**WebCT as a Student Support Service in the Cork Institute of Technology**

**Note:** Since the time of writing the Cork Institute of Technology have signed a three year contract with WebCT and have upgraded its licence to an unlimited Campus Edition, which has the obvious advantage of allowing the institute an unlimited number of students (and staff) accounts. A further main benefit of upgrading is that Campus Edition features an Enterprise Integration Framework - a collection of data-exchange tools, adapters, and specifications that facilitate the integration of WebCT with a wide array of campus systems. In addition as e-learning becomes mission critical, WebCT Campus Edition supports the ability to build in server fail-over, a feature not facilitated with the pilot license. It is anticipated then that in 2005 e-learning provision in the Cork Institute of Technology will increase in popularity, sophistication, integration with existing systems and robustness.

**Global Context**

E-learning has in recent years attracted much attention at all levels of the education and training world. E-learning courses have proliferated - one reliable source has catalogued no less than 66,000 fully online courses. Governments and policy makers have made it a central imperative of their political educational rhetoric and provide substantial funding initiatives to support its development and mainstreaming - the EU e-learning action plan for the 2005-2006 period alone, for instance, has a budget of 36 million EURO. We have become used to seeing e-learning companies quoted on the world’s stock exchanges. A ream of books have been published in the field, dozens of specialist periodicals launched and every year there is a growing number of conferences and seminars devoted to all aspects of e-learning.

In the higher education sector the changing learning needs of our society today, falling public revenues, the emergence of new online post-secondary education and training providers, the increasing “massification” of higher education as well as the promised benefits, economic, organisational and pedagogical, of e-learning, to name

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1 Quoted in Paulsen 152.
but a few factors, have all added to the pressure upon traditional higher education institutes to implement some form of e-learning.\(^2\) Their response is reflected in a 2004 Gartner report which suggests that student participation in what they term “higher-education e-learning” is now moving past the 50 percent mark “and will soon encompass a large majority.”\(^3\) America is clearly leading the way: a 2003 Sloan Consortium study indicates that 97.6\% of all public higher education institutions in USA offer online learning degree programmes and courses, either as fully online programmes or as blended modes.\(^4\)

**E-Learning and Learning Management Systems**

Higher education in general have tended to support their e-learning efforts through the use of commercial learning management system server software such as TopClass, WebCT or Blackboard. As Paulsen has written “Much of the success of e-learning can be attributed to the availability of Learning Management systems (LMS), also known as Virtual Learning Environments (VLE) or learning platforms.”\(^5\) In support of this view are statistics from Gartner group which state that 76\% of institutions have selected a standard CMS (Course Management System).\(^6\) A number of definitions exist but these systems are to be basically defined as server software that supports the facilitation and management of web-based learning - providing various tools and features to offer web-based content and activities, track and manage students, and support various communication and assessment processes. In the next chapter the precise nature of the features and functionalities that an LMS offers will be explained, for now we are concerned still with their usage and their contribution to e-learning integration at higher education.

Not all LMS of course are commercial systems, some are self-developed or “home-grown” solutions. All of the well-known systems, in point of fact, mentioned

\(^3\) Yanosky
\(^4\) Quoted in Nipper 225.
\(^5\) Paulsen 152.
\(^6\) Not to be confused with Content Management Systems (also “CMS”), which are briefly described in the next chapter In the sense used by Gartner Course a Management System is the same as a Learning Management System as we have defined it here.
above actually emerged out of research in traditional higher education institutes. Thus graduate students at Cornell developed a product called CourseInfo which was bought by Blackboard.com and eventually its name changed to Blackboard.\textsuperscript{7} Around the same time WebCT was developed by Murray Goldberg of the University of British Columbia in Canada and TopClass after which it was purchased by US company Universal Learning Technologies.\textsuperscript{8} TopClass, finally, originated from a Leonardo Da Vinci project co-ordinated by the University College Dublin before an Irish campus company was set up which eventually migrated, again to the US. The point is well made however that…

\[\text{while academics, of course, often build and use their own platforms and tools, especially when the technology is at an early stage and commercial off-the-shelf (COTS) products are not readily available…over the longer term…home-grown technology systems will find it hard to compete with CTOS products. Academics excel at R&D, but usually not at the technical support and marketing needed to maintain and grow successful commercial operations.}\textsuperscript{9}\]

Reliable data is rare enough but another Leonardo Da Vinci project, entitled “web-edu”, which looked at the use of LMSs across Europe did find, after surveying a total of 113 higher education institutes, that as many as “52 different commercial and 35 self-developed LMS systems”\textsuperscript{10} were in use. Only a few systems, however, were used by a number of institutes. These systems are summarised below in a table from Paulsen under the item headings of “European-developed” and “North American”.

