institution in respect of other IT systems, eg exams, student records etc.
- The most important point is to have good systems of communication and data-collection, and for there to be staff support on both admin and academic sides.

**Question 8. Has computerised timetabling led directly to any identifiable financial savings, space benefits or to other benefits such as improved planning and delivery of courses?**

- Registry uses CMIS to timetable exams only. Another section (in Estates) uses CMIS to timetable classes. Can now determine room usage and audit actual use against what is timetabled.
- We do not have an institution-wide computerised timetabling system. Where it operates, savings have been made in better use of space and financial savings.
- System not fully computerised. No automatic collection of dates, but we check for clashes, exam hall space etc.
- Improved information flow. Removed problems of clashing i.e. complaints reduced to almost nil. Space utilisation can now be easily quantified, which is first step towards large financial savings.
- More control of room usage, therefore less need for accommodation off-site. Have used statistic facility (Celcat) as part of planning process for new buildings and changes to buildings layout. Can audit use of rooms, this also helps in future planning. We are also a central info point for students, reception areas, security, catering, car parking etc.
- We tend to use the room-booking aspects of CMIS rather than the timetabler. This has hugely benefited us in the turnaround time in matching timetable requests with rooms.
- Syllabus Plus – space benefits; financial savings; essential. CMIS – space benefits/savings; essential for modelling; management tool.
- We have found a saving in space and teaching resources which lead to financial savings. We are also using the system for planning future development of the university.
- None yet, but some should be identifiable next year.
- Computerised timetabling can lead to improved planning and delivery of courses. You can do “what-if?” modelling, so as to change of free-up space.
- We use Syllabus Plus for exam timetabling. The main saving has been space.
- Financial benefits: less time spent working out timetables, producing reports, looking for rooms for meetings etc, therefore fewer human hours needed. There are fewer room clashes (we did not have

**BASIC DATA UNEDITED****Institutions with  
15-20,000 FTE Students**

one genuine unintentional room clash this year). Room utilisation can be more easily monitored and therefore space is used more efficiently.

- Next year!

**Question 9. Please indicate the organisational location of the staff responsible for the functions shown (the numbers of responses is shown: 0.5 means two locations mentioned)**

	Registrar/ Secretary's Office	Estates/ Buildings Office	VC's Office	Faculties/ Schools/ Depts	Exams Office	Planning Office	Central Services	Conf Office
Scheduling lectures	3	2		8				
Scheduling Exams	9.5	1		2.5				
Ad-hoc room bookings	6.5	3		3.5			1	
Conference Room bookings	2.5	4	0.5	1			2	3

Some institutions allocated lecture rooms centrally but did not do full scheduling centrally. In one institution, lectures are scheduled in faculties, examinations in the Registrar's Department, Casual room bookings in Operational Services and conference bookings through the Conference Office.

**Question 10. If you have central computerised timetabling:  
Are data entered centrally, in Departments/Schools or in both?**

- Depts for classes; central for exams
- Mainly in depts; course modules in Registry; staff info in HR
- Both (exams only)
- Both
- Centrally
- Centrally for room allocation and exams scheduling
- Centrally
- Centrally
- Centrally at present, but the introduction of scheduling in Semester 2 2002/3 will mean that data is entered directly by Schools.
- We do not have a central timetabling system for lecture room accommodation.
- Both. Data for one school entered centrally. Largest schools enter their own data but centre helps if necessary. All are checked centrally and problems are resolved centrally.
- Both.

**How many TT staff employed centrally and what type?**

- 4 admin/clerical
- 1 academic-related plus departmental
- Exams timetabling by Exams section staff as part of general duties
- 3 FTE admin
- 2 for exams scheduling; 3 clerical and 1 manager for room allocation.
- 4 FTE
- 1 admin, 3 clerical
- 1 admin, 2 clerical
- 1 administrative (exam scheduling only)
- 3 central administrative. One ensures system works. Two have Schools. All do room bookings. The other schools have 2 academic and 2 admin, all with other duties. At present about 1/3 of students are scheduled by computer.
- 2.5 admin and 0.8 academic

**Number of students and courses scheduled centrally and number by computer?**

- All are entered but we only use the system logic only for exam times and groups
- 14,000 students; unknown number of courses
- 2,000 exams for 12,000 students
- Not yet applicable
- All
- 16,000 students for exams
- All courses and students scheduled centrally
- All students and 300 courses but not timetabled, currently allocated by room booking.
- At present most courses but no students. Next year all students (~17,000) and all courses (~2,000)
- 14,000 students, 327 courses in total. About 1/3 by computer (about 4,000) students. This will increase.
- 8,000 + students; 365 programmes all by computer. 500 students and 4 programmes not timetabled centrally.

**Is the system linked to a course database and/or to a student database?**

- Exams system is linked, timetabling system is not.

- Yes, course modules.
- Both.
- No. Planned for 2002/3.
- No
- No, but we use a snapshot of the student database for the exams
- Not at present but will be in the future
- No
- Yes, to Banner student records
- No
- No
- Not dynamically but can transfer data.

