



Annual Report 2011



UNIVERSITY OF COLOMBO
SCHOOL OF COMPUTING

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

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UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

ANNUAL REPORT AND ACCOUNTS FOR 2011

VISION & MISSION

Vision Statement

Create new knowledge, sustain a culture of critical inquiry and foster a spirit of service and commitment to the nation.

Mission Statement

Producing men and women of the highest technical competency with high ethical standards and social accountability, capable of creative, analytical and independent thinking, contributing to national development.

DIRECTOR'S REVIEW

As a centre of Higher Learning in Computer Science, Information and Communication Technology (ICT), the UCSC has continued to train students at undergraduate and postgraduate levels as well as those in the ICT industry with the latest developments in this field. 737 internal undergraduates enrolled for the four degrees programmes offered via the UGC intake. Beside 1160 science graduates were trained in use of ICT in respective scientific domains and 2365 students were provided the opportunity to do the BIT degree as an external student. 143 students were enrolled for the master's degree while 13 enrolled for research degrees. From those who enrolled in previous years 352 completed degrees at undergraduate level and 95 at postgraduate level.

To distinguish from other training institutes UCSC put a lot of emphasis on creating new knowledge through research. While commencing one new research project the staff published 63 conference and journal papers. UCSC also continued to carry out consultancy projects for the government ministries and others, including for an overseas university. Staff and Students continued to be successful at national events winning CERT Quiz and gaining recognition at NBQSA, e-Swabhimani and excelling in Postgraduate Research. Staff continued to be involved in many external committees, boards and professional bodies as their contribution to the society, while students continued with their IT outreach programmes to rural areas targeting school children.

We celebrated a quarter century's worth of achievements last year. We also set out on some ambitious plans for the future. In particular, the UCSC is ready to put into motion its plans for expansion, its venturing into other countries, and active involvement in the wider university system through the Higher Education for the 21st Century (HETC) initiative. Although some of the key planned activities were deviated due to unsuccessful bids for the Undergraduate Development Grant and Post Graduate Development grants from the HETC and some staff was de-motivation for not recognising the efforts putting across detail project implementation plans, the UCSC not only generated an income higher than the main university but also achieved higher employment rate among the university graduates.

Despite being overlooked for the Human Resource Development grants, we were able to attract four MPhil

registrations leading to PhD from other universities. Only successful HETC bid was to strengthen the External Degree Programme which will commence next year. UCSC undertook and successfully completed the HETC funded programmes such as the Pre-Orientation Programme for the training of English and IT of over 16,000 undergraduates, the university selection and allocation system for the UGC and many other challenging projects. UCSC also was successful in securing three NRC grants and NSF grant for research projects.

Long due physical infrastructure development of the UCSC commenced towards the end of the year. This will partially address some critical space issues faced over the last five years. UCSC while continued to hold the most qualified computing staff in the country with 18 PhD holders further strengthen its lecturer pool to partially address the shortage of its Human Resources. Overseas staff exchange programme was initiated for the first time with one of our staff visiting Umea University and their visiting UCSC for a period of six weeks.

While continue to work on the curriculum development to align existing degree programmes with international standards, new degrees in software engineering, bioinformatics were planned to commence next year.

UCSC AT A GLANCE

		2009	2010	2011
Education (Enrolled/Graduated)				
Internal Undergraduates	All	748	739	737
	In (240 %)	228 (95%)	236 (98%)	238 (99%)
	Out (In %)	196 (86%)	229 (97%)	223 (94%)
Science Undergraduates		1006	1023	1160
External Diploma	All	3490	4281	4287
	In (All %)	2052 (59%)	2514 (59%)	2365 (55%)
	Out (All %)	429 (12%)	361 (08%)	576 (13%)
External Higher Diploma	All	1749	1863	2019
	In (All %)	737 (42%)	688 (37%)	863 (43%)
	Out (All %)	310 (18%)	199 (11%)	309 (15%)
External Degree	All	1126	1188	1293
	In (All %)	417 (37%)	403 (34%)	442 (34%)
	Out (All %)	161 (15%)	140 (12%)	129 (10%)
Postgraduates	All	397	443	531
	In	128	177	143
	Out	17	89	94
Extension Programmes		900	935	678
Research				
Research (MPhil/PhD)	All	28/01	31/01	46
	In	05	06	13
	Out	1	-	1
Research Projects	All	07	06	05
	New	1	2	1
Publications		76	69	63
Consultancy Projects				
	Local	12	25	14
	Foreign	03	05	01
Social Responsibility Programmes		10	18	10

		2009	2010	2011
Governance				
Permanent Academic Staff	All	34	34	36
	Prof (All %)	-	02 (06%)	02 (06%)
	PhD (All %)	17 (50%)	18 (53%)	18 (50%)
Permanent Academic Support Staff		09	04	02
Temporary Academic Staff (Instructors)		19	15	11
Permanent Admin and Non-Ac Staff		26	35	32
Contract Staff (including casual & trainee)		84	72	37
Research/Project Staff		36	18	14
Finance				
Annual Recurrent Expenditure (Millions SLR)		84	80	92
Treasury Grant (Recurrent) (Millions SLR)- Act.		69	65	83
Treasury Grant (Capital) (Millions SLR) – Actual		4	5	16
Generated Income		116	123	159
UCSC Contribution for UG (Millions SLR) (Generated %)		20 (17%)	31 (25%)	22 (14%)
UCSC Budget (Millions SLR)		186	171	205
Research/Project (Millions SLR)		104	84	6.1
Cost per Employee (SLR '000s) per annum		414	457	578
Cost per Student (SLR '000s) – Treasury		113	108	125
Infrastructure				
Library Books		9,600	9,999	10,214
Computers : staff		1:1		
Computers : students (General students) (Special students)		1:4 1:1		
Space Utilization (employee) (sq. m.)		5.98	6.99	9.42
Space Utilization (student) (sq. m.)		1.87	1.89	1.90

OVERVIEW OF THE UCSC

The University of Colombo School of Computing (UCSC) was established on 1st September, 2002 by merging the Institute of Computer Technology (ICT) and the Department of Computer Science (DCS), both of the University of Colombo, by an Order made under Section 24 A(1) of the Universities Act No. 16 of 1978 as last amended by Universities (Amendment) Act No.1 of 1995, as a Centre of Higher Learning for the purpose of providing, promoting and developing higher education in Computer Science, Information and Communication Technology. It is a Higher Educational Institution within the meaning of the Act. The UCSC Ordinance was Gazetted on 15th Nov 2002 (GZT NO. 1262/32) and Amended to include the Centre for Digital Forensics on 22 July 2011 (GZT NO. 1715/32).

