

UCSC

# ANNUAL REPORT 2016

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING




**UNIVERSITY OF COLOMBO**

# SCHOOL OF COMPUTING

**ANNUAL REPORT For FISCAL YEAR**

**2016**

# OUR VISION

*Be a Global Leader in*
*Computing Education,*
*Advancing the Frontiers of*
*Knowledge through*
*Teaching,*
*Learning and*
*Research*

# OUR MISSION

*To advance and enhance computing studies,*
***Fostering** global strategic alliances,*
***Promoting** interdisciplinary research,*
***Producing** socially responsible professionals*
*with entrepreneurial skills,*
*leadership qualities and integrity*
***Contributing** to position the country as a*
*knowledge hub in the region.*

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# GOALS

1. To be a centre of excellence in teaching and learning in computing [**Education**]
2. To promote research and development in computing while emphasizing interdisciplinary research [**Research**]
3. To create socially responsible professionals with entrepreneurial skills, leadership qualities and integrity [**Student Development**]
4. To establish and maintain conducive environment for productive work and career enhancement [**Staff Development**]
5. To enhance the institutional image[**Governance**]
6. To empower society through ICT [**Social Responsibility**]
7. To make significant contributions and to provide professional services to position the country as a knowledge hub[**Consultancy**]

# DIRECTOR'S REVIEW

It is with great pleasure and a sense of pride that I present the Annual Report 2016 of the University of Colombo School of Computing after being appointed as the Director of UCSC on 1st June 2016.

As a centre of excellence in teaching and learning in computing which is the main goal of UCSC, this report presents the accomplishments as well as challenges faced during both undergraduate and postgraduates programmes conducted in the year 2016. 761 students, who got the opportunity to be enrolled in undergraduate programmes through the UGC selection process, continued their education similar to the last few years and 236 students were able to complete and be graduated at the end of the year. This report describes the process of the undergraduate education with collected statistics of students for your information.

Since there is a huge demand for computing education, UCSC continues its most important national service of conducting BIT external degree programme for which 1602 students got the opportunity to be registered. During the year, UCSC conducted all its BIT exams as scheduled but there were some delays in releasing final results due to administration issues faced at the latter part of the year. However, the convocation and diploma awarding ceremonies were held according to the schedule.

Similar to previous years, the demand for the Masters Degree Programme for 2016 is very high. Out of 540 applicants only 184 students were selected for the programmes, and they started their Master's studies in the first quarter of 2016. Although we conducted the Masters programme on time, the academic staff found it very difficult to complete the paper marking due to the workload of their other programmes. The pass rate and the completion rate of the programme are not satisfactory compared to previous years.

The quality assurance cell of UCSC was established since the main university decided to carry out the institutional review. Based on the UGC Quality Assurance and Accreditation Council, new guidelines for the institutional review, all academic, administrative and non-academic activities were analysed with respect to large number of standards and the best practices were categorized into 10 criteria. The University of Colombo received the A grade for the institutional review and the UCSC also obtained A grade as described in the self-evaluation report which is annexed to this report. Although the A Grade developed the confidence for our practices, there are many areas to be addressed in order to maintain the status.

The Infrastructure development is the main focal point of the year of 2016. Both the government funds as well as the UCSC generated income were invested in building the multi-purpose auditorium and lecture halls. It was supposed to complete the construction before December 2016 but due to many construction issues, the contractors requested more than 6 months to complete the project. The phase II of the canteen building was also started in the year 2016. Simultaneously, many activities related to research and development were carried out during 2016 in order to maintain the prominent status of UCSC in the field of Computing. Research Symposium 2016 and ICTer2016 were the two main events and the showcases for gathering and sharing the knowledge in the domain. Many new projects were started in 2016 and the details about the aforesaid projects have been given in the report. The power of UCSC depends on its human-resources. Therefore, many activities were designed to develop as well as to motivate the staff with the aim of enhancing their productivity. The UCSC continued to provide its service to people, government and private section through its partnership with other parties as mentioned in this report.

Finally, I take this opportunity to express my gratitude to the Council, Senate, the Vice Chancellor, the Board of Management, Academic Syndicate, and Management Committee and all other staff of UCSC **for making 2016 – a land mark year of a new era.**

***Professor K. P. Hewagamage***
Director
University of Colombo School of Computing (UCSC),
Colombo

# OVERVIEW OF THE UCSC

The University of Colombo School of Computing (UCSC) was established as a Centre of Higher Learning on 1st September, 2002 by merging the Institute of Computer Technology (ICT) and the Department of Computer Science (DCS) 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, with the purpose of providing, promoting and developing higher education in Computer Science, Information and Communication Technology. It is a Higher Educational Institute within the University of Colombo established to develop and promote computing studies. The UCSC was granted the financial autonomy and its operations have been described in the Ordinance 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).

According to the ordinance of UCSC, the University of Colombo School of Computing has 03 academic departments, namely

- Department of Computation & Intelligent Systems (CIS)
- Department of Communication & Media Technologies (CMT)
- Department of Information Systems Engineering (ISE)

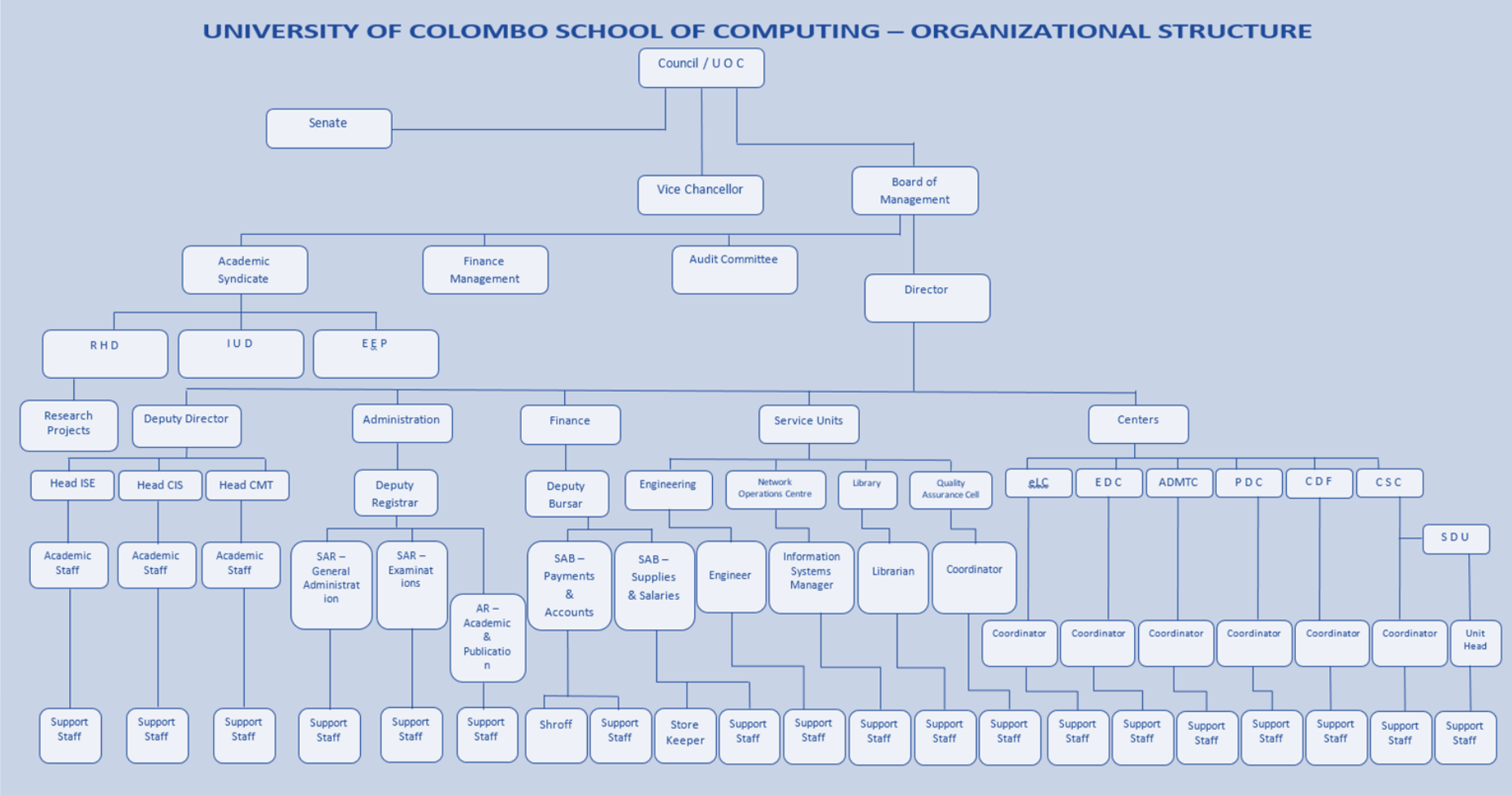
According to the ordinance of UCSC, the University of Colombo School of Computing has 06 centres**:**

- Advanced Digital Multimedia Centre (ADMTC);
- Computing Services Centre (CSC);
- External Degrees Centre (EDC);
- e-Leaning Centre (e LC);
- Professional Development Centre (PDC);
- Centre for Digital Forensics (CDF).

## *ORGANIZATION STRUCTURE OF UCSC – 2016*

Based on the structure declared in the ordinance, the UCSC organizational structure in the below diagram has been designed to carry out the management activities of UCSC. Both the staff allocation and reporting structure were coordinated according to this hierarchy.