<table>
<thead>
<tr>
<th>European Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classfronter (16 institutions used it)</td>
</tr>
<tr>
<td>TopClass (7 institutions used it)</td>
</tr>
<tr>
<td>Luvit (5 institutions used it)</td>
</tr>
<tr>
<td>Tutor2000 (5 institutions used it)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>North American systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebCT (20 institutions used it)</td>
</tr>
<tr>
<td>Blackboard (14 institutions used it)</td>
</tr>
</tbody>
</table>

\textsuperscript{7} See Blackboard
\textsuperscript{8} Paulsen 171.
\textsuperscript{9} Baer 461-462.
\textsuperscript{10} Paulsen 163.
The predominance of the WebCT LMS is echoed by Gartner group research that which 38% of institutions have “standardized on WebCT.”11

**E-Learning in the Cork Institute of Technology**

The Cork Institute of Technology has been involved in a number of ODL and e-learning initiatives since 1992 when it set up the DEIS centre to carry out a EUROFORM project in the area – since then this same organisation, which has still become a department, has been involved in a number of projects in the e-learning field, as typically funded under the SOCRATES: MINERVA and LEONARDO DA VINCI initiatives, involving other departments within the institute in these project and building up a network of partners across the European Union, many of whom are highly prestigious institutes of their kind both within their own countries and internationally.

The DEIS department has been involved in a number of institute-based pilots with a range of e-learning technology, in particular Learning Management Systems12 (LMSs) which are, as indicated above, central, worldwide, to efforts to implement e-learning at higher level.13 Currently the institute has a pilot license for the WebCT commercial LMS which is also used by a number of institutes across the country, e.g. Dublin Institute of Technology; Tralee Institute of Technology; Osca, the Irish National Distance Education Centre and CampusOne, the University of Ulster’s ‘e-learning at a distance’ offering. Almost 900 students in the Cork Institute as of September 2004 are currently registered on the system.

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11 “According to Gartner Research”
12 Here defined as “server software that supports the facilitation and management of web-based learning”
13 Paulsen 152.
Of particular interest is an ongoing retention initiative by the Maths department, headed up by Pat Ahern, which provides a range of WebCT-based support for students who may be experiencing difficulty with mathematics. A number of key units have been developed, covering some of the main areas of difficulty. Students can work at their own pace and to test their own progress at any point in the process through auto-marked online testing, students also have access to online tutors. The project is intended as a supplement to regular class work, but not as a replacement and care is being taken to ensure that students do not use the service as an alternative to full attendance at lectures and a number of measures are being considered in this regard. Full implementation will take place in September 2004, with additional units being uploaded on a continual basis.

As per the terms of the e-learning strategy document WebCT is currently viewed as a form of student service, i.e. as a complement rather than a replacement for conventional provision, an online ‘anytime, anywhere’ virtual space in which learning resources, materials and support is provided. In time however it is anticipated that the mainstreaming of WebCT and the growing expertise within the DEIS department and elsewhere in the institute with regard to its use and the support of e-learning in general will lead to the development of e-learning at a distance courses.

**The Survey**

As part of the Socrates-Student Support Services in e-Learning project the DEIS Department of Education Development undertook to run a survey of student satisfaction with the WebCT system. The questionnaire was originally designed by the project co-ordinator, Ericsson Competence Solutions, Dun Laoghaire; the DEIS department subsequently made some changes to this survey, as it was thought to more reflect the typical offerings of a full-time distance education institute such as the NKI Distance Education in Oslo or the Fernuniversitat in Germany, who are also partners of the project. By contrast, the Cork Institute of Technology, as indicated above, use e-learning as a complement to its face-to-face delivery. Some of the questions were dropped outright from the original questionnaire and others, although retained, would,
it was realised, have quite a different interpretation within the CIT context than they might within the context of distance education organisations. Nonetheless the survey was made available to students of a number of CIT online offering relating to the following courses:

- BBS MIS Section C ACCS – Bachelor in Business Studies, Accounting
- BBS MIS Section C - Bachelor in Business Studies, Management Information systems
- BBSIS2 Maths & Stats – Bachelor in Business Studies (Information Systems), Year 2, Maths and Statistics
- DCIS3 Maths – Bachelor of Science (Computerised Instruction Systems) Year 3
- NDFLM – National Diploma in Front Line Management

In addition the survey was placed up on the WebCT space for…

- A Short Course in the WebCT LMS and
- Short general module in Mathematical Limits
The questionnaire was prepared using Respondus software and then uploaded, with the relevant lecturer’s permission, to each of the WebCT areas indicated above.