A Brief History

The teaching of Computing in the University of Colombo first started way back in 1967 by the setting up of the Statistical Unit as a separate unit of the Department of Mathematics. Later with the initial guidance of Professor V.K. Samaranayake, the statistical unit was enhanced as the Statistical Consultancy and Data Processing Service Centre. This had paved the way to many future developments. By 1985, this Centre had grown into the Department of Statistics and Computer Science (DSCS). The major function of this department was to conduct special degree programmes in Statistics and in Computer Science. The DSCS offered Computer Science specialization programme, producing just 40 students per batch, in no way sufficient to meet the growing demand in the field of Computer Science (CS).

In 1997, a batch of 50 students was taken directly to study Computer Science, through the University Grants Commission, however, by this time, it was realized by many that the Computer Science subdivision of the DSCS need to be expanded as a separate department to meet the growing demand in the field of Computer Science. As a result, in 2001, the DSCS was separated into two departments namely Department of Computer Science and Department of Statistics.

The Department of Computer Science identified its own limitations of operating in the restrictive framework of a Faculty and at the same time it understood the importance of having a strong industry relationship for exploiting future growth potential. The university understood the importance of a strategic merger between the industry focused Institute of Computer Technology (ICT) and the more theoretically oriented Department of Computer Science of the University of Colombo.

The ICT had a strong relationship with the industry at the same time a high institutional profile among foreign donor agencies. The ICT also enjoyed much more autonomy in their business operations making it easier for receiving large amounts of resources from Japan International Cooperation Agency (JICA), Swedish International Development Agency (Sida) and several other donors.

This merger gave birth to the University of Colombo School of Computing (UCSC) on 1st September 2002. Prof. V.K Samaranayake became the founder Director of the UCSC, whose proactive thinking set the path to achieve success in several succeeding endeavours of the UCSC. Through all this, the UCSC has been able to position itself as a Centre of Excellence in ICT in the university system of Sri Lanka.

ORGANIZATION OF THE UCSC

The three departments and six Centres continued to plan and execute their programmes of activities for the current year too.

Departments of the UCSC

For the undergraduate academic programme, government funding is directly received by the UCSC through the UGC. Money received is inadequate to carry out the planned activities for the year and hence some of the generated income is used for undergraduate academic activities. The UCSC has three academic departments and the academic staff is allocated to these departments based on their specialization and teaching expertise. Three department heads are assigned to look after the undergraduate, postgraduate and external & extension programmes respectively as none of them offer programmes of its own. The three departments are,

1. Computation & Intelligent Systems (CIS);
2. Communication & Media Technologies (CMT);
3. Information Systems Engineering (ISE).

Centres of the UCSC

UCSC also performs many secondary activities. These activities are organized under six separate centres. Each centre has a coordinator who manages the day-to-day operations of the centre. The six centres are as follows:

1. Advanced Digital Multimedia Centre (ADMTC);
2. Computing Services Centre (CSC);
3. External Degrees Centre (EDC);
4. e-Learning Centre (e LC);
5. Professional Development Centre (PDC);
6. Centre for Digital Forensics (CDF).

GOVERNANCE

As laid down in the corporate plan, core areas of activity of the UCSC are *Education, Research, Consultancy* and *Social Responsibility*. Of these, Research has been recognized as the central pillar which sets the UCSC apart from the rest of the ICT Education sector, and which contributes in turn to the other three pillars. These pillars themselves are supported by two main sources; the Human and Physical Infrastructure/Resources and the Administrative/Financial services. In addition, all these aspects are held together and directed for optimal efficacy by a 'roof' of Good Governance.

Management

Management of the UCSC is handled by the officers of the UCSC with the assistance of the heads of the departments and centre coordinators. Director chaired all UCSC Statutory and Selection Committees.

Officers of the UCSC

Director: Prof GN Wikramanayake; **Deputy Director:** Dr DN Ranasinghe (till Sept); Prof ND Kodikara (from Oct);

Heads of the Departments of the UCSC

CIS: Mr GP Seneviratne; **CMT:** Mr GKA Dias; **ISE:** Prof ND Kodikara (till Oct); Dr DD Karunaratna (from Nov);

Centre Coordinators of the UCSC

ADMTC: Mr ST Nandasara; **CSC:** Dr AT Dharmaratne; Mr. LP Jayasinghe; **EDC:** Mrs SP Ariyaratne; **eLC:** Dr DD Karunaratne (till Nov); Dr KP Hewagamage (from Dec); **PDC:** Dr SMKD Arunathilake; **CDF:** Mr KS Goonathilake (from Sept).

Authorities

The Authorities of the School are the Board of Management; Academic Syndicate; Boards of Study; Departments of Study and Centres.

Board of Management

12 monthly meetings and 04 Special Meetings of the Board of Management were held during the year. The composition of the Board of Management is given below.

Director (Chairman); Deputy Director; Heads of Dept (CIS/CMT/ISE); **Nominee/Secretary, Ministry of Higher Education:** Mr Piyasena Ranepura; **Nominee/Ministry of Finance:** Mr R Uduwawala; **Dean, Faculty of Science:** Prof K R R Mahanama (Acting Jan-Feb); Prof TR Ariyaratne; **Nominees of Council, UOC:** Mr C Maliyadda; Mr Mahinda. Rajapakse (till July), Mr Asoka Pathirage (from Sep); **Nominees of Senate, UOC:** Prof KH Thennakoon; **Nominees of the UGC:** Mr S Mudalige; Deshamanya Mr MDD Pieris; **Representatives of the IT Industry:** Mr Jayantha De Silva; Mr Mano Sekeram; **Nominees of Academic Syndicate, UCSC:** Dr HL Premaratne (till Oct); Dr DAS Atukorale (till Oct); Dr SMKD Arunathilake (till Oct); Dr DN Ranasinghe (from Nov), Dr GDSP Wimalaratne (from Nov), Dr MC Jayawardena (from Nov); Former Director (Invited): Dr AR Weerasinghe.

Two Sub-Committees, the Finance & Management Committee and the Audit Committee assisted the Board of Management. Both committees held 03 meetings each during the year. Composition of the two committees is given below.

Finance and Management Committee

Director (Chairman); Deputy Director; Mr Piyasena Ranepura; Mr R Uduwawala; Prof TR Ariyaratne; Deshamanya Mr MDD Pieris; Mr Jayantha De Silva.