***Does the system provide output in WWW format, and if so, in relation to what (eg staff, groups, individual students, rooms) in relation to staff, groups, individual students, rooms?***

- No
- Room bookings info to user only. CMIS E-Portal to be introduced.
- No
- Yes – staff, rooms, modules and for students. (F)
- Yes, could be all points mentioned (F)
- Yes, by rooms
- Not yet implemented
- No
- Being developed. Will provide timetables for course, unit, class group, lecturers, rooms (F)
- Yes, all points mentioned (S)

***Do you charge user departments directly for the space they book, perhaps to discourage overbooking?***

- No
- No
- No
- No. Planned for 2002/3
- Yes
- Not yet but planned for 2002/3
- No
- No
- Yes, via Estates
- No (exams only)
- No
- No

***Do you schedule specialist rooms such as laboratories?***

- Yes
- No
- No
- No. Planned for 2002/3
- Yes
- No
- Manually
- Yes
- No, but planned
- No (exams only)
- They are booked, not scheduled. Only the school that "owns" the laboratories and the Registry have access to these rooms.
- Yes

***Do you allow the system to run freely or are significant constraints placed on it?***

- Exam timetabling is constrained
- Time constraints
- Not fully automated
- Priority given to regular (ie yearly or full semester) events. One-offs are left until last.
- Constraints added for exams. Linked papers, early papers etc.
- Constraints input
- Significant constraints. Schools decide on timetable at present (changes are on the way!).
- Currently runs freely, but constraints are likely in the future.
- Generally freely this year, as the scheduler was used for only 2 schools. We did "link" events to try to get the same room. Constraints are combined honours courses, part-time students, no bookings longer than 2 hours, no 2-hour bookings between 10 am – 12 noon.

***If there are constraints, what are the obstacles to removing them?***

- University requirements/regulations

- If we allowed one-off bookings to run alongside regular bookings, we would soon run out of space.
- Early papers – political obstacles.
- We adapt constraints
- Central timetabling to have full power to timetable based upon student option choice.
- Combined honours and part-time units must be taught at certain times. Therefore, those that involve full-time students are fixed and cannot be changed. The rule about no 2-hour booking between 10 am and noon was introduced to maximise room usage.
- Poor or incomplete data

***What are the benefits of the system now, to students, staff and the institution as a whole?***

- Could not operate manually
- No double bookings, better use of space
- Allows flexibility but we are now looking for a new system that will be fully automated.
- Students can access timetable on web, very useful to all especially part-timers. Staff have easy access via web.
- It speeds up the whole process and divides up space, I think, fairly.
- Essential for exams scheduling. Teaching timetable – only used as room booking system. Efficient and clash-free.
- Gives clash free teaching (and) sets timetables early
- Stable timetable
- Better clash-free timetables, better delivery of timetable information, more accurate, can be produced earlier.
- Changes to timetables events and other room bookings, and creating new events, are much easier and faster, and there are fewer clashes. Because of this, we aim to have timetables for both semesters completed for Semester 1, benefiting students and staff and therefore the institution. We will have more time to work through problems.
- WWW access with no clashes for students and staff. Potential for better resource utilisation.

***What are the disadvantages?***

- None
- Some departments still refuse to consider central timetabling.
- Server problems (not software) need to be resolved
- Information not returned by deadlines
- At present, we still have clashes, low room utilisation rate, no flexibility within the system (moving to meet course teaching needs), overbooking of rooms, lack of data accuracy [NB other parts of the reply also suggest that they are in an early stage of implementation]
- Does not please everyone, they are used to bespoke timetables and they claim it takes away academic freedom.
- Overbooking of rooms. There is still an idea that schools won't get enough space to teach in, so the information is not accurate as it is easy to overbook. E-portal not yet working properly.

***Question 11. Further comments***

- Celcat records data but does not schedule. We do not add student names. We allocate only rooms centrally. We can publish this information in many useful formats ie WWW, or weekly room usage schedules, or to particular groups of students, etc.
- Please let me know the outcomes of the survey, especially in connection with space-charging
- We currently use CMIS to allocate rooms. From Semester 2, 2002/3, we will use the system to schedule all days, times, staff, students and rooms. This is a significant change in the way timetabling has been done in the past and a real shock to some people.
- We have a student system that is capable of scheduling but there is no demand, as yet, to use it for that purpose. [NB this institution had no response to questions 6, 7, 8 and 10.]

**GROUP 3. INSTITUTIONS WITH 10-15,000 STUDENTS**

**Question 5. Awareness of Available Systems**

Name	Know of system	If evaluated, means used					System is used here
		Views of others	Reviews	Visits to users	Testing or use	Other	
Adesoft	1						
Celcat	16	4	1	1	2	1	3
Facilities	14	3	2	5	2	3	4
Infosilem	5	1	1	1			
Syllabus Plus	16	5	2	6	4	1	6
Other							1
Excel	1						1
Oracle	1						1

One respondent also referred to SITS and IRIS

**Question 6. If you have recently carried out a formal comparison of systems and are able to make comments, please do so below.**

- Celcat is an excellent tool for departments when planning the teaching schedule and staffing requirements. However, it does not adequately cope with the requirements of booking rooms on this campus, as Nursing and Teaching students do not use rooms for all weeks of a semester.
- We recently installed Syllabus Plus although we have not gone live. We compared CMIS and Syllabus Plus and selected the latter on the grounds of cost, plus the technical fit that Syllabus Plus offered (we were already users of Scientia’s exam scheduler).
- We evaluated needs a few years ago and concluded that CMIS would suit our needs better than Syllabus Plus. No funding allocated, so we did not progress.
- Have had CMIS for some years for exams. Switched our teaching and room bookings over from STARS a couple of years ago – evaluated then ... Infosilem and Syllabus Plus. Chose CMIS, very pleased.
- Syllabus Plus was part of an overall student system proposal and was selected because it had been interfaced with the student record system that we use.