Response rates were not as high as might have been hoped with a total of just 26 respondents, this low response rate can possibly be explained in terms of:

- The fact that little effort was made to draw attention to the presence of the survey on the system. In many cases the survey was “hidden” behind a general link entitled “Tests and Surveys”, which contained other assessment/survey tools.
- The lack of incentive for students to get involved in the survey: many online surveys now offer participants some thing, be it vouchers or credits or access to some new feature, in return for their participation in a survey.
- The length of the survey – even after the DEIS department had whittled down the survey it was still 28 questions long, which may have been regarded as overly long by some students
- The time of running the survey, which was from May 2004 until the middle of September (the project officially ended at the end of September) – times of high WebCT usage would tend to be from October onwards until perhaps April (excluding holidays)

Nonetheless the survey was not without some interesting findings which will guide future development of WebCT provision and the design and development of further and more wide-spread surveying of user attitudes and satisfaction rates.
The Findings

In all 26 responses were logged, with the breakdown between the various classes as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>N.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBS MIS Section C ACCS</td>
<td>1</td>
</tr>
<tr>
<td>BBS MIS Section C</td>
<td>8</td>
</tr>
<tr>
<td>BBSIS2 Maths &amp; Stats</td>
<td>1</td>
</tr>
<tr>
<td>DCIS3 Maths</td>
<td>7</td>
</tr>
<tr>
<td>NDFLM</td>
<td>1</td>
</tr>
<tr>
<td>WebCT</td>
<td>2</td>
</tr>
<tr>
<td>Limits</td>
<td>6</td>
</tr>
</tbody>
</table>

A breakdown for each of the main questions follows.

Question 1:

There was an almost equal proportion of Male and Female respondent with 14 females and 12 males.
Question 2:

Unsurprisingly the vast majority of respondents were students (13 in all), with 5 Teachers/Trainers and one individual with a technical background.

Question 3:

Again as might be expected the vast majority of respondents were under 24.

Question 4:
Just over half of the respondents reported that they had 4+ post-secondary years of education, with 11 reporting that they had 1-3 years of post-secondary education, two had completed their Leaving Cert.

**Question 5:**

Respondents were asked to indicate which student support services they felt should be made available online.

![Bar chart](chart.png)

**Legend**

a. Online Learning Materials, i.e. online course content
b. Supplementary materials, e.g. past exam papers, class handouts etc
c. Relevant Web Links, a “virtual library”
d. Communication via Electronic Mail with a tutor/teacher (within or outside the WebCT system)
e. Communication via Electronic Mail with other students (within or outside the WebCT system)
f. Discussion forums
g. Assignments for online submission
h. Online feedback on online assignments
i. ‘Self-tests’ and multiple-choice-type quizzes
j. Technical Assistance with the system
As may be seen the most important services were thought to be those of *Online Learning Materials, Supplementary Materials, and ‘Self-tests’ and multiple-choice-type Quizzes*. The least important services were thought to be those *Communication via Electronic Mail with other students, Communication via Electronic Mail with a tutor/teacher and Technical Assistance with the system*

**Question 6:**

Respondents were asked to indicate which student support services they used as part of their e-learning course, with results as follows:

![Bar Chart]

<table>
<thead>
<tr>
<th>Legend</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Online Learning Materials, i.e. online course content</td>
</tr>
<tr>
<td>b. Supplementary materials, e.g. past exam papers, class handouts etc</td>
</tr>
<tr>
<td>c. Relevant Web Links, a “virtual library”</td>
</tr>
<tr>
<td>d. Communication via Electronic Mail with a tutor/teacher (within or outside the WebCT system)</td>
</tr>
<tr>
<td>e. Communication via Electronic Mail with other students (within or outside the WebCT system)</td>
</tr>
</tbody>
</table>
f. Discussion forums

g. Assignments for online submission

h. Online feedback on online assignments

i. ‘Self-tests’ and multiple-choice-type quizzes

j. Technical Assistance with the system

As may be seen the most used services are, far and away, those of *Supplementary materials, Online Learning Materials*. The least used service was that of *Technical Assistance* which may indicate how reliable and robust the system is in general.