Audit Committee

Mr Sujeewa Mudalige (Chairman); Deputy Director; Mr Jayantha De Silva; Mr C Maliyadda.

Academic Syndicate

11 meetings of the Academic Syndicate were held during the year. The composition of the Academic Syndicate is given below.

Director; Deputy Director; Heads of Dept (CIS/ CMT/ISE); Centre Coordinators (ADMTC/CSC/EDC/eLC/PDC); **Nominee (Faculty of Science):** Prof RD Wijesekara; **Representatives/IT Industry:** Dr RAC Ranasinghe; Senior Academics (UCSC); **Two Teaching Staff:** Mr LP Jayasinghe; Mr WDMG Wathugala (till Oct); Mr. WMR Weerasuriya (from Nov).

Boards of Study

There are three boards of studies, namely IUD, RHD and EEP. They focus on Internal Undergraduate

Degrees (IUD), Research and Higher Degrees (RHD) and External and Extension Programmes (EEP). The three boards had 9, 10 and 11 meetings respectively during the year.

EDUCATION

Programmes and Students

UCSC offers a wide variety of programmes at different levels. Table 1 identifies the courses (programmes) conducted by the UCSC along with the students and staff involved.

Table 1: Type of Courses Offered

Course	Total Students	Total Academic Staff	Total non Academic Staff
Undergraduate and Postgraduate Programmes	1,125	48	62
Research and other Projects	41	13	10
Extension courses	678	07	55
External degree	5,562	41	11
Online	13,841	3	15
Other – Faculty of Science	1,160	19	2

Undergraduate Education

Computing for undergraduates were first introduced way back in 1967 as part of Faculty of Science. UCSC continues to offer this opportunity for faculty of science 1160 students. Computing as a degree commenced in 1990. All together 1897 undergraduates are being trained at the UCSC. UCSC currently offers Computer Science (CS) degree for 486 students and Information and Communication Technology degree (ICT) for 251 students.

Internal Degrees

UCSC continued to offer the two internal degree programmes in the field of CS and ICT. These two degree programmes are formulated to focus on different market segments in the IT industry and has a three and four year options. CS degree programme select students from A/L physical science stream while the ICT degree is open to all streams.

The *Bachelor of Computer Science* (BCSc) and the *Bachelor of Science in Computer Science* (BSc (CS)) degrees are designed to cater for the high demand of CS professionals worldwide. The BCSc Degree programme is a three year programme whereas the BSc (CS) is a four year programme.

The ICT Programme is designed to produce a new kind of Information systems (IS) professional to fill the gap between business requirements and technical solutions. This degree Programme is designed to produce this new breed of ICT professionals. The curriculum of this programme also emphasizes the importance of soft skills such as communication and teamwork. The three-year degree is named as the *Bachelor of Information and Communication Technology* (BICT), while the four-year degree is named as the *Bachelor of Science in Information and Communication Technology* (BSc (ICT)).

To make the degree programmes internationally accepted it was necessary to align our degree programmes according to internationally recognised ACM/IEEE guidelines. Several workshops on Curriculum Design were conducted to initiate this process. In this process it was identified that the Information and

Communication Technology (ICT) degree programme has to be aligned with the Information Systems stream of the ACM/IEEE. Thus approval was obtained from the UGC to change the ICT degree to Information Systems degree. As most graduates end up as software engineers it was required to introduce a Software Engineering degree. University approval to implement a Software Engineering stream for the Computer Science intake was also obtained. Accordingly UCSC will now be offering four computing degrees, namely: Computer Science, Software Engineering, Information Systems and Information Technology degrees. Among them the Software Engineering and Information Systems will be new degree programme for those entering universities from the 2012/13 intake.

The CS degree programme was redesigned to offer as 2+1 (3 year) and 2+2 (4 year) degrees instead of existing 3 year exist and 3+1 (4 year). New programme will contain a 4 year Software Engineering (SE) stream in addition to the existing 3 and 4 year CS exists. Changes are expected to be implemented from the 2012 intake.

Curriculum revision resulted in a name change from ICT to IS for which approval was obtained from the UGC. New 3 year degree will be called Bachelor of Information Systems (BIS) and the 4 year Bachelor of Science in Information Systems Engineering BSc (ISE). Implementation of the new curriculum is to take effect from the 2012 intake.

Enrolment

The UCSC admitted a batch of 160 students for the Degree in CS Programme while 78 students were admitted for the Degree in ICT Programme bringing the total registered students at the UCSC to 737 (Table 2). Selection for the ICT programme included an aptitude test held in Jaffna, Vauniya, Anuradapura, Kandy and Colombo. 740 of the 1678 sat qualified for the ICT degree, while 269 were absent. New GCE (A/L) ICT subject was also considered as a possible course to enter the ICT programme of the UCSC. Inauguration for the 2011 intake was held on 24th Oct. CS and ICT registrations were carried out in 8 and 5 stages respectively due to the student transfer policy. In total 190 CS and 97 ICT students were registered while 32 CS and 20 ICT were transferred. There were 2 CS and 1 ICT re-registrations. Due to the ministry pre-orientation programme which was implemented with the help of the UCSC, a separate orientation programme was not held for this intake. UoC organised a shramadana for the new intake on 4th Sept. New intake commenced lectures soon after the inauguration held on 24th Oct.

Table 2: Internal Undergraduate Programmes

Course	Intake 2011	1st Year Students	2nd Year Students	3rd Year Students	4th Year Students	Total	No of Graduated
Bachelor of Computer Science	160	160	148	138	0	446	106
BSc in Computer Science	40	0	0	0	40	40	40
Bachelor of ICT	80	78	77	76	0	231	57
BSc in ICT	20	0	0	0	20	20	20
UCSC Undergraduates	300	238	225	214	60	737	223
BSc Faculty of Science	-	439	355	326	40	1160	-
Internal Undergraduates	300	677	580	540	100	1897	223

All courses are conducted in English Medium

Visiting Staff

All the academic and academic support staff participated in delivering the internal undergraduate programmes. ICT degree programme consists of many courses that require external support. 15 persons were invited as visiting lecturers to conduct 11 courses of the ICT degree programme.

Industrial Placement

PDC continued to keep a close liaison with the IT industry and for improvement of the academic programmes through industry partnership thereby enhancing the quality of the undergraduates. During the year PDC placed 226 undergraduates at 66 organisations for their 6 months training. PDC organised companies to voluntarily take part in a series of guest lectures, through which the undergraduates are made aware of the role they have to play as professionals after they graduate. Through these lectures, the undergraduates were provided with a good orientation program and preparation before being sent for Internship. They were clearly communicated of the objectives and skills to gain during the internship.