*UCSC Organizational Chart – 2016*



# *AT A GLANCE – KEY PERFORMANCE INDICATORS (KPIS) OF UCSC (2013-2016)*

| | | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| **Education (Enrolled/Graduated)** | | | | | |
| Internal Undergraduates | All | 769 | 757 | 770 | 761 |
| | In | 254 | 212 | 256 | 250 |
| | Out | 212 | 215 | 247 | 236 |
| Science Undergraduates* | | 1275 | 1119 | 997 | 1060 |
| Diploma in Information Technology (DIT) (External) | All | 4175 | 4535 | 4075 | 2188 |
| | In | 2034 | 2379 | 1890 | 1602 |
| | Out | 611 | 515 | 334 | 403 |
| Higher Diploma in Information Technology (HDIT) (External) | All | 2391 | 2583 | 2509 | 756 |
| | In | 714 | 721 | 690 | 490 |
| | Out | 305 | 339 | 226 | 149 |
| Bachelor of Information Technology (BIT) (External) | All | 1416 | 1537 | 1651 | 1177 |
| | In | 312 | 347 | 346 | 242 |
| | Out | 194 | 225 | 260 | 206 |
| Postgraduates | All | 303 | 370 | 452 | 454 |
| | In | 143 | 209 | 188 | 184 |
| | Out | 122 | 107 | 121 | 127 |
| Extension Programmes | | 309 | 389 | 339 | 334 |
| **Research** | | | | | |
| Research (MPhil/PhD) | All | 39/07 | 41/09 | 42/09 | 36/06 |
| | In | 09 | 07/06 | 08/01 | 01/07 |
| | Out | 6 | 3/1 | 3/1 | 00/01 |
| Research Projects | All | 05 | 10 | 11 | 34 |
| | New | 1 | 6 | 3 | 19 |
| Publications | | 70 | 67 | 71 | 64 |
| **Consultancy Projects** | | | | | |
| | Local | 10 | 10 | 23 | 24 |
| | Foreign | - | - | 1 | 2 |
| **Social Responsibility Programmes** | | 10 | 10 | 10 | 12 |

| | | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| **Governance** | | | | | |
| Permanent Academic Staff | All | 36 | 40 | 38 | 43 |
| | Professors | 02 | 03 | 03 | 03 |
| | PhD | 20 | 20 | 23 | 24 |
| | Masters | 10 | 11 | 09 | 09 |
| Permanent Academic Support Staff | | 04 | 04 | 04 | 04 |
| Temp Academic Staff (Instructors & Asst. Lect.) | | 15 | 30 | 27 | 21 |
| Permanent Admin and Non-Ac Staff | | 40 | 40 | 37 | 46 |
| Contract Staff (including casual & trainee) | | 49 | 42 | 42 | 25 |
| Research/Project Staff | | 11 | 27 | 24 | 18 |
| **Finance** | | | | | |
| | | **2013** | **2014** | **2015** | **2016** |
| Annual Recurrent Expenditure (Millions SLR) | | 133 | 161 | 307 | 335 |
| Treasury Grant (Recurrent) (Millions SLR)- Act. | | 90 | 94 | 122 | 160 |
| Treasury Grant (Capital) (Millions SLR) – Actual | | 26 | 15 | 103 | 200 |
| Generated Income | | 242 | 247 | 211 | 201 |
| UCSC Contribution for UG (Millions SLR) (Generated %) | | 88 (37%) | 185 (75%) | 122 (58%) | 147(48%) |
| UCSC Budget (Millions SLR) | | 363 | 479 | 577 | 622 |
| Research/Project (Millions SLR) | | 9.3 | 9.7 | 14 | 11 |
| Cost per Employee (SLR ‘000s) per annum | | 774 | 795 | 881 | 1,008 |
| Cost per Student (SLR ‘000s) – Treasury Recurrent | | 152 | 190 | 195 | 269 |
| **Infrastructure** | | | | | |
| Library Books | | 8,303 | 8,678 | 8,783 | 8931 |
| Computers : staff | | 1:1 | | | |
| Computers : students (General students) (Special students) | | 1:4 1:1 | | | |
| Space Utilization (employee) (sq. m.) | | 10.42 | 11.70 | 11.70 | 11.70 |
| Space Utilization (student) (sq. m.) | | 2.68 | 4.77 | 4.77 | 4.77 |

# 1. GOVERNANCE

During the year 2016, the activities were carried out based on the corporate plan for 2015-2020. It essentially focuses on the 7 goals as identified at the beginning of this report. The corporate plan described the activities planned for the next five years together with the action plan for 2016. When the new Director, Prof. K. P. Hewagamage, was appointed in June 2016, it was decided to revise the corporate plan for 2017-2021 considering feedbacks and progress of current plan while maintaining the same seven goals identified in the year 2015-2020.

The Management of the UCSC is handled by the Director of the UCSC with the assistance of the Heads of the Departments, the Deputy Registrar, the Deputy Bursar, Centre Coordinators, and several administrative staff members of divisions. The Director chaired all UCSC Statutory and Selection Committees.

## *1.1 OFFICERS OF THE UCSC*

| | |
|---|---|
| **Director** | Prof GN Wikramanayake (January-May 2016) & Prof KP Hewagamage (June – December 2016) |
| **Deputy Director** | Prof KP Hewagamage (January-May 2016) & Dr DAS Athukorala (June – December 2016) |
| **Heads** | **Department of Computation Intelligent Systems (CIS) -** Dr DAS Athukorala (CIS)<br>**Department of Communication and Media Technology (CMT) -** Dr GDSP Wimalaratne<br>**Department of Information and Systems Engineering (ISE)** Prof KP Hewagamage (January-May 2016) & Dr MDJS Goonetillake (June – December 2016) |
| **Deputy Registrar** | Mr. K. K. Dharmathilaka |
| **Deputy Bursar** | Mr. E. M. Gunarathna |
| **Coordinators** | **Advanced Digital Media Technology Centre (ADMTC) -** Mr ST Nandasara<br>**Computer Service Centre (CSC) –** Mr LP Jayasinghe (January – September 2016) & Dr K L Jayaratne (October – December 2016 )<br>**External Degree Centre (EDC) –** Mr. LP Jayasinghe<br>**e-Learning Centre (eLC)** – Dr DD Karunaratna<br>**Professional Development Centre (PDC)** – Dr SMKD Arunathilake<br>**Centre for Digital Forensic (CDF)** – Mr KS Goonathilake |

## *1.2 AUTHORITIES*

The Authorities of the School are the Board of Management; Academic Syndicate; Boards of Study; Departments of Study and Centres as described in the ordinance of UCSC.

## 1.2.1 BOARD OF MANAGEMENT (BOM)

11 monthly meetings and 02 special meetings of the Board of Management were held during the year 2016. First Thursday is usually allocated for the BOM meetings. Minutes and memos are distributed before the meeting. The composition of the Board of Management is given below together with the statistics of the meeting participation.

| **Ex- Officio** | |
|---|---|
| • Director | Prof GN Wikramanayake (till May) &(P-5)<br>Prof KP Hewagamage (from June) (P-8) |
| • Deputy Director | Prof KP Hewagamage (till May) & (P-5)<br>Dr DAS Athukorala (from June) (P-8) |
| • Nominee Secretary of Higher Education | Mr. M Dewasurendra (P-13) |
| • Nominee, Ministry of Finance | Mrs. DMA Harasgama (P-9 & E-4) |
| • Dean, Faculty of Science | Prof. KRR Mahanama (P-11 & E-2) |
| • Head of CIS | Dr DAS Athukorala (P-5) |
| • Head of CMT | Dr GDSP Wimalaratne (P-8, E-2 & L-3) |
| • Head of ISE | Prof KP Hewagamage(till May) &<br>Dr. M D J S Goonetillake (from July) (P-6 & E-1) |
| **Other Members** | |
| • Council Members (02) | Mr. JM Swaminathan (P-5, E-3 & A-5)<br>Dr. Sanjeeva Weerawarna (absent for 2016) |
| • Senate Member (02) | Prof. Sumedha Jayanetti (P-10 & E-3)<br>Dr. Pavithra Kailasapathy (P-10 & E-3) |
| • Nominees of UGC (02) | Mr. Ruwan Keragala (P-3, E-6 & A-4)<br>Deshamanya Mr MDD Pieris (P-13) |
| • Representatives IT Industry (02) | Mr. Mano Sekeram (P-2, E-8 & A-3)<br>Mr. Ranil Rajapakse (P-4 & E-9) |
| • Nominees, Academic Syndicate (03) | Mr. ST Nandasara, (P-11 & E-2)<br>Dr. CI Keppetiyagama (P-13)<br>Dr. TNK De Zoysa (P-13) |
| • Invitees | Prof GN Wikramanayake (Former Director- from June) (P-3, E-3) |

**P-Present, E-Excused, A-Absent & L-Leave**

## 1.2.2 FINANCE AND MANAGEMENT COMMITTEE (FMC)

The Finance and Management Committee (FMC) is a sub-committee that assists the Board of Management to discuss financial activities in detail before taking relevant decisions at the Board of Management. The committee was able to meet 4 times during the year 2016 and the Director/UCSC chaired those meetings.

| | |
|---|---|
| Chairman | Prof GN Wikramanayake (till May) (P-2) &<br>Prof KP Hewagamage (from June) (P-2) |
| Deputy Director | Prof KP Hewagamage (till May) (P-2) &<br>Dr DAS Athukorala (from June) (P-2) |

| | |
|---|---|
| Board Nominees | Prof KRR Mahanama (P-4)<br>Deshamanya Mr MDD Pieris (P-4)<br>Dr Pavithra Kailasapathy (P-4)<br>Mr. Mano Sekeram (E-4) |
| Deputy Bursar | Mr. E M Gunarathna (P-4) |
| Deputy Registrar | Mr. K K K Dharmathilaka(P-4) |
| Chairman | Prof GN Wikramanayake (till May) (P-2) &<br>Prof KP Hewagamage (from June) (P-2) |