Correlating question 6 and 7 shows a reasonable degree of correlation between the two for services a, b, d, e but less so for services g, h, i, and j (i.e. they actually use services which they earlier stated they did not feel “should be made available online”

![Bar graph showing average responses to questions 9-28](image)

*Average Responses to Questions 9-28 (where 1=Strongly disagree and 5=Strongly agree)*
Questions 9-28:

The remainder of the survey consisted of a series of statements with regard to the online support system, against which respondents were asked to indicate a level of agreement, on a scale of 1-5 where 5 indicated strong agreement and 1 represented strong disagreement. The statements and the average response were as follows:
Results, as may be seen, were fairly average, i.e. participants in general didn’t seem to feel too strongly one way or the other, with an overall mean of 3.13.  Contradictions

<table>
<thead>
<tr>
<th>Statement</th>
<th>Average Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>I made extensive use of the student support services provided via WebCT in the institute.</td>
<td>3.48</td>
</tr>
<tr>
<td>The availability of online learning materials was very useful to me as a student.</td>
<td>4.19</td>
</tr>
<tr>
<td>Please indicate how important you feel it is to include online learning materials as part of an e-learning support service.</td>
<td>2.35</td>
</tr>
<tr>
<td>The availability of online learning materials was very useful to me as a student.</td>
<td>4.38</td>
</tr>
<tr>
<td>Please indicate how important you feel it is to include online learning materials as part of an e-learning support service.</td>
<td>2.25</td>
</tr>
<tr>
<td>The availability of supplementary online materials was very useful to me as a student.</td>
<td>3.92</td>
</tr>
<tr>
<td>Please indicate how important you feel it is to include supplementary online materials as part of an e-learning support service.</td>
<td>2.3</td>
</tr>
<tr>
<td>The availability of relevant web link was of benefit to me as a learner.</td>
<td>3.88</td>
</tr>
<tr>
<td>Please indicate how important you feel it is to include web links as part of an e-learning support service.</td>
<td>2.44</td>
</tr>
<tr>
<td>The bulletin boards and/or discussion forums were useful.</td>
<td>3.08</td>
</tr>
<tr>
<td>Please indicate how important you feel it is to include bulletin boards and or discussion forums.</td>
<td>2.58</td>
</tr>
<tr>
<td>The email facility was a useful way of contacting other course participants and the tutor(s).</td>
<td>3.56</td>
</tr>
<tr>
<td>Please indicate how important you feel it is to include a facility to contact other course participants and the tutor(s).</td>
<td>2.58</td>
</tr>
<tr>
<td>The assessment systems included were of benefit.</td>
<td>3.76</td>
</tr>
<tr>
<td>Please indicate how important you feel it is to include assessment systems.</td>
<td>2.46</td>
</tr>
<tr>
<td>Please indicate how important you feel it is to include feedback on assignments.</td>
<td>2.38</td>
</tr>
<tr>
<td>The availability of contact with a tutor was of benefit.</td>
<td>2.2</td>
</tr>
<tr>
<td>Please indicate how important you feel it is to include availability of contact with a tutor.</td>
<td>3.44</td>
</tr>
</tbody>
</table>
within the results may reflect a lack of understanding of certain questions by the respondents (i.e. the average rating for “how important you feel it is to include supplementary online materials as part of an e-learning support service” was only 2.3 but for the statement “The availability of supplementary online materials was very useful to me as a student” the average was 3.92 a larger sample would presumably work out such inconsistencies.

Conclusions

As has been indicated the sample for the survey was low, with just 26 respondents; it is therefore not possible to argue for statistical significant results. Overall satisfaction ratings are relatively high however and output from questions six and seven has already proven useful in efforts to match online provision with need. The heavy bias of the results towards content-related services and quizzing however need not necessarily mean that CIT should devote all its efforts here but may rather indicate the need to train students how to use the system to interact more with each other and to use the learning group at large as a further learning resource within the online course.