Apart from the industrial training, the PDC organised Soft Skill Development Programme for the 4th year undergraduates with the aim of improving their soft skills that are much needed in the industry to get a "foot in the door" of their profession. The successful undergraduates are awarded a certificate from Toastmasters International.

Student Activities

Student activities are carried out through the student union mainly to promote cultural, ritual and recreation activities. These activities included Shramadana Campaign, Prith Ceremony, Sports Day, Paduru Sajjaya, Blood Donation Campaign, Vesak Bhakhi Gee, Going Down Party, Wanivila Ceremony and Christmas Carols. UCSC students conducted several workshops at UCSC and at Schools to assist students and teachers with GCE (O/L) & (A/L) ICT.

Student Achievements

UCSC students won the Information Security Quiz organised by Sri Lanka CERT. The "Business Cloud for SMEs" project of HPD Jayathilaka, N Kularathne and EADI Embuldeniya received special recognition at the NBQSA. 13 teams participated at the IEEEExtreme 5.0 competition and the best among UCSC was placed 216 in the world. Students also participated at Google Summer Code, Imagine Cup and Motorola Enterprise Mobility Software Development Competitions.

Sports

Three students, namely S.K. Wegapitiya (2009/CS/169); E.M.S.C.B. Ekanayake (2009/CS/033); W.M.H.P. Weerasinghe (2009/CS/161) participated at the Birla Institute of Technology and Science (BITS) open sports meet (BOSM) in Athletics (Men) held in Pilani, Rajasthan, India from 14-18 Sept 2011. Wegapitiya won Gold in Javelin Throw; Weerasinghe won Gold in Long Jump and Ekanayake won bronze in 200m. P.G.C. Dangalla (2008/ICT/007) participated at BOSM in Hockey (Men) and H.D.S.P. Ariyaratne (2008/CS/008) in Carom (Men). S.D.J.M.N. Arsakularatne (2008/CS/141) took part at XXVI World University Games, Shenzhen, China and PAJ Munidasa (2009/CS/174) at International Inter-Varsity Invitational Cricket Tournament, Malaysia.

Graduation

Graduation ceremony was held for 204 students from 4 degree programmes. Students for the ICT degree programme are selected from any A/L stream. In table 3 student performance by stream is also shown for these students.

It was observed that most of the students who obtained the 3-year Degree Programme were recruited by reputed firms in the IT industry on lucrative contracts even before they finished their 3rd year industrial placements. A survey was carried out during the convocation which was held six months after completing the degree. 133 of the 158 graduands who took part in the survey had already found employment (84%). Percentage of females employed (92%) were slightly higher than the males

(87%). Percentage of 4 year degree students (97%) employed was higher than that for the 3 year Degree (86%). All First Class Students and Second Uppers were employed while only 79% of the General Students were employed. All the unemployed individuals expected a salary of Rs. 20,000 or more, while 6% of those employed earn less than Rs. 20,000. Most employed was earning between Rs. 40,000 to 50,000 with 7 students earning over Rs. 100,000. Average Salary of a graduand was between Rs. 50,000-60,000. Most were employed in the Private Sector (87%).

Table 3: Performance of UCSC Graduates

Intake	First	Upper	Lower	Pass	TOTAL
BSc	1	4	14	74	93
BICT	4	7	10	29	50
Mathematics	3	5	7	19	34
Biology	0	0	3	4	07
Commerce	1	2	2	5	10
Arts	0	0	0	6	06
BSc CS	10	12	16	3	41
BSc ICT	7	6	7	0	20
Mathematics	4	5	5	0	14
Biology	3	1	0	0	04
Commerce	0	0	0	0	00
Arts	0	0	2	0	02
TOTAL	22	29	47	106	204

Figure 1 shows that the UCSC graduands employability is next to Engineering and Medicine. Similar survey carried out for the external degree showed that of the 140 graduates 81% were employed while only 9% was looking for employment.

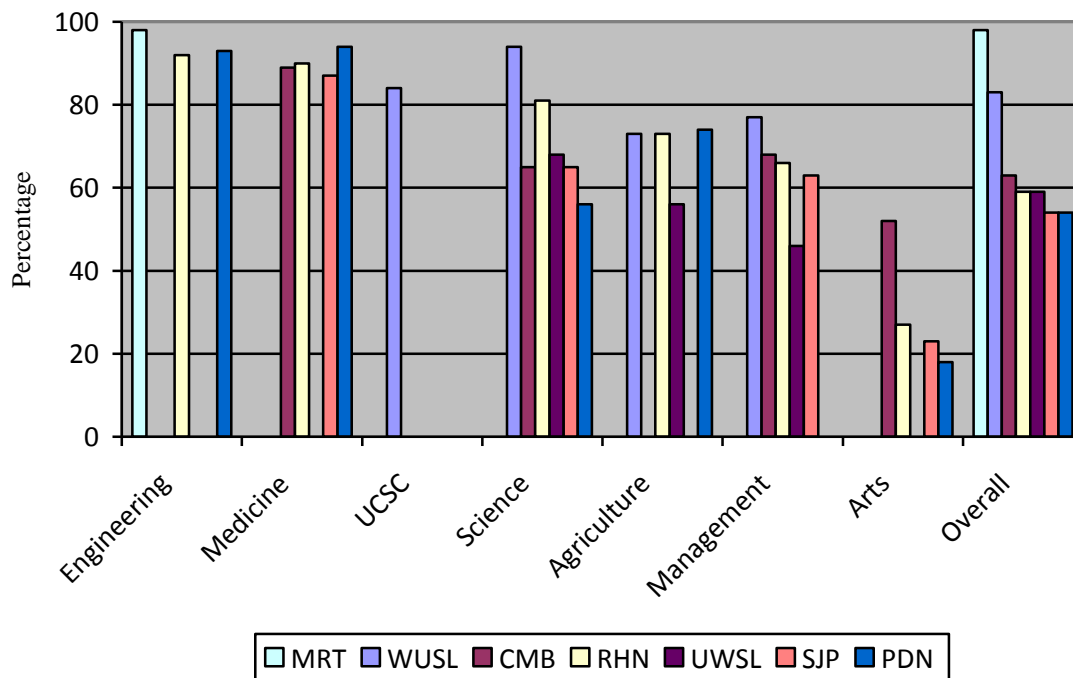


Figure 1: Employability of University Graduates

Awards

Three awards, namely Prof. Mohan Munasinghe Award for Computer Studies, David Peiris Group Gold Medal & Prof VK Samaranyake medal for most outstanding Graduate of the UCSC was awarded to ADS

Jayatilake. CINTEC Award went to MMATN Mannapperuma while Virtusa Academic Excellence Award to MRB Mudannayake. Three awards introduced to the ICT degree programme is to be given from next convocation.