**Question 7. What advice would you give to staff from other institutions who were about to introduce computerised timetabling?**

- Run it formally – Project Manager (preferably a senior academic) and Project Team. Identify staffing required. Identify objectives – extent of user base, extent of cross-faculty co-ordination, set targets for improved efficiency. Provide users with adequate training. Permit dedicated time to learn and use system. Recognise formally through JD.
- Make sure the system meets the needs of the whole organisation.
- Get the data right. Ensure the interfaces work both ways. Involve the users more/earlier.

**Question 8. Has computerised timetabling led directly to any identifiable financial savings, space benefits or to other benefits such as improved planning and delivery of courses?**

- We currently use CMIS for timetabling rooms only, but have just started a pilot for timetabling staff, students and rooms in one of our faculties. We were able to reduce the overall number of teaching rooms, releasing space for improved IT facilities and expect the pilot of full timetabling to show improvements in planning.
- We were the first to use CMIS. Before that, we created room bookings on Excel. It was a complex and staff-intensive task. CMIS is an excellent product for space planning, reporting and a small, centralised team to operate.
- Too early to analyse, and we only have partial computerisation at the moment.
- Space benefits as users can now look at availability across the whole campus. Also, the institution is more coordinated. Staff are able to assist each other.
- We use Syllabus Plus for modelling scenarios, ie how many rooms of a specified size might be needed if we relocate certain departments. Also used to improve certain years of some departments’ programmes.
- Reduction in rooms used for exams. Planning space requirements in new building. Reduction in teaching space.
- Better space management. Improved space utilisation. Modelling new courses and the resource implications for delivery.
- Improves utilisation of “common user” rooms across the university. The system has been used to plan new teaching space using teaching requirements held on computer.
- Too soon to say.

**BASIC DATA UNEDITED**

**Institutions with  
10-15,000 FTE Students**

**Question 9. Please indicate the organisational location of the staff responsible for the functions shown (the numbers of responses is shown: 0.5 means two locations mentioned)**

	Registrar/ Secretary's Office	Estates/ Buildings Office	VC's Office	Faculties/ Schools/ Depts	Exams Office	Planning Office	Resl Svcs	Conf Office	Media Svcs
Scheduling lectures	2	5.5		3.5		1			
Scheduling Exams	10	2			1				
Ad-hoc room bookings	2	8							1*
Conference Room bookings		6					2	3	1

\* includes all room allocations

**Question 10. If you have central computerised timetabling:  
Are data entered centrally, in Departments/Schools or in both?**

- Centrally
- Centrally
- Both
- Centrally, although looking to set up an Access front end to allow timetabling reps in depts to enter data (Syllabus Plus user)
- Centrally
- Centrally
- We plan to do both.
- Centrally
- Centrally
- Both – downloads from student system and module database – activities etc by depts/schools. Mainly departments.
- Centrally

**How many TT staff employed centrally and what type?**

- 2 admin staff, with temporary help at peak times, but not full timetabling
- 3.5 administrative
- 21 (sic) academic and clerical [Celcat user]
- 2 clerical (1 ad hoc bookings) and 1 admin, but timetabling is only part of the role.
- 1 clerical
- 2 admin staff [using an Excel system]
- 3 admin
- 1 admin, 2 clerical [Syllabus Plus not yet live]
- 1.8 FTE for teaching/room booking, approx 0.5 for exams, plus some time from Head of Unit.
- 4.5 (4 admin + 0.5 from Unit Manager)
- 1 admin, 1 clerical, [but most timetabling is done in depts using Syllabus Plus]
- 1 admin, 0.25 MIS (exams only)

**Number of students and courses scheduled centrally and number by computer?**

- At present students are scheduled by faculties with course modules allocated to half-day slots, classes are then scheduled centrally
- 24,000 students, 950 programmes
- None scheduled by computer [using Celcat]
- We do not timetable individual students. There are 3,300 modules and 209 programmes of study on the system.
- 10,000 students and 2,000 courses are scheduled centrally.
- All courses are timetabled centrally – 15,000 students – and done electronically.
- Not yet live. Plan is 16,000 students, 1,900 courses.
- 11,000 students, hundreds of courses/pathways all allocated teaching space by computer. Same for exams, but fewer students.
- 20,000 students, 700 courses
- 559 courses, 4703 students although timetable system schedules majority of courses. 16,600 students total.
- 12,000 students, exams only. 2,750 exam sessions.