Probably the greatest gain in carrying the survey however was in its role as groundwork for a more extensive survey which is now planned for early next year, based on the above and also focussing on student satisfaction which will become part of a more extensive e-learning planning exercise for 2005 onwards.
References


   <http://www.heanet.ie/about/index.html>

Bates, A W (Tony). Managing technological change: strategies for College And


“Implementing WebCT: DIT's institutional strategy”. HEA National Networking
   <http://www.heanet.ie/conferences/2003/presentations/Thursday/RocheORourke pdf>


Nipper, Søren.” Online Learning in Denmark: A Personal Account”. Online
   Education and Learning Management Systems: Global E-Learning in a
   230.

   Technology. ND.

Paulsen, Morten Flate. Online Education and Learning Management Systems: Global

“Projects Funded Under The Canada-European Community Program For Co-
   C_projects.shtml&hs=iyp#2003>

“RAMIE: Researching Assessment Methodologies and Instruments for E-Learning”.
   DEIS Department, Cork Institute of Technology. 6 May 2004. Accessed 7


APPENDIX A

Student Support Services Survey from WebCT

Number of questions: 28

**Question 1**
Are you Male or female? (please tick one)

- a. Male
- b. Female

**Question 2**
What is your occupation? (please tick one)

- a. Managerial
- b. Technical
- c. Teacher / Trainer
- d. Student
- e. Unemployed

**Question 3**
Which age group do you belong to? (please tick one)

- a. 24 or younger
- b. 25-29
- c. 30-39
- d. 40-49
- e. 50 or over
Question 4
What is your highest level of education? (please tick one)

☐ a. Leaving Certificate
☐ b. 1 – 3 years post-secondary
☐ c. 4+ years post-secondary

Question 5
Please indicate which of the following student support services you feel should be made available online (Tick the relevant boxes)

☐ a. Online Learning Materials, i.e. online course content
☐ b. Supplementary materials, e.g. past exam papers, class handouts etc
☐ c. Relevant Web Links, a “virtual library”
☐ d. Communication via Electronic Mail with a tutor/teacher (within or outside the WebCT system)
☐ e. Communication via Electronic Mail with other students (within or outside the WebCT system)
☐ f. Discussion forums
☐ g. Assignments for online submission
☐ h. Online feedback on online assignments
☐ i. ‘Self-tests’ and multiple-choice-type quizzes
☐ j. Technical Assistance with the system
☐ k. Other

Question 6
If you answered 'Other' to the previous question, please specify here

Answer: [ ]
Question 7
Please indicate which student support services you used in your elearning course (Tick the relevant boxes)

- a. Online Learning Materials, i.e. online course content
- b. Supplementary materials, e.g. past exam papers, class handouts etc
- c. Relevant Web Links, a “virtual library”
- d. Communication via Electronic Mail with a tutor/teacher (within or outside the WebCT system)
- e. Communication via Electronic Mail with other students (within or outside the WebCT system)
- f. Discussion forums
- g. Assignments for online submission
- h. Online feedback on online assignments
- i. ‘Self-tests’ and multiple-choice-type quizzes
- j. Technical Assistance with the system
- k. Other

Question 8
If you answered 'Other' to the previous question, please specify here

Answer: 

Question 9
I made extensive use of the student support services provided via WebCT in the institute

- a. Strongly Agree
- b. Somewhat Agree
- c. Neither Agree or Disagree
- d. Somewhat Disagree
- e. Strongly Disagree
Question 10
The availability of online learning materials was very useful to me as a student.

- a. Strongly Agree
- b. Somewhat Agree
- c. Neither Agree or Disagree
- d. Somewhat Disagree
- e. Strongly Disagree

Question 11
Please indicate how important you feel it is to include online learning materials as part of an e-learning support service.

- a. Very unimportant
- b. Unimportant
- c. Neither important nor unimportant
- d. Important
- e. Very Important

Question 12
The availability of online learning materials was very useful to me as a student.

- a. Strongly Agree
- b. Somewhat Agree
- c. Neither Agree or Disagree
- d. Somewhat Disagree
- e. Strongly Disagree
Question 13
Please indicate how important you feel it is to include online learning materials as part of an e-learning support service.

- a. Very unimportant
- b. Unimportant
- c. Neither important nor unimportant
- d. Important
- e. Very Important

Question 14
The availability of supplementary online materials was very useful to me as a student.

- a. Strongly Agree
- b. Somewhat Agree
- c. Neither Agree or Disagree
- d. Somewhat Disagree
- e. Strongly Disagree

Question 15
Please indicate how important you feel it is to include supplementary online materials as part of an e-learning support service.