Attracting good students is our primary concern as it contributes towards the quality of the students we produce. Students enrolling for the undergraduate programme are selected centrally by the University Grant Commission (UGC). It is based on student preference. Currently most student's first choice is either Engineering or Medicine. Also most students were unaware of the UCSC degree programmes and career opportunities in the computing field. Thus UCSC continued to organize workshops over two days for potential new admissions which were well attended. So far those shown interest have not had the opportunity to enrol for the internal programme.

Postgraduate Education

Postgraduate programmes were first offered at Colombo in 1986 through postgraduate diploma programmes. UCSC now offers three masters degree programmes and research degrees have 531 students (Table 4). Master of Computer Science offered since 1990 had 147 students. Information Technology programme offered since 2000 had 136 students. Information Security programme had 25 in the first batch. New Bioinformatics programme is also ready to commence. 46 research students are carrying out research leading to MPhil/PhD.

Table 4: Postgraduate Degree Programmes

Course	Intake 2011	1st Year Students	2nd Year Students	3rd Year Students	4th Year Students	Total	No of Graduated
Master of Computer Science	60	80	67	15	13	235	26
Master of IT	57	72	64	27	10	230	42
MSc in Information Security	26	25	0	0	0	51	0
MSc Advanced Computing	0	0	0	0	07	7	01
PGD Advanced Computing	0	0	0	0	01	1	08
MSc Computer Science	0	0	0	0	03	3	05
PGD Computer Science	0	0	0	0	0	0	04
MSc IT	0	0	0	0	04	4	04
PGD IT	0	0	0	0	0	0	04
Taught PGD	143	177	131	42	38	531	94
MPhil	13	13	07	07	06	46	01
Total	156	190	138	49	44	577	95

All courses are conducted in English Medium

Masters Programmes

Each programme caters towards distinct categories of people.

The *Master of Information Technology* (MIT) is a programme targeted at graduates in disciplines other than computing who wish to pursue a career in an IT related area. This is also suitable for those who wish to specialize in a multidisciplinary field overlapping with IT such as Management, Networking or Multimedia technology.

The *Master of Computer Science* (MCS) programme is designed for CS/IT professionals who already possess a degree in Computing and who wish to acquire a postgraduate qualification in CS/IT with research exposure.

The *Master of Science in Information Security* (MSc IS) programme is designed for graduates who wish to

acquire a postgraduate qualification in the area of Information Security. This programme offers mid-career opportunities for those working in the areas of information technology, information system audit and information security.

First year of the new two year masters programme in Information Security for 25 students was completed. Two ongoing master's programmes in Computer Science and Information Technology continued to enrol nearly 150 students. New master's programme in Bioinformatics was designed in collaboration with IBMBB of the University of Colombo.

External Degree & Extension Courses

External degree programme commenced in 2000 had 5,700 enrolled while 678 followed the extension programmes. In addition the pre-orientation programme 13,841 sat the exams taking the number trained during the year at UCSC to over 20,000.

BIT programme alone has attracted 27,148 since its inception. In 2011 2365 new students joined the programme (Table 5). These students not only represent all districts in the country but also overseas in UAE. BIT (External) degree programme was able to double the planned intake as well as to produce the first overseas registered graduates of the BIT programme. BIT students were provided access to computing resources through NODES centres of the Ministry for a very nominal fee.

Table 5: External Degree Programme

Course	Intake 2011	1st Year Students	2nd Year Students	3rd Year Students	Total	No of Graduated
Diploma in Information Technology	2365	3095	943	249	4287	576
Higher Diploma in IT	648	943	369	707	2019	309
Bachelor of Information Technology	279	249	458	586	1293	129
All		3095	1312	1293	5700	

Table 6 highlights the performances of the BIT students over the last six years identifying number registered and graduated along with targets.

Table 6: External Degree Performance over last Six Years

External Undergraduates	KPI	2007	2008	2009	2010	2011
DIT - Diploma Intake	2000	1558	1540	2052	2514	2365
DIT - Diploma Registered	3000	1904	2001	2548	3202	3095
DIT - Diplomas	600	528	607	429	361	576
HDIT - Higher Diploma Intake	600	520	588	537	549	648
HDIT - Higher Diploma Registered	1500	1121	1079	1148	1172	1312
HDIT - Higher Diplomas	300	128	386	310	199	309
BIT - Degree Intake	300	159	236	258	228	279
BIT - Degree Registered	1000	842	1102	1126	1188	1286
BIT - Graduates	150	108	138	161	140	129

Intake excludes repeaters

Note: 2007 (DIT), 2008 (HDIT), 2009 (BIT) saw the introduction of GPA based evaluation system and a major curriculum revision under eBIT project. 2009 graduates benefitted from the relaxation of the requirement to pass all compulsory courses. 2011 introduced a minimum D grade for each course to fulfil the degree criteria.

Graduation

Performance of those participated at the 2011 convocation is shown in Table 7. 140 graduates were conferred the degree at this Convocation. 113 (81%) were already employed and 45 (32%) of them were looking for better employment. Among the 27 (19%) unemployed only 12 (09%) had looked for employment due to studies and other reasons.

Table 7: Those Graduated at the Convocation held in 2011

Intake	First	Upper	Lower	Pass	TOTAL
BIT	3	8	10	119	140

Awards

Prof. VK Samaranayake Medal for the Best Performance at the Bachelor of Information Technology (External) Degree was awarded to SDDN Sirimevan. New award was introduced for the best individual project. This was awarded to SDDN Sirimevan. Best e-Learner awards for the 4 semesters were awarded to WAMLB Karunarathna (I), RL Edirisuriya (II) & UV Vandebona (III) & MMNF Razana (IV).

Institutes

Many training institutes have offered face to face classes and learning support for the BIT candidates. Over 200 institutes have participated in this process with around 50 institutions in some academic years. UCSC do not accredit any of these institutions but have recognised their contributions for the success of the programme. Each year UCSC publish the summary of examination results for each course by institute so that the candidates can identify the available institutions and plan their learning mode. More than half the candidates study on their own with the help of the VLE and online/recommended material. In 2010/11 35 institutions from 13 districts conducted training for five or more candidates. Among them 08 institutions were involved in all three years (marked * in the Table 8). Number of institutes participating significantly increased as the war in the North-East provinces ended in 2010.