**Is the system linked to a course database and/or to a student database?**

- Not yet, but will be soon.
- Module codes are harmonised with student database
- Yes

- No, but looking to get systems can be interrogated to produce information from both systems
- No
- No
- Both
- Yes
- CMIS imports course and student data from our SITS database.
- Yes. Central student records system by file transfer
- No, info comes from downloads etc.
- Yes, direct feed from student

***Does the system provide output in WWW format, and if so, in relation to what (eg staff, groups, individual students, rooms) in relation to staff, groups, individual students, rooms?***

- We are currently working on this (F)
- Web portal available, not very successful (F)
- Yes, student timetables (Celcat)
- Yes, by programme of study in grid format (S)
- Syllabus Plus does have a web server but we have not purchased it.
- All these
- Planned – all the above.
- Yes in all formats. We post exam results on web (F).
- Yes, currently modules and rooms: plan to move to student timetables (S)
- Yes, currently modules and rooms.
- Student on the web.

***Do you charge user departments directly for the space they book, perhaps to discourage overbooking?***

- No
- No
- No
- No, but we fine for missed bookings
- No
- No
- No, but might consider it
- No
- No
- Until now this was done by space allocations – no financial charging. Now we have introduced actual charging for space.
- No
- Not yet
- No

***Do you schedule specialist rooms such as laboratories?***

- No
- Yes
- No, coordinated by academic staff in their own rooms
- Yes, if requested to.
- No
- No
- No
- No
- Computer labs
- No for science labs; yes for IT (PC labs)
- No
- Some scheduled on system by depts, none centrally
- No

***Do you allow the system to run freely or are significant constraints placed on it?***

- We identify constraints and intervene manually, when necessary, to remove them.
- Runs freely
- Constraints are placed
- Constraints are built in via the course regulations, which are included rigorously
- Constraints on staff and students are taken into consideration
- Room problems – insufficient space
- Constraints
- Many constraints for teaching, eg fixed time. Fewer for exams but still a significant number eg duration, departmental blocks, links, time of day.
- In transition. Previously with significant constraints. University policy undergoing approval to allow greater freedom.
- Only constraints of time (average 9-5 teaching) in general – others as done individually by dept users.

- Constraints relating to closeness plus shared modules.

***If there are constraints, what are the obstacles to removing them?***

- It means compromising the original principles.
- None, all these affect bookings of events and are done by Estates.
- Depts have to agree to removal to allow scheduling if required.
- Complicated student choice
- Geographic location, ownership
- We keep constraints to a minimum
- Custom and practice
- Activities would schedule outside teaching hours

***What are the benefits of the system now, to students, staff and the institution as a whole?***

- Transparency of room allocation process. Effective use of space. Objective matching of rooms to needs.
- Better utilisation of space. Fewer staff required to operate. Students get better fit and more suitable rooms for delivery of course.
- All information is accessible.
- We have a timetable that allows for the maximum number of popular combinations. We can easily check clashes if new slots are requested.
- Shared information
- Transparency
- No room clashes benefits staff and students. Optimal allocation of facilities to class needs. Financial savings.
- Increased transparency; improved efficiency of timetables; enhanced facilities and space management.
- Helps prevent clashes, visible to all, enables sensible accessible reporting, increased utilisation of central rooms. Students can check their module timetables on the intranet. Staff can see the availability of rooms and timetables. Managers can see how well rooms are being utilised.
- Automation increased.

***What are the disadvantages?***

- None seen at present
- Web portal not very good. Reporting facilities are good, but very complex (F)
- Depts would like more viewable access to timetable info. We are in the process of putting info on the web to allow for this (Syllabus Plus user).
- Rigid slotting system
- Data requirements are proving to be very demanding
- Dependence on electronic link to server
- Attempted ... of the system
- Not everyone will use (or use correctly); info cannot be trusted as class sizes generally incorrect or missing. Staff sometimes use a room without booking it first with the scheduling office. Certain departments block-book rooms "just in case" they might need them.
- Data errors have greater impact than ...

***Question 11. Further Comments***

- The current timetable is extremely resource inefficient. Timetabling is based on data from the previous 5 years and has been adjusted each year, using Excel. We are currently considering implementing Syllabus Plus and have established internal working groups to establish an implementation plan.
- We do central room allocation of 75 pool rooms and 6 computer labs to dept timetables. This is not easy as there are 20+ timetablers and limited rooms. We are considering investing in a timetabling system and will be very interested in the results. We are about to use March Intranet Resource manager for rooms.
- The University is about to procure a new student record system. The expectation is that there will be dynamic links with Syllabus Plus. This will necessitate major changes in policy, business practices and planning.
- Only 38 rooms timetabled centrally – 400 on system out of nearly 800. others timetabled by depts and belong to depts. Most central rooms are large lecture theatres. Faculties/departments responsible for compiling own timetables using Syllabus Plus, with help if necessary