**P-Present, E-Excused, A-Absent & L-Leave**

## 1.2.3 AUDIT COMMITTEE

The Audit Committee (AC) is a Sub-Committee that assists the Board of Management to discuss matters related to internal audit reports and final audit reports before taking appropriate decisions at the Board of Management. It is usually chaired by a special nominee of the Board of Management and the Director and the Deputy Director are invitees of the committee. The representatives of the Departments of Government Audit, the Departments of Internal Audit of the University of Colombo, and Department of Internal Audit of the University Grant Commission are also invited for this meeting. Representatives of Earnest and Young, Internal Auditors appointed by the Board of Management are also invited for these meetings. The statistics of participation of the 04 meetings of the year 2016 are given with respect to each member.

| | |
|---|---|
| Chairman | Mrs DMA Harasgama (P-4) |
| Director | Prof GN Wikramanayake (till May) (P-1) &<br>Prof KP Hewagamage (from June) (P-3) |
| Deputy Director | Prof KP Hewagamage (till May) (P-1) &<br>Dr DAS Athukorala (from June) (P-3) |
| Board Nominees | Mr. M Dewasurendra (P-4)<br>Mr. Ruwan Keragala (P-1 & E-3) |
| Rep of Auditor General | Mr. RMPA Janaka (Jan. – Sep 2016) (P-2)<br>Ms RPS Pathmini (Oct – Dec. 2016) (P-2) |
| Internal Auditor/UGC | Mr Janaka Bogamuwa (P-4) |
| Internal Auditor/UOC | Mr. KEW Jayasiri (P-2 & E-2) |
| Rep /E&Y Auditors | Ms GDA Weerasuriya (P-4) |

**P-Present, E-Excused**

## 1.2.4 ACADEMIC SYNDICATE

11 meetings of the Academic Syndicate were held during the year. The composition of the Academic Syndicate has been defined in the ordinance of UCSC. The Academic Syndicate takes the decisions recommended by three Boards of Studies namely, the Board of Study (BOS) for Internal Undergraduate Degrees (IUD), the BOS for Research and Higher Degrees (RHD) and the BOS for External and Extension Programme (EEP). Important matters are recommended to get the approval and forwarded information is identified using minute number.

All important decisions taken at the Academic Syndicate are supposed to be confirmed at the Board of Management and the Senate of the University of Colombo. Minutes of all formal meetings held during 2016 are available for references. Formal members of the Academic Syndicate and their participation statistics are given below.

| No | Name and Designation | Attendance of Academic Syndicate (Out of 11 Meeting) | | |
|---|---|---|---|---|
| | | Present | Absent | Excused |
| 01 | Prof. K P Hewagamage, Director | 10 | | 1 |
| 02 | Dr. D A S Atukorale, Senior Lecturer Gr. I Deputy Director, Head/CIS | 10 | | 1 |
| 03 | Prof. G N Wikramanayake, Head of Quality Assurance Cell | 10 | | 1 |
| 04 | Prof. N D Kodikara, Professor | 8 | 1 | 2 |
| 05 | Dr. A R Weerasinghe, Senior Lecturer Gr. I | Sab | -- | -- |
| 06 | Mr. G P Seneviratne, Senoir Lecturer Gr. I | 11 | | |
| 07 | Mr. G K A Dias, Senior Lecturer Gr. I | 11 | | |
| 08 | Dr. D N Ranasinghe, Senior Lecturer Gr. I | 8 | 2 | 1 |
| 09 | Dr. D D Karunaratne, Co-ordinator/e-LC, Senior Lecturer Gr. I | 10 | | 1 |
| 10 | Dr. G D S P Wimalaratne, Head/ CMT, Senior Lecturer Gr. I | 8 | | 3 |
| 11 | Dr. (Mrs.) M D J S Goonetillake, Head, /ISE, Head/ Undergraduate Programs, Senior Lecturer Gr. I | 9 | 1 | 1 |
| 12 | Dr. H L Premaratne, Senior Lecturer Gr. I | 10 | | 1 |
| 13 | Dr. T N K De Zoysa, Senior Lecturer Gr. I | 11 | | |
| 14 | Dr. C I Keppetiyagama, Senior Lecturer Gr. I | 11 | | |
| 15 | Dr. K L Jayaratna, Senior Lecturer Gr. I | 7 | 1 | 3 |
| 16 | Dr. T Sritharan, Senior Lecturer Gr. I | 9 | | 2 |
| 17 | Dr. (Mrs.) S M K D Arunathilake, Senior Lecturer Gr. II | 9 | | 2 |
| 18 | Dr. (Ms.) Yamaya Ekanayaka, Senior Lecturer Gr. I | 8 | 1 | 2 |
| 19 | Dr. H A Caldera, Senior Lecturer Gr. I | 10 | | 1 |
| 20 | Dr. M G N A S Fernando, Senior Lecturer Gr. II | 11 | | |
| 21 | Mr. S T Nandasara, Coordinator/ ADMTC & Lecturer | 10 | | 1 |
| 22 | Mr. K P M K Silva, Lecturer | 6 | 1 | 3 |
| 23 | Dr. T M H A Usoof, Senior Lecturer Gr. II | 10 | | 1 |
| 24 | Mrs. M W A C R Wijesinghe, Senior, Lecturer Gr. II | 10 | | 1 |
| 25 | Mr. W V Welgama, Senior Lecturer Gr. II | 9 | | 2 |
| 26 | Dr. M D R N Dayaratne, Senior Lecturer Gr. II | 10 | | 1 |
| 27 | Dr. H E M H B Ekanayake, Senior Lecturer Gr. II | 9 | | 2 |
| 28 | Dr. (Mrs.) T A Weerasinghe, Lecturer | 10 | | 1 |
| 29 | Mr. L P Jayasinghe, Instructor Gr. I | 10 | | 1 |
| 30 | Dr. (Mrs) F H A M Premachandra, Lecturer (Prob.) | 8 | | 3 |
| 31 | Dr. M I E Wickramsinghe, Lecturer(Prob.) | 8 | 1 | 2 |

## 1.2.5 BOARDS OF STUDY

According to the ordinance of UCSC, there are three Boards of Studies for Internal Undergraduate Degrees (BOS/IUD), Research and Higher Degrees (BOS/RHD) and External and Extension Programmes (BOS/EEP). The Director UCSC is supposed to chair these boards of studies and there is an academic staff member as the Secretary and administrative staff member to organize meetings and maintain meetings.

### 1.2.5.1 BOARD OF INTERNAL UNDERGRADUATE DEGREES (BOS/IUD)

During 2016, 10 BOS/IUD was formally held and minutes of all these meetings have been processed and maintained properly. All matters related to internal undergraduate degrees, such as teaching, learning, assessment and administrations are discussed in detail at BOS/IUD which is usually held on a monthly basis. Two student representatives also attend these meetings and only the first part of the meeting is held in their presence. The Composition of the Board of Internal Undergraduate Degrees (IUD) and the participation statistics of the meeting are given below.

| No | Name and Designation | Attendance of IUD (Out of 10 Meeting) | | |
|---|---|---|---|---|
| | | Present | Absent | Excused |
| 01 | Prof. K P Hewagamage, Director | 10 | | |
| 02 | Dr. D A S Atukorale, Senior Lecturer Gr. I Deputy Director, Head/CIS | 10 | | |
| 03 | Prof. G N Wikramanayake, Head of Quality Assurance Cell | 9 | | 1 |
| 04 | Prof. N D Kodikara, Professor | 9 | 1 | |
| 05 | Dr. A R Weerasinghe, Senior Lecturer Gr. I | 1 | | |
| 06 | Mr. G P Seneviratne, Senior Lecturer Gr. I | 8 | | 2 |
| 07 | Mr. G K A Dias, Senior Lecturer Gr. I | 10 | | |
| 08 | Dr. (Ms.) C D Thilakarathna, Joint Special Degree Programme | 4 | 4 | 2 |
| 09 | Dr. D N Ranasinghe, Senior Lecturer Gr. I | 3 | 7 | |
| 10 | Dr. D D Karunaratne, Co-ordinator/e-LC, Senior Lecturer Gr. I | 10 | | |
| 11 | Dr. G D S P Wimalaratne, Head/ CMT, Senior Lecturer Gr. I | 4 | 1 | 5 |
| 12 | Dr. (Mrs.) M D J S Goonetillake, Head, /ISE, Head/ Undergraduate Programs, Senior Lecturer Gr. I | 8 | 1 | 1 |
| 13 | Dr. H L Premaratne, Senior Lecturer Gr. I | 8 | | 2 |
| 14 | Dr. T N K De Zoysa, Senior Lecturer Gr. I | 9 | | 1 |
| 15 | Dr. C I Keppetiyagama, Senior Lecturer Gr. I | 10 | | |
| 16 | Dr. K L Jayaratna, Senior Lecturer Gr. I | 10 | | |
| 17 | Dr. T Sritharan, Senior Lecturer Gr. I | 6 | 3 | 1 |
| 18 | Dr. (Mrs.) S M K D Arunathilake, Senior Lecturer Gr. II | 9 | | 1 |
| 19 | Dr. (Ms.) Yamaya Ekanayaka, Senior Lecturer Gr. I | 7 | | 3 |
| 20 | Dr. H A Caldera, Senior Lecturer Gr. I | 10 | | |
| 21 | Dr. M G N A S Fernando, Senior Lecturer Gr. II | 9 | | 1 |
| 22 | Mr. S T Nandasara, Coordinator/ ADMTC & Lecturer | 9 | | 1 |