Table 8: Institutes involved in the BIT Programme

District	Institute
Ampara	(1) Global Institute of Professional Education
Batticaloa	(1) Esoft Computer Studies
Colombo	(1) Earth International (2) *Esoft Computer Studies (3) Foundation of IT Professionals (4) *IDM Computer Studies (5) Infortec International (6) *Matrix Institute of IT (7) *Openarc School of Business and Technology (8) Rotary Management Centre (9) Sharp Vision Computer Institute (10) TEC Sri Lanka (11) Wide Awake Computer School
Galle	(1) Earth International (2) Esoft Computer Studies
Gampaha	(1) *Earth International (2) Esoft Computer Studies (3) IDM Computer Studies (4) Urban College for Business and Technology

Jaffna	(1) BIT Corner (2) Esoft Computer Studies (3) *Mobile@Net Computer Services
Kalutara	(1) Institute for Quality Studies
Kandy	(1) *Esoft Computer Studies (2) IDM Computer Studies (3) Infortec International Institute (4) Matrix Institute of IT
Kegalle	(1) Institute of Computer Studies
Kurunegala	(1) *Esoft Computer Studies (2) Infortec International Institute for IT
Matara	(1) Esoft Computer Studies (2) IDM Computer Studies (3) Matrix Institute of IT
Monaragala	(1) Global Institute of Professional Education
Vavuniya	(1) Esoft Computer Studies

UCSC also continued to offer over ten extension certificate courses attracting nearly 700 students. Table 9 identifies the details of the CSC courses (programmes) conducted by the UCSC.

Table 9: CSC Training Programmes

Course	B	P
3D Modeling and Animation	4	36
3D Modeling for Real-Time Simulations	1	05
Advanced Java Application Development using J2EE	3	72
Advanced Multimedia Web Design and Development Techniques	5	94
Computer Aided Drafting Using AutoCAD 2008	1	21
Digital Video Production and Animation	1	09
Dynamic Web Development with PHP and MySQL	3	60
Graphics Design and Creativity Development	4	44
Intensive Course on Office Applications	2	27
Instructional Design for e-Learning	1	07
JAVA Application Development	3	71
Linux Administration	1	06
Linux Essentials	2	39
Linux Systems and Network Security	1	05
Network. & Com. Hardware	1	33
Unix Linux Fundamentals, Network & System Administration (C)	4	109
Upgrading and Maintenance of Personal Computer Environment (C)	2	19
Web Design, Development	1	21
TOTAL	40	678

Foreign Students

To be accepted as a centre of excellence in the region it is important to attract foreign students. Although foreign student category to enrol students had been there for a while only students who have done their A/L

elsewhere but with local connections have applied so far. During 2011 first student enrolled under the foreign student category for the CS degree programme. He was a local who had studied overseas. Details of foreign student enrolment are given in table 10.

Table 10: Foreign Students

Course	Medium	Intake 2011	1st Year Students	2nd Year Students	3rd Year Students	4th Year Students	No of Graduated
Computer Science	English	01	01	-	-	-	-

New Courses Started

Enhancing ICT skills and Improving English Language Skills programmes were launched by the ministry through the HETC funding. UCSC developed learning material and conducted online examination using ministry owned NODES centres. This Pre-Orientation Programme covering English and IT was attended island wide by 16,000 students.

UCSC continued to hold e-Testing for selecting students for the BIT programme and also implemented similar testing environment for the Institute of Chartered Accountants (ICA) students. Information of the new courses commenced is given in table 11.

Table 11: New Courses

Course	Medium	Certificate	Diploma	Postgraduate Diploma	Master	M.Phil	Ph.D
Online IT & English	English		-	-	-	-	-

RESEARCH

Research, Innovation and Publications

Research is carried out under different research groups and through research students (Table 13). UCSC admits graduates with good first degree results in Computer Science/Engineering for its full/part time (FT/PT) MPhil programme mainly centred on research projects in progress. 13 new students registered during the year and one evaluation was held. Currently 31 students are working on 13 disciplines under 13 senior academics of the UCSC. 10 MPhil students had publications during the year.

Table 12: Staff Research Areas

Research Area	FT	PT	Total	New
Bioinformatics	0	1	1	0
Computer Graphics	1	2	3	0
Software Engineering	0	1	1	0
Data Mining	1	0	1	0
Digital Forensic	1	0	1	0
e-Business	0	2	2	0
e-Learning	2	1	3	1
GIS	2	1	3	0
High Performance	1	1	2	1
Image Processing	1	2	3	1
Machine Learning	3	4	7	3
Local Language	0	1	1	0
Sensor Networks	1	2	3	0

TOTAL	13	18	31	6
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To promote research at the UCSC a research fund was established with utilisation guidelines in 2009. Since the initial contribution of 4 million from the masters and BIT this fund has continued to grow through generated funds and it now stands at 25.8 million. Senior staff could annually utilise up to 250,000 rupees to participate at research meetings and publish research in international conferences and journals. This increased annual UCSC publications from 30s to 60s. Among the years publications 58 were conference papers held in 19 countries. 21 (58%) academic staff published research papers. Table 13 gives the details of the publications.

Table 13: Research Summary

Subject	Published	Commercialized	Presented
No of Researches	87	-	58
No of Innovations	-	-	-
No of Journals	4	-	-
No of Books	1	-	-
No of Articles	58	-	-
Other	-	-	-
Total	63	-	58

Conferences, Seminars & Workshops

Setting up mechanisms for identifying & carrying out relevant research is another strategy of the UCSC. Organising the annual UCSC Research Symposium for Final Year undergraduates was continued. A Research Day to disseminate research carried out by staff was introduced this year with the participation of the overseas external examiner. UCSC also continued to publish two issues of the ICTer Journal. Organize International IT Conference for Emerging Regions and hosted INET conference workshops at UCSC. UCSC also revised mechanism for utilizing Research Fund by all academics to encourage further involvement in research.

UCSC successfully held the annual Prof. V.K. Samaranayake oration at the UCSC and attracted new funds for the Prof. V.K. Samaranayake endowment fund. Details of the conferences, seminars and workshops are given in table 14.