- a. Very unimportant
- b. Unimportant
- c. Neither important nor unimportant
- d. Important
- e. Very Important
Question 16
The availability of relevant web link was of benefit to me as a learner.

a. Strongly Agree
b. Somewhat Agree
c. Neither Agree or Disagree
d. Somewhat Disagree
e. Strongly Disagree

Question 17
Please indicate how important you feel it is to include web links as part of an e-learning support service.

a. Very unimportant
b. Unimportant
c. Neither important nor unimportant
d. Important
e. Very Important

Question 18
The bulletin boards and/or discussion forums were useful.

a. Strongly Agree
b. Somewhat Agree
c. Neither Agree or Disagree
d. Somewhat Disagree
e. Strongly Disagree
Question 19
Please indicate how important you feel it is to include bulletin boards and or discussion forums.

a. Very unimportant
b. Unimportant
c. Neither important nor unimportant
d. Important
e. Very Important

Question 20
The email facility was a useful way of contacting other course participants and the tutor(s).

a. Strongly Agree
b. Somewhat Agree
c. Neither Agree or Disagree
d. Somewhat Disagree
e. Strongly Disagree

Question 21
Please indicate how important you feel it is to include a facility to contact other course participants and the tutor(s).

a. Very unimportant
b. Unimportant
c. Neither important nor unimportant
d. Important
e. Very Important
Question 22
The assessment systems included were of benefit.

- a. Strongly Agree
- b. Somewhat Agree
- c. Neither Agree or Disagree
- d. Somewhat Disagree
- e. Strongly Disagree

Question 23
Please indicate how important you feel it is to include assessment systems.

- a. Very unimportant
- b. Unimportant
- c. Neither important nor unimportant
- d. Unimportant
- e. Very Important

Question 24
The feedback on assignments was of benefit.

- a. Strongly Agree
- b. Somewhat Agree
- c. Neither Agree or Disagree
- d. Somewhat Disagree
- e. Strongly Disagree
Question 25
Please indicate how important you feel it is to include feedback on assignments.

- a. Very unimportant
- b. Unimportant
- c. Neither important nor unimportant
- d. Important
- e. Very Important

Question 26
The availability of contact with a tutor was of benefit.

- a. Strongly Agree
- b. Somewhat Agree
- c. Neither Agree or Disagree
- d. Somewhat Disagree
- e. Strongly Disagree

Question 27
Please indicate how important you feel it is to include availability of contact with a tutor.

- a. Very unimportant
- b. Unimportant
- c. Neither important nor unimportant
- d. Important
- e. Very Important
Question 28
Technical problems encountered when accessing the courses were resolved easily and quickly

- a. Strongly Agree
- b. Somewhat Agree
- c. Neither Agree or Disagree
- d. Somewhat Disagree
- e. Strongly Disagree
## APPENDIX B: Full Results of Survey

### BBS MIS Section C ACCS

| No. | 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  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   | b   | b   | c   | b,a,c | Didnt specify | c | a | e | b | e | a | a | e | d | b | d | d | d | d | d | d |

### BBS MIS Section C

| No. | 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  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   | a   | d   | a   | c   | a,b,c | b | b | d | a | b | a | c | a | c | b | c | d | e | d | d | d | b | e | b | e | b | e | b | e |
| 2   | b   | d   | a   | c   | b,c,none | a | e | b | a | b | a | a | d | e | b | e | b | b | a | c | d | a | e | b | e | b | e | b | e |
| 3   | b   | d   | a   | c   | a,b,--- | a,b,--- | a | a | e | a | a | a | a | a | a | a | d | e | c | e | a | c | c | a | a | a | c |
| 4   | b   | d   | a   | c   | b,d,e,i | b,d | b | b | d | b | d | b | d | b | d | c | d | b | a | a | a | a | b | d | c | a | b | c |
| 5   | 6   | b   | d   | a   | c   | a,b,c,d,g | a,b,d,h | b | a | a | a | d | a | a | a | c | b | a | e | b | d | a | e | a | d | b | e | d | a | c | a | b | e | a | d | a | b |
| 7   | b   | d   | a   | b   | a,b,d,e,f,g | b,i | b | b | a | b | d | b | a | c | d | b | a | c | a | a | a | a | a | a | a | a | b | a | c | a | a | a | c |
| 8   | b   | d   | a   | c   | a,d,g,i | a,b,e | c | b | e | b | e | b | e | b | e | a | a | a | d | a | e | b | e | a | e | a | d | b | e | a | e | a | d | b | e | a | d | b |