| | | | | |
|---|---|---|---|---|
| 23 | Mr. K P M K Silva, Lecturer | 6 | 2 | 2 |
| 24 | Dr. T M H A Usoof, Senior Lecturer Gr. II | 10 | | |
| 25 | Mrs. M W A C R Wijesinghe, Senior Lecturer Gr. II | 9 | | 1 |
| 26 | Mr. W V Welgama, Senior Lecturer Gr. II | 10 | | |
| 27 | Dr. M D R N Dayaratne, Senior Lecturer Gr. II | 6 | 2 | 2 |
| 28 | Dr. H E M H B Ekanayake, Senior Lecturer Gr. II | 10 | | |
| 29 | Mr. R S Madanayake, Lecturer (Prob.) | 1 | 2 | 7 |
| 30 | Mr. S S P Matharaarachchi, Lecturer(Prob.) | 9 | | 1 |
| 31 | Dr. (Mrs.) T A Weerasinghe, Lecturer | 10 | | |
| 32 | Mr. L P Jayasinghe, Instructor Gr. I | 9 | 1 | |
| 33 | Mr. G.P.N. Boteju, Instructor Gr. II | 9 | | 1 |
| 34 | Mrs. L N C De Silva, Lecturer (Prob.) | 10 | | |
| 35 | Dr. (Mrs) F H A M Premachandra, Lecturer (Prob.) | 7 | 1 | 2 |
| 36 | Dr. M I E Wickramsinghe, Lecturer(Prob.) | 10 | | |
| 37 | Mrs. K P U Jayasinghe, Lecturer (Prob.) | 7 | | 3 |
| 38 | Mr. H K T C Hallolluwa, Lecturer (Prob.) | 2 | | 8 |
| 40 | Dr. P V K G Gunawardhana, Senior Lecturer Gr. II (Contract, by invitation) | 6 | | 4 |
| 41 | Dr. K H E L W Hettiarachchi, Senior Lecturer Gr. II (Contract, by invitation) | 8 | | 2 |
| 42 | Dr. K D Sandaruwan, Senior Lecturer Gr. II (Contract, by invitation) | 8 | | 2 |

### 1.2.5.2 BOARD OF RESEARCH AND HIGHER DEGREES (BOS-RHD)

The Board of Research and Higher Degrees (RHD) is a formal committee established under the ordinance of UCSC and there were 11 meetings held during 2016. All matters related to the research and postgraduate studies are monthly discussed in detail at this board and matters which require the approval are forwarded to the Academic Syndicate. All these matters are properly documented and meeting minutes are managed. During 2016, 11 RHD meetings have been held and the participation statistics of the members are given below.

| No | Name | Attendance of RHD (Out of 11 Meeting) | | |
|---|---|---|---|---|
| | | Present | Absent | Excused |
| 01 | Prof. K P Hewagamage, Director | 11 | | |
| 02 | Dr. D A S Atukorale, Senior Lecturer Gr. I Deputy Director, Head/CIS | 9 | 1 | |
| 03 | Prof. G N Wikramanayake, Head of Quality Assurance Cell | 10 | | 1 |
| 04 | Prof. N D Kodikara, Professor | 1 | | |
| 05 | Mr. G P Seneviratne, Senior Lecturer Gr. I | 11 | | |
| 06 | Dr. D D Karunaratne, Co-ordinator/e-LC, Senior Lecturer Gr. I | 9 | | |
| 07 | Dr. G D S P Wimalaratne, Head/ CMT, Senior Lecturer Gr. I | 7 | 2 | 1 |

| | | | | |
|---|---|---|---|---|
| 08 | Dr. (Mrs.) M D J S Goonetillake, Head, /ISE, Head/ Undergraduate Programs, Senior Lecturer Gr. I | 9 | 1 | 1 |
| 09 | Dr. T N K De Zoysa, Senior Lecturer Gr. I | 10 | 1 | |
| 10 | Dr. K L Jayaratna, Senior Lecturer Gr. I | 10 | | 1 |
| 11 | Dr. (Ms.) Yamaya Ekanayaka, Senior Lecturer Gr. I | 2 | | |
| 12 | Mr. S T Nandasara, Coordinator/ ADMTC & Lecturer | 10 | 1 | |
| 13 | Mr. K P M K Silva, Lecturer | 7 | 1 | 2 |
| 14 | Mrs. M W A C R Wijesinghe, Senior Lecturer Gr. II | 9 | 1 | 1 |

### 1.2.5.3 BOARD OF EXTERNAL AND EXTENSION PROGRAMMES (BOS - EEP)

The Board of External and Extension Programmes (BOS-EEP) is a formal committee defined in the ordinance of UCSC. Monthly meetings were held to discuss all the matters related to external and extension study programmes managed by the UCSC. It is chaired by the Director and there is a formal academic secretary and administrative staff officer to manage the meeting minutes and activities. During 2016, BOS-EEP has held 11 meetings and the participation statistics of the formal members are given below.

| No | Name | Attendance of EEP (Out of 11 Meetings) | | |
|---|---|---|---|---|
| | | Present | Absent | Excused |
| 01 | Prof. K P Hewagamage, Director | 10 | | 1 |
| 02 | Dr. D A S Atukorale, Deputy Director, Head/EEP | 11 | | |
| 03 | Prof. G N Wikramanayake, Head of Quality Assurance Cell, Former Director | 10 | | 1 |
| 04 | Dr. H A Caldera, Academic Co-ordinator/BIT | 9 | | 2 |
| 05 | Dr. D D Karunaratne, Co-ordinator/e-LC | 7 | 2 | 2 |
| 06 | Mr. S T Nandasara, Co-ordinator/ADMTC, Secretary/EEP | 10 | 1 | |
| 07 | Mr. K S Goonathilake, Co-ordinator/CDF | 6 | 2 | 3 |
| 08 | Mr. L P Jayasinghe, Co-ordinator/EDC & Co-ordinator/CSC (till Oct) | 10 | 1 | |
| 09 | Dr. K L Jayaratna, Co-ordinator/CSC (from Nov) | 2 | | |
| 10 | Dr. S M K D Arunathilake, Co-ordinator/PDC | 1 | 1 | 9 |
| 11 | Dr. D G S P Wimalaratne, Nominee - CMT | 5 | 2 | 4 |
| 12 | Dr. (Mrs.) M D J S Goonetillake, Nominee - IUD (From Nov '16) | 1 | 1 | |
| 13 | Dr. M G N A S Fernando, Nominee – CS (from Sep) | 4 | | |
| 14 | Mr. W V Welgama, Project Co-ordinator/BIT | 8 | | 1 |

# 2. EDUCATION

According to the corporate plan of UCSC, the major responsibility of the organization is to promote computing education at the University of Colombo. Hence, UCSC manages the computing education with respect to undergraduate programmes (internal), postgraduate programmes, and external or extension programmes. The three boards of studies (described in previous sections) are responsible for managing the processes of these education programmes.

## *2.1 UNDERGRADUATE EDUCATION*

Computing studies at the undergraduate level were first introduced way back in 1967 as a part of the courses offered in the Faculty of Science, at the University of Colombo. UCSC, which is a computing faculty of the University of Colombo, still continues to offer courses in the Faculty of Science and 1060 students of the Faculty of Science followed courses conducted by the UCSC. Degree programmes in Computing were started in 1990 at the University of Colombo under the Faculty of Science but after establishing UCSC, undergraduate degrees in Computing became the main responsibility of UCSC. In 2016, 275 students selected by the UGC were given the opportunity to follow the courses in Computer Science (CS) degree, Information System (IS) degree and Software Engineering (SE) degree.

### 2.1.1 INTERNAL UNDERGRADUATE DEGREE PROGRAMMES

UCSC currently offers five undergraduate degree programmes in Computer Science, Software Engineering and Information systems considering both **SLQF Level 5 and SLQF Level 6** declared by the University Grant Commission. The curriculum for these degree programmes were designed and developed based on the IEEE/ACM international guidelines for computing degrees. UCSC has also established an academia-industry advisory board to obtain the feedback of the local industry to improve the relevance of all its computing degrees in order to maintain the employability rate of UCSC graduates over 90%. Those five degrees are identified below with respect to enrolment.

***Table: 2.2.1 : Distribution of UCSC Undergraduate Population***

| Degree Programme | Duration (Academic Years) | SLQF Level | Enrolment 2016 |
|---|---|---|---|
| Bachelor of Science in Computer Science (BSc in CS) | 1+2+3 Years | Level 5 | 158+158+96 |
| Bachelor of Science **Honours** in Computer Science (BSc Hons. in CS) | 4 Years+3 Years | Level 6 | 19+20 |
| Bachelor of Science **Honours** in Software Engineering (BSc Hons. in SE) | 4 Years+3 Years | Level 6 | 21 +20 |
| Bachelor of Science in Information Systems (BSc in IS) | 1+2+3 Years | Level 5 | 92+88+49 |
| Bachelor of Science **Honours** in Information Systems (BSc Hons. in IS) | 4 Years+3 Years | Level 6 | 20 +20 |

The selection for the four year degree programme is carried out based on the students' performances of the first two years. Students who earn more than 2.75 GPA are eligible to apply for honours degree but the current intake size for CS stream is 40 and IS stream is 20. CS students were given the opportunity to select BSc Hons

in CS or BSc Hons in SE. Results of the first two years examination were released before the commencement of the first semester of the third year of studies. The revised curriculum is now active for all degree programmes. A/L students who have got at least a Credit Pass (C) in Combined Mathematics or Physics or Higher Mathematics AND at least a Pass (S) in TWO other subjects from Combined Mathematics, Higher Mathematics, Physics, Chemistry, Information & Communication Technology or Mathematics are eligible to apply for CS stream at the UCSC. A selection test (aptitude test) was held for IS degree programme in June 2016 where 2003 applicants applied and 304 were qualified to apply for IS stream. Actual number of students registered for degree programmes are given below.