## GROUP 4. INSTITUTIONS WITH 5-10,000 STUDENTS

**Question 5. Awareness of Available Systems**

Name	Know of system	If evaluated, means used					System is used here
		Views of others	Reviews	Visits to users	Testing or use	Other	
Adesoft							
Celcat	19	5	2	3		1	5
Facilities	16	5	3	4	4	4	9
Infosilem	4						
Syllabus Plus	19	4	5	3	4	2	10
Other	4						2
	1						1

**Question 6. If you have recently carried out a formal comparison of systems and are able to make comments, please do so below.**

- It is extremely difficult to assess how a system can work within one's institution without experience. Often your objectives are unclear at the outset, and some are determined during the implementation process, when you are more aware of the scope of the system and what it means for one's institution.
- Celcat was very structured but not very flexible, eg CMIS would allow us to customise to a greater depth.
- We did consider another system as I was disappointed with the reporting and printing on S+, however Scientia have now launched a newer version of the software where these problems have been addressed. I am very impressed with the latest version and we are about to install it here in the next few weeks.
- Recently tendered for a new system. Current in-house development team (lecturers in School of Computing) and three external suppliers. Tender awarded to Syllabus Plus.
- CMIS provided the greater flexibility.
- The University looked at CMIS and Syllabus Plus three years ago and chose Syllabus Plus. It was felt that CMIS was more of a total management information system.

**Question 7. What advice would you give to staff from other institutions who were about to introduce computerised timetabling?**

- Ensure support from senior management. Obtain/set clear objectives. Visit as many institutions as possible with as many systems in operation as possible. Pilot the scheme, run it in parallel with current system, or once with known success. Compare outcome. Allow lots of time for training with current system and familiarisation of system. Ensure company provide an excellent training programme and consultancy.
- Visit as many (or talk with) other institutions as possible. Ask the demonstrators of the software what it doesn't do, and why. Finally (this is very important) once the software is bought, what back-up, help and support service is available?
- Ensure that staff using the system have the aptitude to handle a computerised timetabling system.
- Have a clear idea of what you want the system to achieve.
- We currently use S+ to book rooms and it is anticipated that it will be used for timetabling in the future. The main advice is to decide what you wish the database to do for you in the process of scheduling. Work on the assumption that there is much to do to allow auto scheduling.
- The important factor is gaining support of staff that will use the system. Technical support is also vital.
- Take it slowly and gradually. Make sure senior management fully support.

**Question 8. Has computerised timetabling led directly to any identifiable financial savings, space benefits or to other benefits such as improved planning and delivery of courses?**

- It has undoubtedly prevented institutional breakdown.
- Difficult to measure. In conjunction with introducing computerised timetabling, we centralised all teaching rooms. This has led to greater flexibility and better use of space.
- Too early to evaluate.
- Owing to size of institution and number of lectures, it would be very difficult and time consuming to attempt to timetable by hand, manually. Saving in terms of time, and therefore also financially.
- Saved 1.5 staff previously employed to make ad hoc room bookings in another system. Difficult to quantify direct financial savings in other areas, although reporting/management info is definitely improved.
- I did not know this institution prior to its use of computerised timetabling, but I think it is safe to say that it has improved planning.
- We intend to use Syllabus Plus, once installed, to improve planning.
- Improved effectiveness of use of rooms.
- No financial savings at present, however it is hoped that savings can be made during the next couple of years once the system is refined.

## BASIC DATA UNEDITED

## Institutions with 5-10,000 FTE Students

- The introduction of timetabling was linked to the introduction of the Common Academic Framework (CAF). This has saved money as it is a modular scheme, allowed us to rationalise space, there is academic staff time saved and there has been better use of space.
- Room savings, better room utilisation. Improved course delivery, fewer student clashes/staff clashes.
- Space benefits – networked access to all timetabled space allowing informed planning of delivery patterns. Time savings – schools given direct access to alter requests, move sessions etc.
- Yes.
- We can quickly identify rooms in use for space survey.

**Question 9. Please indicate the organisational location of the staff responsible for the functions shown (the numbers of responses is shown: 0.5 means two locations mentioned)**

	Registrar/ Secretary's Office	Estates/ Buildings Office	VC's Office	Faculties/ Schools/ Depts	Exams Office	Plan Office	Conf Office	Security	Common Services	Other
Scheduling lectures	11	4		7						
Scheduling Exams	19			1	3					
Ad-hoc room bookings	10	8		1			1	1	11	1
Conference Room bookings	1	10					9		1	1

Several institutions reported that scheduling is done in depts/schools but room allocation is central.

**Question 10. If you have central computerised timetabling:**

**Are data entered centrally, in Departments/Schools or in both?**

- Centrally, mainly, but student course choice comes from student systems (batch mode).
- Centrally.
- Centrally.
- Centrally.
- By departments.
- Centrally.
- Centrally, but we are planning a move to departmental entry from 2003.
- Each school/dept has a timetable rep who constructs their timetable. This is then fed into the centre for room allocation.
- Data entered by schools, but scheduled centrally.
- Departments produce un-roomed timetables. Rooms allocated centrally.
- Schools.
- Centrally.
- Both.
- Prepared by departments and schools, entered centrally.
- Centrally in timetabling unit.
- Schools.
- Centrally.
- Centrally.
- Centrally with information fed from departments via electronic bids.