Table 14: Conferences, Seminars and Workshops

Subject	Participated	Published	Presented
Senior Academics local conferences	22	1	0
Senior Academics International conferences	17	46	6
Research Seminar (Staff)	20	0	13
UCSC Symposium (abstracts)	150	48	13
Organized International Conference (ICTer)	175	32	19
Organized International Workshop	122	0	0
ICTer Journal	25	10	0
Total	531	137	51

Awards Received

UCSC continued to encourage students and staff to participate in national and international competitions. Over the last few years UCSC has won several open awards awarded by NBQSA, e-Swabhimani, APICTA and Manthan. Students have excelled at Imagine Cup and other events.

Group of students won the Information Security Quiz competition organised by Sri Lanka CERT. Another group obtained special recognition at the National Best Quality ICT Awards. Details of the awards received are given in table 15.

Table 15: Research Awards

Subject	No of Awards	No of Academics	No of Students
Local Awards	2	1	3
National Awards	-	-	-
International Awards	-	-	-
Other	-	-	-
Total	2	1	3

Academic Staff

During the year three permanent instructors were promoted to Lecturer (Probationary), one Lecturer (Probationary) was recruited and another was terminated. One academic and one administrator went on sabbatical, while another academic returned after completing his sabbatical. However UCSC failed to attract required personnel to fill the available positions. Only 38 of the 72 Academic & Academic support carder positions are filled. Retaining trained technical personal and attracting good young academics were extremely difficult due to better prospects in the private sector. Beside the permanent staff to carry out daily activities UCSC rely on visiting staff to deliver some of their programmes.

In order to attract international human resources short term visiting researchers from Australia, Sweden, UK and USA was hosted during the year. UCSC also commenced the first staff exchange programme under Linnaeus Palme Project with Umea University, Sweden and UCSC staff member successfully conducted a course in Umea.

Details of the UCSC academic staff is given in table 16.

Table 16: Staff Research Areas

Subjects	Medium	Senior Professor	Professor	Senior Lecturer	Lecturer	Asst Lecturer	Instructor
Computing (P)	English	-	02	18	16*	-	02
Computing (C)	English	-	-	-	02	-	08

*09 on leave

Non-Academic Staff: Permanent (P) Contract/Assignment (C/A)

Efforts were put into the development and implementation of management and strategic information system. Outcome was not encouraging due to less involvement by the potential users. Implementation work of the ongoing Examination Processing System was continued. Online payment facility for external and extension programmes and postgraduate programmes was introduced. Financial system at the UCSC was upgraded and a project to implement surveillance and RFID based books monitoring system for the library was initiated.

Details of the UCSC non-academic staff is given in table 17. Although carder for over 100 Non-Academic and Project staff were approved UCSC only 35 permanent position have been fill and the most of the work is carry out by contract and assignment staff.

Table 17: Non-Academic Staff

Type	Most Senior(Admin)	Senior Staff	Junior Staff	Minor Employees	Project Staff
P	5	4	20	6	-
C	-	4	20	11	14
A	-	2	-	-	-

FINANCE

Recurrent Expenditure

UCSC contributes towards the day to day operations using generated income as treasury funds are inadequate to carry out the undergraduate activities. Cost per undergraduate student is 125,000. UCSC contributed 22 million for the internal undergraduate programme which was 28% of its generated income. Breakdown of recurrent expenditure is given in table 18.

Table 18: Recurrent Expenditure Rs. 000'

Subject	2010	2011
Personal emoluments	68,015	79,931
Travelling	484	1,132
Supplies	3,895	4,227
Maintenance	2,906	3,627
Contractual Services	23,453	26,675
Other	54,672	56,915
Total	153,425	172,507
Government Allocation	65,381	83,102

Capital Expenditure

UCSC invested in physical resources to improve its computing facilities. Servers were set up for Streamed Video and Flash Video of existing material and for e-testing. Equipment of the network operating centre was upgraded to meet increased throughput. Details of capital expenditure are given in table 19.

Table 19: Capital Expenditure Rs. 000'

Subject	2010	2011
Acquisition of furniture & Office Equipments	6,043	2,656
Acquisition of Machineries	-	-
Acquisition of Building & Structures	-	15,420
Other	15,257	10,099
Total	21,300	28,175
Government Allocation	3,420	16,000

Projects (Local/Foreign Funded)

UCSC has a strong research group in several disciplines. Modelling & Simulation, e-Learning and Language Technology are among those that have reached the user community. UCSC has created a collaborative interdisciplinary research culture as well as strengthen industry university collaboration. Initiated industry

collaborated research through a 1.5 million project with Orel Solutions and with few others with funding from NSF and NRC. Three Sida funded projects (Networking, PhD, NeLC) was successfully completed while research work of ongoing research projects such as M-ATM, TikiriDB, VIPNet was continued.

Beside research based projects UCSC carry out consultancy services to public and private sector. UCSC is well known for some of its work in the past. UCSC has assisted with the National Elections since 1981. Birth Marriage certificates are now issued over the counter using UCSC software. Sinhala language is supported in modern computers due to the efforts of UCSC through the design and development of Sinhala Unicode.

Implementation of a university student selection and allocation system for the UGC was one of the major development activities carried out by the UCSC. This will significantly reduce the time taken for university admissions as well as the accuracy of the process adopted. UCSC also implemented a touch screen based voting system for ICA which was used to select their office bearers. Through the e-learning centre several e-testing based recruitment test were conducted for UGC and other universities. UCSC also continued to carrying out Digital Forensic activities to assist court cases.

While maintaining strategic partnerships with key stakeholders the UCSC continued implementation of e-Government projects in the country and commenced new projects with HETC and Government Ministries. UCSC submitted proposals for HETC funding under UDG, PGD and EEP. However, UCSC was successful only in the EEP proposal. UCSC through also implemented an e-learning framework for Royal University of Bhutan through World Bank funding. Theekshana, a UCSC owned company generated nearly Rs. 15 million of which over Rs. 8 million was in foreign exchange. Details of the UCSC projects carried out and their expenditure are listed tables 20 and 21.