## 2.1.2 ACADEMIC YEAR – 2016 AND STUDENT ENROLMENT

*Table 2.1.2 - A: Enrolment - Distribution of UCSC Intake - 2016*

| Steam of Study | Intake Size | Number enrolled | Male | Female |
|---|---|---|---|---|
| **CS Stream** | 175 | 158 (90%) | 114 (72%) | 44 (28%) |
| **IS Stream** | 100 | 92 (92%) | 49 (53%) | 43 (47%) |
| **Total** | **275** | **250 (91%)** | **163 (65%)** | **87 (35%)** |

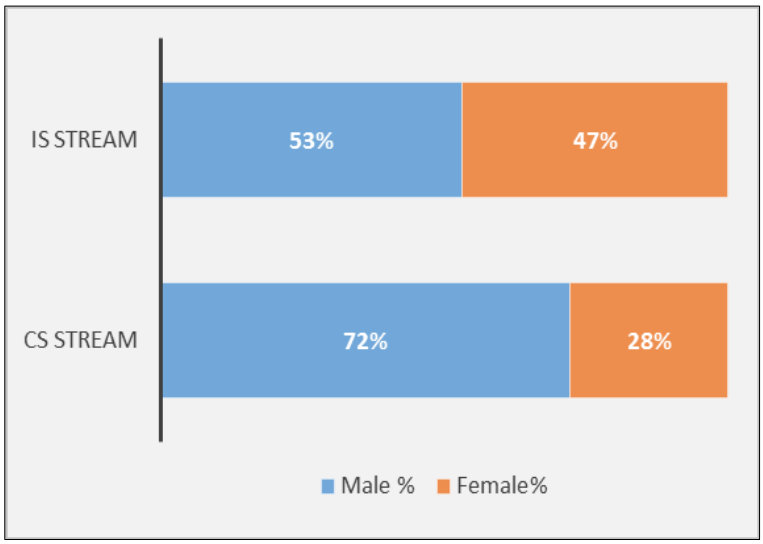



***Figure 2.1.2 - A: Gender wise enrolment distribution of UCSC intake -2016***

An academic year usually consists of two semesters where each semester comprises of 15 weeks. A mid semester break is one week and there will be one week study leave after the semester before commencing the examination. The calendar for the academic year 2016 is given below. The inauguration for the new undergraduate students selected for UCSC were held on 10th February 2016 and followed by the orientation programme from 12th to 26th February 2016 before the commencement of the academic year.

## Academic Time table for 2016

| DURATION | | WEEKS | Year of Registration | | | | |
|---|---|---|---|---|---|---|---|
| | | | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 |
| From | To | | | | | | |
| 8/17/2015 | 10/11/2015 | 8 | 4S2 | 3S2 | 2S2 | 1S2 | |
| 10/12/2015 | 10/18/2015 | 1 | Mid Semester Break | | | | |
| 10/19/2015 | 12/6/2015 | 7 | 4S2 | 3S2 | 2S2 | 1S2 | |
| 12/7/2015 | 12/13/2015 | 1 | Study Leave | | | | |
| 12/14/2015 | 12/20/2015 | 1 | **2nd Semester Exams** | | | | |
| 12/21/2015 | 12/27/2015 | 1 | Exams & Christmas Vacation | | | | |
| 12/28/2015 | 1/17/2016 | 3 | **2nd Semester Exams** | | | | |
| 1/18/2016 | 2/7/2016 | 3 | | Paper Marking & Student Evaluation | | | Orientation Programme |
| 2/8/2016 | 3/6/2016 | 4 | | | Student Vacation | | Orientation Programme |
| 3/7/2016 | 4/10/2016 | 5 | | 4S1 | 3S1 | 2S1 | 1S1 |
| 4/11/2016 | 4/24/2016 | 2 | | New Year Vacation & Mid Semester Break | | | |
| 4/25/2016 | 7/3/2016 | 10 | | 4S1 | 3S1 | 2S1 | 1S1 |
| 7/4/2016 | 7/10/2016 | 1 | | Study Leave | | | |
| 7/11/2016 | 8/7/2016 | 4 | | **1st Semester Exams** | | | |
| 8/8/2016 | 9/4/2016 | 4 | | Vacation | | | |
| 9/5/2016 | 10/9/2016 | 5 | | 4S2 | 3S2 | 2S2 | 1S2 |
| 10/10/2016 | 10/16/2016 | 1 | | Mid Semester Break | | | |
| 10/17/2016 | 11/20/2016 | 5 | | 4S2 | 3S2 | 2S2 | 1S2 |
| 11/21/2016 | 12/4/2016 | 2 | | Study Leave | | | |
| 12/5/2016 | 1/1/2017 | 4 | | **2nd Semester Exams** | | | |
| 1/2/2017 | 2/12/2017 | 6 | | Project Viva & Orientation Programme | | | |

UCSC faces several administrative problems when synchronizing teaching courses of both Faculty of Science and UCSC. In adequate lecture halls also deeply affected managing teaching, practical and tutoring activities of undergraduate programmes. Hence some additional lectures were scheduled between 5pm – 7pm of weekdays and during weekends. At the same time, trade union actions of non-academic staff also badly

affected conducting the programme according to the above schedule. The distribution of student population is given in the Table 2.

*Table 2.1.2 - B: Enrolment of Internal Degree Programmes - 2016*

| Course | Intake 2014/15 | 1st Year Students | 2nd Year Students | 3rd Year Students | 4th Year Students | Total |
|---|---|---|---|---|---|---|
| BSc in Computer Science | 175 | 158 | 158 | 96 | - | **412** |
| BSc in Information Systems | 100 | 92 | 88 | 49 | - | **229** |
| BSc Hons. in Computer Science | - | - | - | 20 | 19 | **39** |
| BSc Hons. in Software Engineering | - | - | - | 20 | 21 | **41** |
| BSc Hons. in Information Systems | | | | 20 | 20 | **40** |
| **UCSC Undergraduates** | **275** | **250** | **246** | **205** | **60** | **761** |
| Faculty of Science - BSc (General) | | 456 | 329 | 238 | 37 | 1061 |
| **Total Student Population (Internal Undergraduates)** | | **706** | **575** | **443** | **97** | **1822** |

**All courses at UCSC are conducted only in English Medium.**

## 2.1.3 STUDENT PERFORMANCES AT EXAMINATION

### Study Programme: CS Stream

| Academic Year | Registered Students | No of Students Sat for Exam | No. of Students – GPA>=2.00 | No. of Students 2.0>GPA>=1.5 | GPA<1.5 | Pass Rate % [No. students >=1.5 / No. of students Sat Exams |
|---|---|---|---|---|---|---|
| 2014/2015 | 158 | 158 | 133 | 20 | 5 | 97% |
| 2013/2014 | 158 | 158 | 136 | 13 | 9 | 94% |
| 2012/2013 | 143 | 143 | 103 | 24 | 16 | 89% |
| 2011/2012 | 40 | 40 | 40 | 0 | 0 | 100% |

### Study Programme: IS

| Academic Year | Registered Students | No of Students Sat for Exam | No. of Students – GPA>=2.00 | No. of Students 2.0>GPA>=1.5 | GPA<1.5 | Pass Rate [No. students >=1.5/No. of students Sat Exams |
|---|---|---|---|---|---|---|
| 2014/2015 | 92 | 87 | 69 | 11 | 7 | 92% |
| 2013/2014 | 88 | 88 | 79 | 6 | 3 | 97% |
| 2012/2013 | 67 | 67 | 59 | 6 | 2 | 97% |
| 2011/2012 | 20 | 20 | 20 | 0 | 0 | 100% |

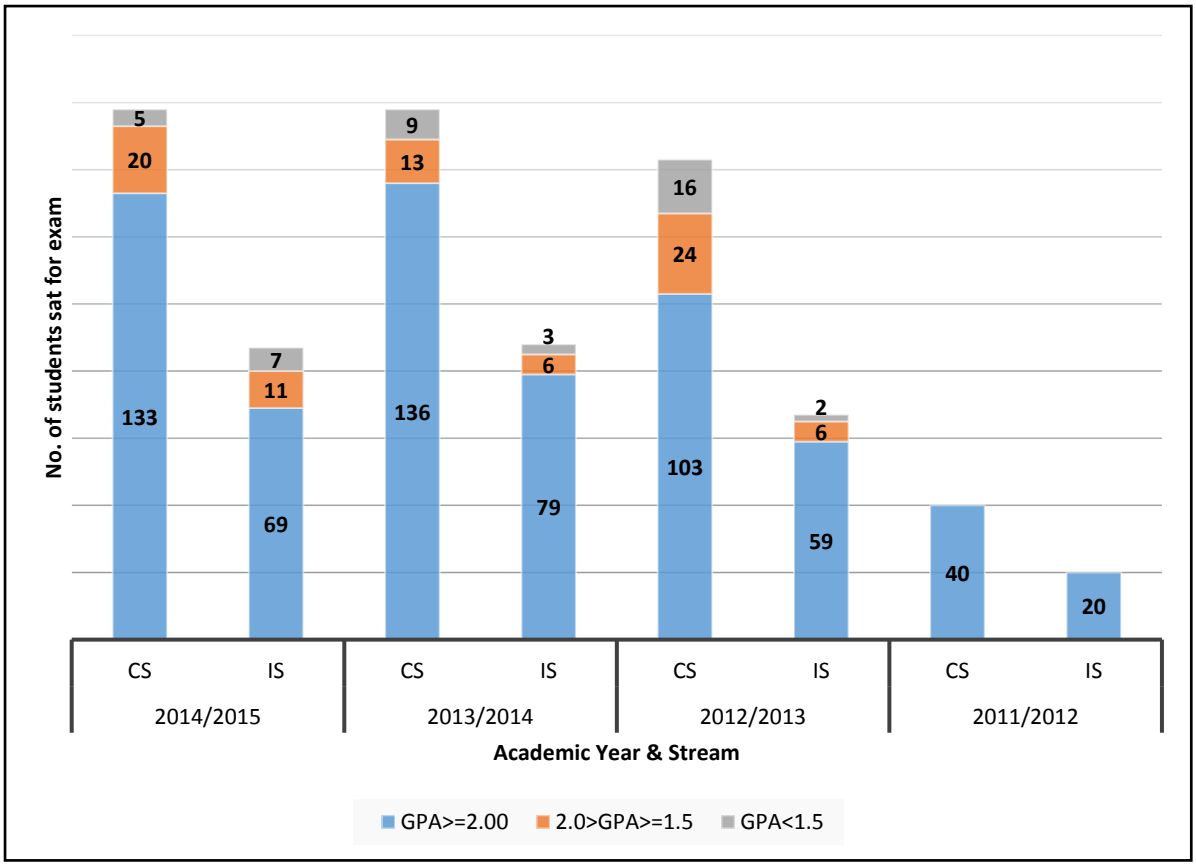



***Figure 2.1.3 - A: Student Performances at the Examinations in 2016***

Students are supposed to complete both continuous assessments and semester exams in order to get through respective academic courses based on the curriculum of degree programmes. The blended learning is practiced in all degree programmes and the Virtual Learning Environment (VLE) for the degree programme http://ugvle.ucsc.cmb.ac.lk