**How many TT staff employed centrally and what type?**

- 3 clerical (8K students).
- 0.25 FTE of grade 3 admin.
- 2 FT admin and 1 FT academic during peak periods (6,700 FTE students, 340 courses).
- 2 clerical.
- 1.5 FTE (clerical).
- 0.5 admin.
- 1.5 FTE admin.
- 2 FT staff in central timetabling [NB room allocation only], 1 SALC and one clerical; we hope to employ another by the end of the year.
- 0.6 FTE in central Registry, impossible to estimate schools.
- 0.7 admin, 1.0 clerical.
- 3 centrally, plus 1 per school.
- Academic staff (departmental reps) work with an academic member responsible for overall input of data.
- 1 clerical.
- 2.5 admin staff; 0.5 booking clerk during busy periods.
- 1 academic full-time, 2 clerical part-time.
- 1 manager and 1 assistant.
- 3 FTE clerical.

- 2 academic related.
- 0.5.

***Number of students and courses scheduled centrally and number by computer?***

- 8,000 students, approx 1,200 courses
- 7,400 students, approx 1,300 modules, (ie all undergraduate modules but no postgraduate modules) scheduled centrally, using a computer-assisted manual process.
- 6,700 FTE students, 340 courses. All are entered onto our system and roomed, unless the faculties have previously planned the timetable, eg PT courses, workshop based courses.
- 4,000 students, 900 central courses centrally room-booked via computer.
- Approx 7,000 students and 2,000 activities, all by computer.
- Students – 5,200 + 2,000 graduates not held in system. Courses – 5,700.
- FT and PG approx 14,000, pretty much all of these are scheduled centrally.
- 12,500 students, 400+ programmes, 2000+ modules, all computerised.
- 9,000 students, all by computer.
- Over 2,500 modules on database.
- Not scheduling by student choice at the moment.
- None.
- 262 programmes of study, 4,364 students, all by computer.
- 5,013 students, 431 courses (held in CMIS).
- Approximately 13,000 students, majority on system.
- 12,500 for 2,000 courses.
- 8,000 students are scheduled centrally by computer.
- Approx 4,500 students, approx 800 courses, all by computer for exams. Courses only for lecturing/seminar timetable.

***Is the system linked to a course database and/or to a student database?***

- Yes but in batch mode only.
- No.
- No.
- Linked to a course database, but not to a student database.
- No.
- Yes – student records system.
- No, but we hope to do this in the near future.
- Not at present.
- Course database.
- No.
- Data can be updated and imported annually.
- It can be.
- No.
- Student database.
- No.
- Yes.
- No, but will be in the future.
- No.

***Does the system provide output in WWW format, and if so, in relation to what (eg staff, groups, individual students, rooms)?***

- Only in the form of text listing of the timetable.
- No.
- Currently undertaking a project with this in mind, but progress is very slow.
- Not at present.
- Yes, it outputs course information and timetable details, but not specific teaching room info.
- Hoping to set up, but not at the moment.
- Yes – room/department/date view.
- No, but again I hope to be able to do this by the end of 2002.
- Yes – Groups, staff, rooms.
- Room timetables, course and module timetables.
- No.
- Yes.
- It can do but we don't do that at present.
- The whole timetable is up on the web (rooms, staff, students, courses etc).
- No.
- Currently developing.
- Yes.
- Yes – units (modules), programmes and rooms all available.
- Course information for lecturing and seminar timetable is WWW.

***Do you charge user departments directly for the space they book, perhaps to discourage overbooking?***

- Not currently.
- No.
- No.
- Unfortunately not (pity!).
- General space charging is levied by Estates, but not for individual bookings.
- Via Finance dept.
- No.
- No but this is something we are looking into.
- No.
- Not directly.
- No.
- Yes.
- No.
- No.
- No.
- No.
- No.
- Yes.
- No.

***Do you schedule specialist rooms such as laboratories?***

- Yes.
- Yes.
- Yes, in some instances, but otherwise we attach rooms to events where we are requested by the faculties – ie the decision process is not handles by the TTU, but a central record is kept and clashes monitored.
- Mostly not – fewer than 4.
- No.
- No, done in departments.
- Some but not all.
- At present this is departmental space, but it may in future come under central control.
- Yes.
- Computer labs.
- Not yet.
- Yes.
- No.
- Yes.
- No.
- Yes.
- Yes.
- Yes.
- No.

***Do you allow the system to run freely or are significant constraints placed on it?***

- All timetabling is manual/interactive, no automatic scheduling (using S+).
- Most events have varying degrees of constraints associated.
- Many constraints.
- Significant constraints.
- There are significant constraints, caused by departments having priority use of some rooms.
- Quite a few constraints are placed on the system.
- Constraints placed on staff, rooms, class size.
- Constraints are placed on it. We are moving towards full scheduling so hope to allow the system to run, although constraints will still be needed.
- Constraints – part time students, movement between sites.
- No constraints other than those essential such as lecturer availability and course complexity.
- Rooms booked centrally.
- No auto-scheduling at present.
- No.
- Constraints are placed on the system.
- Manual scheduling with minor constraints regarding lecturer availability, student lunch hours, travel between sites.
- Mixture. Try to encourage freely.
- Constrained.
- Differing groups place differing levels of constraint.
- There are constraints, for specific rooms have departmental priority.