### BBSIS2 Maths & Stats

| No. | 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  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   | a   | d   | a   | b   | a,b,c,none | non | k | none | e | a | d | b | d | b | d | b | d | b | d | c | d | c | c | c | c | c | c |
| 2   | a   | d   | a   | b   | a   | online | a | ok | c | b | d | b | d | b | d | b | d | b | d | b | d | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c |

### DCIS3 Maths

| No. | 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  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   | a   | d   | a   | b   | a,b,c,non | k | none | e | a | d | b | d | b | d | b | d | b | d | c | d | c | d | c | b | d | a | e | c | e | a | d | b | c | e | a | d | b |
| 2   | a   | d   | a   | b   | a   | online | a | ok | c | b | d | b | d | b | d | b | d | b | d | b | d | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b | c | b |ail | b
|   | 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 |
|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| NDFLM |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| WebCT for Lecturers |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Limits2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
APPENDIX C: WebCT

WebCT was originally developed by Murray Goldberg at the University of British Columbia in Vancouver, Canada. In 1999 it was purchased by Universal Learning Technologies, an American company based in Pennsylvania, who then changed their company name to WebCT.¹ To this day WebCT maintains a close link with the educational, as opposed to the corporate world, and bills themselves as the “leading provider of e-learning systems for educational institutions.”² The system as licensed today is comprised of Apache web server software, pre-compiled executable and Perl script CGIs; pre-compiled chat and whiteboard servers; various applets from chat, whiteboard and other features, as well as various data files.³ Like most LMSs WebCT provides a range of features, under the following headings, all of which can be combined together by the course designer in any number of different ways:

- Content-related tools
- Communication tools
- Assessment tools
- Student Administration and Management tools

As is the case with typical LMSs no client-side software, beyond a browser, is needed to log into the WebCT environment. What is required in additional to a browser however is a username and password; these identify each registered user uniquely to the system and also serve to distinguish between 3 main kinds of user, each with their own set of user privileges:⁴

- **Administrator:** who creates courses and users (and relates one to the other)

- **Designer:** typically the course instructor who co-ordinates the course, and has a range of tools available to them to create and edit content and add further tools and features to the course

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¹ See Paulsen 171.
² WebCT
⁴ There are more actually – this is a simplification for explanatory purposes
• **Student**: who, by default, has read-only access to content and cannot change the tools and features of the course

Login (or pre-login) pages naturally can be customised for individual courses also and can include other links/content as required. Once users are logged in they would typically be served up the “MyWebCT page which shows them the range of courses they have access to. The MyWebCT page also contains virtual bookmarks, announcements from the administrator and so forth. Once a student user has chosen a course link they are taken to the course homepage which can vary enormously in terms of content, appearance and structure.

Various Communication Tools are provided by the system as follows:

• Discussion: an asynchronous one-to-mail text based tool
• Mail: an asynchronous and typically\(^5\) one-to-one text-based tool
• Chat: synchronous one-to-one or one-to-many text-based tool
• Whiteboard: synchronous one-to-one or one-to-many writing and drawing tool

A range of assessment and assessment related tools are also provided. These include:

• Self tests: basically multiple-choice questions which students use to gauge their own level of knowledge
• Quizzes: auto-corrected tests of various kinds
• Assignments: a tool that allows students to upload files for assessment by a human marker
• Grade Book: a feature that allows the course designer/instructor to collate, and manage student grades
• Student Presentations: allows instructors to create student presentation groups, who can place content on a WebCT course for other users to view
• Student Homepages: allows students to create personal Web spaces/pages, which can contain text, graphics and links, within WebCT course

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\(^5\) As with ordinary e-mail message can be sent to more than one user or to entire classes.
The system can be interrogated to produce and analyse various data relating to student activities in terms of:

- Individual dates of system access
- Hits per page for the class and for individuals in the class
- Grades for the class and for individuals in the class
- Overall Class Progress

Only the most basic of the tools which WebCT offers its different users have been indicated here. The screenshot of the designer’s Control Panel below gives an indication of range of options open to a designer in terms of what kind of content, communication or assessment tools they want to use as part of their online offering.

Many of these tools also have “design wizards” related to them which “talk” designers through each step of the process.