Table 20: Recurrent Expenditure

Rs. 000'

Name & Detail	Grant	Funding Agency	TCE	RFA	DF
LTRL (2010-11)	18,845	IDRC, Canada			
M-ATM (2008-11)	6,566	Royal Inst. of Tech.(KTH), Sweden			
Tele centre.Org (2010-11)	1,948	Telecentre Foundation, Philippines			
Tikiri DB (2010-2012)	1,751	Swedish Inst. of Comp. Sc., Sweden			
VIP Net (2010-2011)	1,357	APNIC (Pvt) Ltd, Australia			
Linnaeus Palm (2011)	100	Linnaeus Palm, Sweden	100	100	
Foreign Funds					
FASS (2011-2012)	408	Ministry of Defence, Sri Lanka	408	408	
Orange (2011-2012)	1,500	Solutions (Pvt) Ltd, Sri Lanka	1,500	1,500	
Copsayura (2011-13)	1,628	National Science Foundation	1,628	1,628	
Vidusayura (2011)	50	Sri Lanka Navy	50	50	
Local Funds	1,908				

TCE – Total Cost Estimated; RFA – Request for Applications; DF – Discount Factor

Project Expenditure (Local/Foreign Funded)

Table 21: Project Expenditure

Rs. 000'

Name	TCE B/F Accu. Cost	Exp in 2010	Exp in 2011	Cumulative Exp as at 31.12.2011	% of Physical Progress
LTRL	16,469	2,718	1,956	21,143	100%
M-ATM	1,855	2,314	3,359	7,528	80%
Tele centre.Org	120	1,828	462	2,410	100%
Tikiri DB	-	1,435	378	1,813	60%
VIP Net	-	1,358	1,059	2,417	100%

Foreign Project Exp	18,444	9,653	7,214	35,311	
FASS	-	-	40	40	30%
Orange	-	-	645	645	50%
Local Project Exp	-	-	685	685	

Financial Progress (Expenditure)

Table 22: Financial Progress (Expenditure) Rs. 000'

Subject	Provision	Exp	Savings/Excess
Recurrent except Project	180,107	172,507	7,600
Capital except Project	87,463	28,175	59,288
Project - Local funded	745	745	-
Project – Foreign funded	5,402	5,402	-
Total	273,717	206,829	66,888

Financial Progress (Generated Income)

Table 23: Financial Progress (Generated Income) Rs. 000'

Source of Revenue	Provision	Collection	Deficit / Surplus
Undergraduate Studies	88,646	87,981	665
Postgraduate Studies	26,987	55,595	(28,608)
Consultancies	39,341	31,045	8,296
External Degree	51,761	72,845	(21,084)
Other	-	-	-
Total	206,735	247,466	(40,731)

Excluding the Undergraduate income UCSC earned 159,485. Generated income of the UCSC was much higher than most universities and higher education institutes, including its main university (Figure 2).

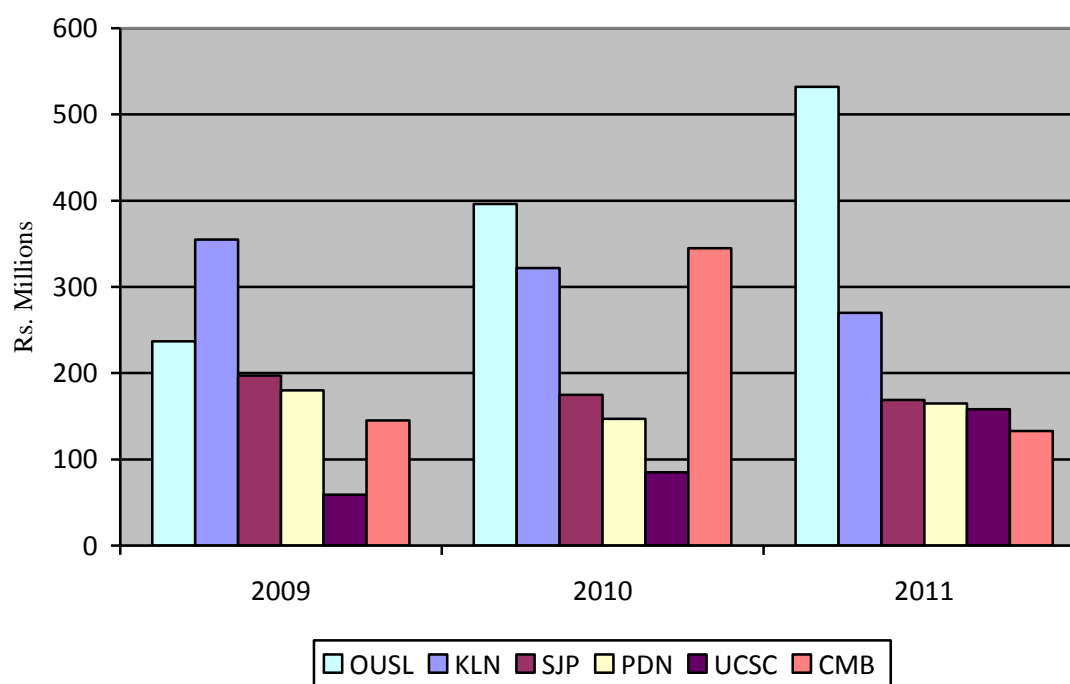


Figure 2: Generated Income

Financial Performance Analysis

Table 24: Financial Performance Analysis

Rs. 000'

Subject	Formula	Exp. per Student
Recurrent Expenditure per Student (RE)	RE / No of Student strength	125
Capital Expenditure per Student (CE)	CE / No of Student strength	38
Total		163

Infrastructure Facilities Received in 2011

UCSC operate with limited space with inadequate space to conduct lectures. Students do not have adequate space in the canteen, common and study rooms. As the university was unable to provide land UCSC commenced Build West wing and fourth floor extensions to meet shortage in undergraduate classrooms and to accommodate fulltime research students.

While meeting the short term infrastructure needs expansion plans were designed to meet medium and long term goals. Construction of a canteen and administrative building at the current canteen location was identified along with replacing the existing auditorium with lecture halls/study rooms cum auditorium were among the medium term goals. Requirement to set up buildings outside the University of Colombo was also identified as long term goals. Details of the building work are given in table 25.

Table 25: Infrastructure

Rs. 000'

Infrastructure Details	Expenditure (Rs)	Physical Progress
UCSC Building Extension	15,420	30%

Any Other Details / Performance Relevant to this Report

To enhance visibility locally and internationally monthly print media coverage of UCSC activities was maintained along with redesigning of the UCSC web site to improve presence.

UCSC considers taking IT education and products to the periphery is one of their social responsibilities. During the year UCSC partnered with Rupavahini Corporation to introduce educational programme for A/L students. UCSC also continued community interface through SLBC Radio programme conducted every Wednesday morning from 9 to 10. UCSC also assist Ministry of Education and Schools in conducting Software Competitions including the International Olympiad in Informatics.

UCSC provided real opportunities for students to exercise social responsibility both within and outside the university. Several workshops were organised by the students. For the first time UCSC provided international exposure for all staff and their families through a welfare trip to Chennai. UCSC continued with the staff medical insurance scheme.