## 2.1.4 INDUSTRIAL PLACEMENT AND EMPLOYABILITY

In order to improve the relevance of the degree programme with respect to national and industrial requirements, the industrial placement has been introduced as a compulsory requirement for all the students of UCSC. The Professional Development Centre (PDC) was set to address these requirements and also to keep a close liaison with the IT industry and for the improvement of the academic programmes with the help of the industry. The second semester of the third year of studies is allocated for the industrial placements. The Statistics of 2016 placement is given below.

***Table 2.1.4 - A: Distribution of Industrial Placement with respect to organizations***

| Type of Organizations – Placement | Number of Students Placed | Number of Organization |
|---|---|---|
| Major IT companies | 76 | 15 |
| Small IT companies | 86 | 32 |
| Government Institutes | 23 | 07 |
| Research and consultancy projects at UCSC | 19 | 01 |
| **Total** | **204** | **55** |

PDC also organised a series of guest lectures for companies to take part voluntarily. Through those lectures, it was expected to make the undergraduates aware of the role that they have to play as professionals after being graduated. Apart from the industrial training, the PDC organised Tech-talk sessions, mock interviews, professional skills development, while providing employment opportunities for the passed out students.

## 2.1.5 UNDERGRADUATE STUDENT WELFARE

### (a) Hostel Facilities

In the year, the UCSC provided residential facilities for the most needy 1st year as well as needy final year undergraduates in keeping with the policy defined by the University Grant Commission (UGC). Since there are no dedicated hostel facilities, UCSC has rented two private properties for Boys' Hostel in Battaramulla (which could accommodate around 35 students) and Girls' Hostel in Kohuwala (which could accommodate 32 students). The Warden and Sub-Wardens who are staff members of UCSC were appointed to monitor the management of hostels and Academic Publication and Student Welfare (APW) division under the supervision of the Assistant Registrar who manages both hostels. The detailed statistics of 2016 are given in the table below.

**Boys Hostel:**

**Hostel Address:** 474/B, Kaduwela road, Deniyawatta, Battaramulla
**Academic Warden:** Dr K L Jayarathne
**Academic Sub-Warden:** Dr MIE Wickramasinghe
**Capacity:** 35

**Girls Hostel:**

**Hostel Address:** 76/16A, Sunethraadevi Mawatha, Kohuwala, Nugegoda
**Academic Warden:** *<Not Appointed>*
**Academic Sub-Warden:** Ms MGA. Srimaalee
**Capacity:** 32

***Table 2.1.5 - A: Hostel Facilities Requested and Granted***

| Hostel | Applied for hostel facilities | 1st Year students | | Final year (3rd and 4th) Year students | | | Total |
|---|---|---|---|---|---|---|---|
| | | CS Stream | IS Stream | CS Stream | IS Stream | SE Stream | |
| Boys Hostel | 95 | 20 | 4 | 7 | 1 | 0 | 32 |
| Girls Hostel | 55 | 7 | 5 | 14 | 3 | 3 | 32 |
| **Total** | **150** | **27** | **9** | **21** | **4** | **3** | **64** |

***Table 2.1.5 – B: Funds spent on Hostel facilities***

| Hostel | Capacity | Rent for 12 Months | Utility Cost | Management Cost | Registered Students | Cost per student |
|---|---|---|---|---|---|---|
| Boys Hostel | 35 | 1,041,600.00 | Other: 25,104.00<br>Water: 117,368.81<br>Electricity: 43, 945.78<br>Telephone: - | Warden Allowance – 500*12 = 6000.00<br>Sub Warden Allowance – 750*12 = 9000.00<br>Caretaker Salary: | 32 | **50,911.23** |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | Rs. 186,418.59 | 386,140.70 | | |
| Girls Hostel | 32 | 720,000.00 | Other:60,945.75<br>Water: 139,908.72<br>Electricity:108,869.20<br>Telephone:5,067.25<br><br>Rs. 314,790.92 | Sub Warden Allowance – 750*12 = 9000.00<br><br>Caretaker Salary: 445,158.07 | 32 | **46,529.66** |
| | | | | **Total** | **64** | **Rs. 48,720** |

## (b) Canteen facilities

UCSC has to provide canteen facilities for its students since the canteens of other faculties are congested during the lunch hours and not in the vicinity of UCSC premises. The new canteen which was opened in 2015 faced several operational problems due to the unavailability of a kitchen to prepare foods. Therefore, it was difficult to offer the tender for a party which could offer the service similar to other canteens in the university premises. Therefore, the kitchen of the old temporary canteen building was given to prepare meals as a short term solution for the issue. It was also discussed to set up a permanent kitchen for the canteen in the future.

UCSC student canteen is usually opened at 7.00 am and the service is available until 6.00 pm during the academic semesters. The management of the canteen is monitored through a canteen committee which comprises senior academics, administrative staff members and student representatives. The committee meets at regular intervals to discuss as well as take actions to improve the canteen service of UCSC. The members of the canteen committee of 2016 are listed below.

- Dr. D.A.S. Atukorale, Deputy Director
- Dr. (Mrs.) M.D.J.S. Goonetilleka, Head/Internal Undergraduate
- Mr. G.P. Senevirathne, Rep. Teachers Union
- Dr. D.D. Karunarathne, Coordinator/ e-Learning
- Dr. (Mrs.) S.M.K.D. Arunatilake, Student Counsellor
- Dr. (Mrs.) T.A. Weerasinghe, Student Counsellor
- Mr. L.P.Jayasinghe
- Mr. K.S. Goonathilake, Engineer
- Mr. K.K.K. Dharmathilake, DR/UCSC
- Mr. E.M. Gunarathna, DB/UCSC
- Mrs. M.M.M. Wijayawardhana, AR/ Academic & Publication
- Mrs. S.F. Imam, Ref. of Non Academic Staff
- Mr. W.L.G.R. Roshan (2013/CS/104), Student Representative
- Mr. A.A.F.M. Fasly (2014/CS/035), Student Representative
- Mr. C.S. Samarage (2013/CS/107), Student Representative
- Mr. B.N. Dahanayake (2013/CS/018), Student Representative

Since the contract of the canteen came to an end, a new tender was called in October 2016 and based on the recommendation of the Technical Evaluation Committee, Mr. S. Amarasinghe was selected as the Canteen Contactor for the student canteen for a period of one year from 18th November 2016.

UCSC provides the electricity, water and utilities required to operate the kitchen free of charge. The owner of the canteen is supposed to follow the conditions agreed at the time of offering. During 2016, UCSC has spent around **Rs. 50,000.00** to purchase materials required for the student canteen.

Since the student canteen is congested during normal hours of operations, a small staff canteen is maintained at the roof top of the building by the welfare society of the UCSC staff. Only staff and visitors are allowed to use this cafeteria and the lunch area is also located at the roof top of the building complex.

## (c) Counselling for Undergraduates

The student counseling is a service provided free of charge by the UCSC to all undergraduate students. Our experience over the past decade has shown that the level of *stress* resulting from various incidents of life such as family matters, relationships, learning and career decisions keep increasing. The UCSC Counseling service focuses on providing conducive environment for students who seek help at the *early stage* of their particular *psychosocial* problem. Our Counsellors are qualified to give a *listening ear* to the students and to assist them to *help themselves* in dealing with issues that they are facing. However, the Counsellors are also trained to make a decision whether a particular problem requires further help, and so to refer such a student to a Professional Counsellor who visits the UCSC on a weekly basis. A separate room is allocated for student counselling in the year 2016.

It is important to note that all information that students communicate with student counsellors will be kept *confidential* and will only be communicated to the Professional Counsellor if the student agrees. Similarly, the Professional Counsellor will only communicate back to the UCSC if there is any action required by the UCSC with respect to any impact on the issue of the *study program* that the student is engaged in. If the Professional Counsellor determines that further help is needed he/she will refer the student, with his/her consent, to a Clinical Psychologist or Psychiatrist.

The Services of five Student Counsellors, namely Dr (Mrs) SMKD Arunathilake, Dr (Mrs) TA Weerasinghe, Mr HEMHB Ekanayake, Mr GP Seneviratne, Dr. T Sritharan were provided to all students. Also, the service of a Professional Counsellor was obtained for duration of 3 hrs a week to facilitate the students who required counselling. UCSC paid for the service of Professional Student Counsellors on hourly basis. In general, around 20-30 students took regular consultations from these Counsellors and during certain period such as examination times, the number doubles.

## (d) Financial Assistance to undergraduate students

A financial assistance was given to students in the form of Mahapola Scholarships, Bursaries, Industry Scholarships and student welfare and distress fund.