***If there are constraints, what are the obstacles to removing them?***

- Too numerous to detail!
- Academic and student culture regarding "acceptable" days/times.
- Historical, the block modular timetabling system we operate by design is a constraint on modules. Staff availability, room sizes, equipment etc.
- Departmental room priorities aid convenience and compensate for planning inefficiencies.
- Inflexibility of certain types of teaching and lecturer unavailability, avoidance of clashes between core lectures.
- Staff research time would be affected. Student recruitment would be capped.
- Politics! Timing of lectures, lecturer availability.
- Increased shared teaching across depts or more complex modular courses constrain our ability to find solutions.
- We are in the process of identifying constraints from an academic staff perspective.
- Lack of cooperation from staff not prepared to accept change or not prepared to let the system run freely.
- Part time lecturer availability. Staff research commitments, non-undergraduate teaching commitments.
- The event may remain unscheduled and the schools are responsible for solving.
- Academic staff!
- Unconstraint them are first scheduling (sic).

***What are the benefits of the system now, to students, staff and the institution as a whole?***

- Survival
- (Mostly) manages to honour vast breadth of available module options.
- Central records are held, management reporting available. Space is more accountable. Ad hoc booking system is more efficient. Shared space is a huge advantage. Rules of timetable enforced centrally and therefore largely adhered to.
- No more room clashes. Professional output to display info.
- The non-medical timetabling process is quick, cheap and reliable.
- Should be more cost-effective, less chance of clashes in student timetables and lecturers being overbooked.
- Overview of room availability. Complex requirements managed.
- An organised system, however by the end of the year we hope to be better, by being able to publish on the Web and to introduce scheduling in order to get better utilisation.
- Transparency. Far fewer double bookings. Ability to report.
- Greater transparency.
- The main benefit is having an online system which staff can use to see bookings and space availability.
- Couldn't run the Common Academic Framework (see Q 8) without it. Better choice for students. Effective use of staff time, even use of space, better delivery of information, improved information source.
- Fewer student clashes. Prevents lecturer clashes and room clashes. Able to check viability of new courses at planning stages. Better room utilisation.
- Networked system creates faster and more accurate data. Decisions made by informed staff.
- It works! A timetable is produced that is workable and is the best compromise solution considering the constraints it is running under.
- Overall view of timetable, fair allocation of resources.

***What are the disadvantages?***

- Space inefficiencies, expertise rooted in one person, timetabling is manual so takes 5-6 weeks in total.
- Faculties "lose control". Process may seem slower to end users as the TTU has to take an institutional perspective, especially with allocating rooms. Extra line of communication is introduced and slows up procedure. Academics often have negative opinion of central staff.
- Time consuming for simple tasks. Unhelpful, slow support from CMIS.
- Decentralised timetabling is ineffective and inefficient. It is also difficult to change or improve.
- Depts still try to overbook, more rooms asked for than required. Limited number of rooms available and system occasionally places lectures at inappropriate times. The system also has a habit of unscheduling things when simple changes are made.
- System is not user-friendly, so pools of expertise must be set up and fostered. System has many quirks and flaws.
- Extra workload associated with supporting a computer system and training/supporting those using it.
- We are not currently using the system to its full potential. The main disadvantage is that people perceive S+ as a "cure-all" system.
- Loss of local control.

- At present not able to publish timetable on web. Changes made continually throughout year, so any printed version of timetable given to students is out of date as soon as it is printed.
- Lack of understanding of departmental needs on occasions.

**Question 11. Further Comments**

- Networking with other timetablers is an enormous benefit, and computerised timetabling facilitates this.
- Rooms are booked centrally (via a customised "hypercard" software program). However, timetabling (scheduling of teaching) is undertaken at Faculty or Departmental level, using a variety of methods.

**GROUP 5. INSTITUTIONS WITH FEWER THAN 5,000 STUDENTS**

**Question 5. Awareness of Available Systems**

Name	Know of system	If evaluated, means used					System is used here
		Views of others	Reviews	Visits to users	Testing or use	Other	
Adesoft	1						
Celcat	8				3		5
Facilities	3						1
Infosilem							
Syllabus Plus	6						1
Other	1					1	
GTI	1						1

In the institution concerned, the only product reported in use was GTI, used in one Faculty only.

**Question 6. If you have recently carried out a formal comparison of systems and are able to make comments, please do so below.**

**Question 7. What advice would you give to staff from other institutions who were about to introduce computerised timetabling?**

- Ensure that key users are involved in all presentations. An academic perspective is not the same as administrative.
- Although we introduced computerised timetabling in 1994, my advice would be as follows: purchase robust software which does what you need it to do. Ensure the hardware has sufficient power to drive the system. Senior management need to appreciate the importance of timetabling and to allocate resources accordingly. It also helps if the system is user-friendly. Academic staff need to be responsible and realise that the system can't perform miracles. Sensible source structures and module descriptors help too.
- Make sure you have all the timetable requirements from the academics before you make a start on the actual timetabling. Always give a deadline!