### Mahapola Scholarships

The Mahapola scholarships sponsored by the Mahapola Trust Fund of the Ministry of Commerce & Consumer Affairs were awarded to 260 students during 2016. The value of Merit and Ordinary scholarships were Rs. 5,050 and 5,000 respectively.

***Table 2.1.5 - C:***

| Year of Intake | Year of Study | Number of students who received merit scholarship (Rs. 5050) | Number of students who received normal scholarship (Rs. 5000) | Total |
|---|---|---|---|---|
| 2014/15 | Year 1 | 1(1+0) | 72(43+29) | 73 (43+30) |
| 2013/14 | Year 2 | 1(1+0) | 86(61+25) | 87 (62+25) |
| 2012/13 | Year 3 | 0(0+0) | 79(68+11) | 79 (68+11) |
| 2011/12 | Year 4 | 2(2+0) | 19(12+7) | 21 (14+7) |
| **All** | **Total** | **4** | **156** | **260 (34%)** |

## Bursaries

Bursaries were awarded in accordance with UGC Circulars which governs the selection of students for Bursaries. 51 students were awarded Bursaries during 2016. The breakdown of the Bursary recipients for the year 2016 is shown in the following table.

***Table 2.1.5 - D: Bursary Granted - 2016***

| Year of Intake | Year of Study | Number of students who received Full Bursary (Rs. 4000) | Number of students who received half Bursary (Rs. 3900) | Total |
|---|---|---|---|---|
| 2014/15 | Year 1 | 7(6+1) | 9(7+2) | 16 (13+3) |
| 2013/14 | Year 2 | 5(0+5) | 9(2+7) | 14 (2+12) |
| 2012/13 | Year 3 | 3(2+1) | 12(7+5) | 15 (9+6) |
| 2011/12 | Year 4 | 1(1+0) | 5(2+3) | 06 (3+3) |
| **All** | **Total** | **16** | **35** | **51(7%)** |

## Industry Scholarships

Private organizations are invited to sponsor the scholarships for the needy students in every year. IFS R&D Ltd. sponsored 8 scholarships at Rs. 2500 per month for a period of 12 months. The Student Counsellor and the Head of the Department directly involved in selecting these students after interviewing them.

## Shorea Robusta Scholarship

A Special scholarship named "Shorea Robusta" scholarship was introduced by Alumni of the former CS Special degree programme in 2007 in respect of 4$^{th}$ year undergraduate students. Two scholarships were granted under this scheme and the value of the Scholarship was Rs. 2,500/= per month for 10 months of the Academic year. The selection was based on the academic performance and financial needs of the students.

## UCSC Student Distress and Welfare Allocation

Few years ago, UCSC academic staff monitored the requirement in order to support students who were suffering due to financial difficulties and unexpected personal problems such as sudden loss of parents, health problems etc. Hence, the academic staff decided to allocate 2% of the income of master's and external degree programmes to utilize them for the student distress and welfare activities. In 2016, following activities were carried out utilizing funds available in this allocation.

**In 2016, 24 students (3%) were offered scholarships from the Student Welfare and Distress Fund. Among them, there were 17 scholarships at Rs. 5,000/- and 7 scholarships at Rs. 3000/- for a period of 05 months**.

*Table 2.1.5 - E: Special Financial Supports*

| Utilization Category | Event | No. of students benefited in 2016 | Paid Amount (Rs.) |
|---|---|---|---|
| Allowance for students representing UCSC at International Event | PES University International Sports Fiesta 201, Bangalore, India | 03 | 15,000.00 per student |
| Death of the students' Parents | - | 01 | 15,000.00 |

## 2.1.6 UCSC STUDENT UNION

In terms of the Sub–Paras 25 and 26 of the University of Colombo School of Computing Ordinance No. 01 of 2002, the Student Union election was held for the year 2016 and following members were elected for the Student Union.

**Senior Treasurer Advisor:** Dr. MGNAS Fernando. (Senior Lecturer, UCSC)
**President:** W.A.R.R. Somaweera;
**Vice-President:** K.E. Jayathunga;
**Secretary:** L.S. Kulathunga;
**Junior Treasurer:** W.G.S. Mendis;
**Editor:** S.M.G.L.A. Senadheera;
**Committee Members:** M. Vishnusaran; M.H.A. Al Rushan; G.A.U.B.K. Wickramasinghe; H.G.D. Priyankara; T.T. Pathirage; S. Yasodharan; D.G.T.D. Doluweera; D.R.N. Perera

Many activities of students are coordinated by the Student Union although there are several student clubs and societies. There was an allocation in the annual budget for some of these activities and the students have utilized them. They have also collected funds from alumni members, industry and other sponsors and also carried out activities to generate funds. Depending on the recurrent expenditure allocation, UCSC also partially sponsors all these major activities of undergraduates using both government grants and generated income from master's and external degree programmes.

## 2.1.7 STUDENT ACTIVITIES

Student activities are carried out through the Student Union mainly to promote cultural and recreation activities.

***Table 2.1.7 - A:***

| Events | Date |
|---|---|
| Sinhala and Tamil New Year Festival | 24th April |
| Poson Bakthi Geetha | 22nd June |
| Social Service Projects (Workshop for O/L Students) | 23rd September |
| Paduru Sajje | 13th May |
| Blood Donation Camp | 22nd September |
| Cultural Events (Vaani Vizha 2016) | 28th October 2016 |
| Freshers' Welcome | 15th October |
| Students /Staff Sports Day | 01st October |
| Reminisce 2016 – Farewell of UCSC Batch of 2010/11 | 01st October 2016 |



## 2.1.8 STUDENT ACHIEVEMENTS – EXTRA CURRICULAR

Students are encouraged to participate in many extracurricular activities to enhance their knowledge, skills, attitude and mind set. At the same time, such participation provides a better external reputation for the UCSC and its students. Following list provides the details of achievements in 2016.

| No | Competition | Achievement | Members |
|---|---|---|---|
| 1. | Competition - Janashakthi Full Option Appathon Challenge | Winner<br>Champions Trophy with a cash prize of Rs. 1,000,000.00 | **Team – whileLOOP**<br>W M U P Jayasinghe (2014/CS/052)<br>S G H Liyanage (2014/CS/078)<br>S A Kodituwakku (2014/CS/066)<br>K W S Shanilka (2014/CS/137) |
| 2. | Netcom Competition Tertiary Category, SLIIT CodeFest | 2nd Runners Up<br>Silver Award with a cash prize of Rs. 50,000.00 | **Team name- Team Conf-T**<br>D J N Costa (2014/CS/013)<br>K T Baddage (2014/CS/009)<br>D L N K Liyanage (2014/CS/076)<br>R P N Deemantha (2014/CS/020) |

| | | | |
|---|---|---|---|
| 3. | SLIIT Codefest 2016<br>(Tertiary hackathon) | 2nd place | **Team Name – Void**<br>O I. Mudannayake (2015/CS/089)<br>D M S. Dissanayake (2015/CS/038)<br>A Pramodya (2015/CS/002)<br>S D Senevirathna (2015/CS/127) |
| 4. | Guru E-Learning Open Competition | Winner<br>(1st Place) | **Team #hos**<br>S D Senevirathna (2015/CS/127)<br>W N D D Sanjaya (2015/CS/124)<br>H G N C Somasiri (2015/CS/132)<br>A A L N Adikari (2015/CS/005)<br>L G H T Kumara (2015/IS/037) |

## 2.1.9 STUDENT ACHIEVEMENTS - SPORTS

UCSC students are encouraged to participate in sports activities organized by the Department of Physical Education. Following are the key activities and achievements of 2016.

**Following UCSC students were appointed as the Captain of the University of Colombo for respective sports:**

Carrom (W) - TAK Lochana, Teakwondo (M) - WAMS Weerasooriya and Karate (M) – K D P Samaraweera.

**Following UCSC students were appointed as the Vice-Captain of the University of Colombo for respective sports:**

Carrom (W) – H M S P K Chandrasiri, Carrom (M) – P Y A Gunarathna, Baseball – T S Dahanayke, Elle (M) – G A Madushanka, Table Tennis (M) – E M K De Silva

**Following have won trophies in 2016:**

M.P. Jayasekara - Inter-University Track & Field Merit Award

**Following 36 UCSC students were awarded University colours in 2016:**

B**adminton (Men);** Y. Ranawaka, R.A.S.V. Ranathunga; **Basketball (Women);** J.M.S.K. Jayawardane, **Carrom (Women);** S.N. Wickramanayake, **Chess (Men);** P.K.U.M. Jayasundara, **Chess (Women);** S.S.P. Abeywickrama, **Cricket;** U.C. Sendanayake, D.P.W. Jayasuriya, **Elle (Women);** G.P.N. Galappaththi , **Football;** H.M.S. Anurudha, N. Angathan, O.T. Edirisinghe, **Hockey (Men);** K.S.S. Ranathunga, S. Yasodharan, **Hockey (Women);** M.M.N.D. Chamindi, R.A.S.S. Rupasinghe , M.S. Ratnadiwakara , S.A.D.Y.R. Dissanayake **Karate (Men);** S.G.N.D. Madhusankhe , **Karate (Women);** K.M.K.B. Ranasinghe, G.U. Liyanage, **Rugby** ; M.H.R.N.P. Madurapperuma , M.U. Kannangara, K.G.S. Madushanka , **Swimming (Men);** D.P.W. Jayasuriya, **Table Tennis (Men);** G.A.D.C. Galgamuwa , **Taekwondo (Men);** N.P.L.R. Pathirana, G.M. Gamage, **Tennis (Men);** M.H.M. Hisan, T. Susanth, **Track & Field (Men);** G.A.U.B.K. Wickramasinghe, J. Logeesan, T.M.D.I. Thennakoon, **Volleyball (Men);** M.M.P. Thalagahapitiya