**Question 8. Has computerised timetabling led directly to any identifiable financial savings, space benefits or to other benefits such as improved planning and delivery of courses?**

- We implemented a new curriculum in 2000. We have also merged within the last couple of years and hence have a much larger student population. CMIS has assisted in the planning and timetabling of the new curriculum.
- Rooms booking only, not timetabling.
- More secure planning and efficiency of timetables reflects our greater departmental organisation.
- Yes, we have been able to use teaching rooms for other use giving better VFM.
- Improved planning and clash checks particularly useful for room planning etc.
- Difficult to evaluate.
- Computerised timetabling, with availability to view to all on the web, has significantly improved timetabling and use of academics' time and space.

**Question 9. Please indicate the organisational location of the staff responsible for the functions shown (the numbers of responses is shown: 0.5 means two locations mentioned)**

	Registrar/ Secretary's Office	Estates/ Buildings Office	VC's Office	Faculties/ Schools Depts	Teaching Office
Scheduling lectures	2	1		4	1
Scheduling Exams	5			2	1
Ad-hoc room bookings	1	4		1	1
Conference Room bookings	2	6		1	1

**Question 10. If you have central computerised timetabling:  
Are data entered centrally, in Departments/Schools or in both?**

- Core data (rooms, lecturers etc) are entered centrally. This school uses CMIS for timetabling and booking rooms. We add further details such as class groups, modules etc.
- Central.
- Central.
- Centrally, but hope to move to departmentally.
- Departments.
- Both. The TTO has restricted the permissions available to school schedulers. There are some functions that can be performed only in the TTO.
- Departmentally

**How many TT staff employed centrally and what type?**

- Several admin staff work on different areas of timetabling.
- 1 clerical
- 1 administrative.
- 1 admin, 1 clerical, but both have other duties.
- 2 admin
- 1 clerical. He liaises with 2 academic staff and 2 admin staff in schools (5 staff in total).
- 1 per department. Admin post in this department (500 students).

**Number of students and courses scheduled centrally and number by computer?**

- This school schedules its own students and courses.
- 800 students, 350 courses.
- 3,500 students, 1,500 activities.
- 600 students, 8 courses.
- 4,000+ students and 80+ courses which expand to 270+ years of courses. All courses are scheduled jointly between the central clerical officer and four scheduling staff in the schools.
- 500 students approx, 194 courses.

**Is the system linked to a course database and/or to a student database?**

- Yes, centrally [at institutional level].
- No.
- No.
- This year it will be.
- Both.
- Not yet.
- Web (sic)

**Does the system provide output in WWW format, and if so, in relation to what (eg staff, groups, individual students, rooms)?**

- Yes, this school has developed personalised web-based timetables using CMIS data.
- Yes – rooms/courses.
- No.
- Yes – rooms/dept timetables.
- Yes, all.
- We have a web publisher for staff, groups and rooms. It can cope with individual student timetables but is not set up for this yet.
- All these, and courses

**Do you charge user departments directly for the space they book, perhaps to discourage overbooking?**

- No. Has been considered though.
- No.
- No.
- Not yet.
- No.
- Not yet.
- No.

**Do you schedule specialist rooms such as laboratories?**

- Yes. Dry and wet laboratories. College computer cluster rooms are also scheduled by IS using CMIS.
- No.
- Yes.
- No.
- Yes.
- Core IT labs yes. Schools schedule specialist IT/Science labs.
- Yes.

**Do you allow the system to run freely or are significant constraints placed on it?**

- The system does not run freely.
- Limited access.
- Freely.
- Yes.
- Web page is only accessible within the School. Only Teaching Office version allows input of change.
- There are constraints placed on the write access given to school schedulers. The software is only constrained by what it was designed to do.
- Freely.

***If there are constraints, what are the obstacles to removing them?***

- Network configuration.
- Few.
- This is not a "timetabling" software application. It requires active intervention by staff. No automatic scheduling feature.
- There are many constraints – time/staff accessibility, room size etc.

***What are the benefits of the system now, to students, staff and the institution as a whole?***

- The room booking dept has made very significant savings on not having to extend space outside the institution. As a school, it has allowed us to use space more effectively (particularly labs) and the major benefit is web based timetables.
- Transparency of room availability.
- More efficient. Less room for error.
- Info more accurate. No double room bookings.
- Timetables more uniform, easy to read and print. Web site allows students and staff access to check own/other people's timetables, room availability etc.
- More accurate timetabling and better use of resources should in theory be possible.
- Easily accessible, i.e. on our web site (intranet).

***What are the disadvantages?***

- CMIS is not the most intuitive software to use. The reporting is poor and difficult to use. I export data from CMIS to Excel if I wish to do any analysis or stats.
- No timetabling yet.
- Academic departments feel their flexibility is impinged upon.
- There are significant changes but this is not the fault of the database.
- The system can and does crash. Only basic statistics are available from the current version of Celcat installed here (v 4.6).
- Only one person in the department knows how to use the software.

***Question 11. Further comments***

- Student numbers here are small and we are primarily research based so no need for computerised timetable.