### *UCSC IEEE Student Branch*

Reid Cyber Wars 2.0 - 5/12/2016
https://www.facebook.com/1538766439671163/photos/?tab=album&album_id=1731595177054954

IEEE Day 2016 - 10/4/2016
https://www.facebook.com/1538766439671163/photos/?tab=album&album_id=1790158564531948

IEEExtreme 10.0 - 10/22/2016
https://www.facebook.com/1538766439671163/photos/?tab=album&album_id=1797104467170691

### *UCSC ISACA Student Group*

iFest 2k16 - 5/29/2016
https://www.facebook.com/1538766439671163/photos/?tab=album&album_id=1737207813160357

iHack 2.0 - 10/8/2016
https://www.facebook.com/1538766439671163/photos/?tab=album&album_id=1793208234226981

### *Exploration Club*

Seminar in Puttalam Kandethoduwawa m.v. 10/8/2016, 10/8/2016
https://www.facebook.com/733452900082031/photos/?tab=album&album_id=1169729679787682

Seminar in Ottukulama Kanishta Vidyalaya and Halambe Kanishta Vidyalaya 9/23/2016 - 9/25/2016
https://www.facebook.com/733452900082031/photos/?tab=album&album_id=1125415350885782

### *UCSC Mozilla Club*

Foxeprenuer 2016 - 4/5/2016
https://www.facebook.com/1538766439671163/photos/?tab=album&album_id=1717330505148088

Localization Sprint - 11/22/2016
https://www.facebook.com/1486981798224214/photos/?tab=album&album_id=1832921446963579

In addition Pahasara (student media club of UCSC) covered the above events with photographs and provided a platform for the students to share their thoughts through the students' blog (**http://ucsc.cmb.ac.lk/students/blog/**, **https://www.facebook.com/PahasaraUCSC/**).

## 2.1.10 GRADUATION 2016

The convocation or the graduation ceremony was held on 16th August 2016 for 236 students from 5 degree programmes in CS and IS streams. Students of the BSc in IS/BICT degree programme are analysed with respect to their A/L study stream (Tables 3a and 3b).

***Table 2.1.10 - A: Final Academic Performance of UCSC Graduates - 2016***

| Intake | First | Upper | Lower | Pass | TOTAL | Registered (Current Batch) | Registered (Repeaters) | Total registered students | Rate % |
|---|---|---|---|---|---|---|---|---|---|
| Bachelor of Computer Science | 0 | 01 | 0 | 04 | **05** | 00 | 05 | **05** | 100 |
| BSc in Computer Science - 3 Year Academic Year 2011/2012 | 0 | 0 | 12 | 88 | **100** | 109 | 00 | **109** | 91.7 |
| BSc in Computer Science - 4 Year Academic Year 2010/2011 | 23 | 14 | 02 | 00 | **39** | 40 | 00 | **40** | 97.5 |
| BSc in Information Systems Academic Year 2011/2012 | 0 | 0 | 10 | 60 | **70** | 81 | 00 | **81** | 86.4 |
| BSc in ICT | 09 | 11 | 0 | 0 | **20** | 20 | 00 | **20** | 100 |
| Bachelor of ICT Academic Year 2010/2011 | 0 | 0 | 0 | 02 | **02** | 00 | 02 | **02** | 100 |
| **TOTAL** | **32** | **26** | **24** | **154** | **236** | **250** | **07** | **257** | **91.8%** |

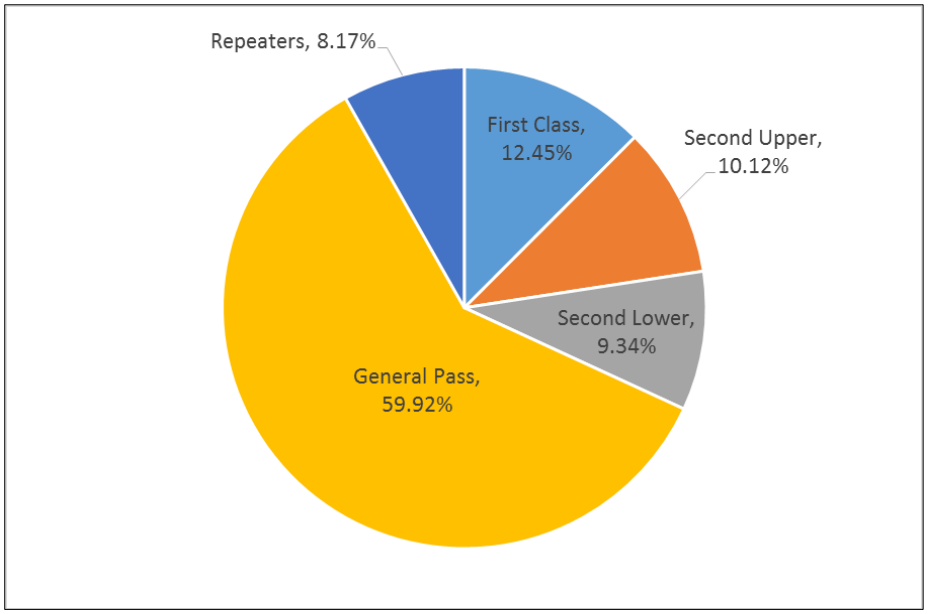



***Figure 2.1.10 - A: Overall Final Academic Performance of UCSC Graduates - 2016***

*Table 2.1.10 - B: Performance of BSc in IS/BICT Graduates with A/L study streams*

| Intake | First | Upper | Lower | Pass | TOTAL |
|---|---|---|---|---|---|
| Mathematics | 0 | 0 | 0 | 0 | **0** |
| Biology | 0 | 0 | 1 | 4 | **5** |
| Commerce | 0 | 0 | 3 | 22 | **25** |
| Arts | 0 | 0 | 6 | 34 | **40** |
| BICT | **0** | **0** | **10** | **60** | **70** |

***Table2.1.10 - C:***

| Intake | First | Upper | Lower | Pass | TOTAL |
|---|---|---|---|---|---|
| Mathematics | 5 | 8 | 0 | 0 | 13 |
| Biology | 2 | 2 | 0 | 0 | 04 |
| Commerce | 2 | 1 | 0 | 0 | 03 |
| Arts | 0 | 0 | 0 | 0 | 0 |
| BSc ICT | **9** | **11** | **0** | **0** | **20** |

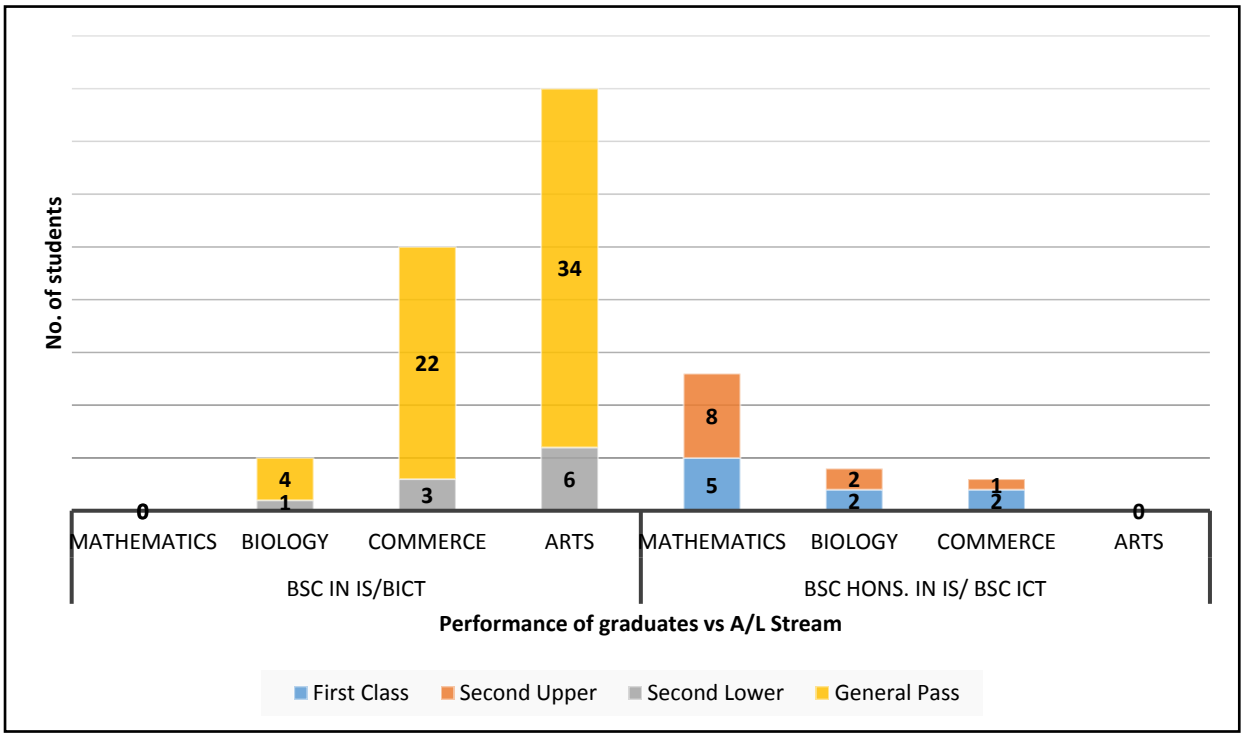



***Figure 2.1.10 - B: Performance of BSc in IS/BICT and BSc Hons. In IS /BSc ICT Graduates with A/L study streams***

## 2.1.11 UNDERGRADUATE AWARDS

Several convocation awards are declared for all degree programmes at UCSC. There is a pre-defined criteria for these awards and all selections are approved by the Senate of the University of Colombo. Following tables describe the awards given at the convocation held on 16th August 2016 at BMICH. Prof. V. K. Samaranayake Awards, which is open for all the study streams at UCSC was given to V.A. Isuru (Index No: 11020822). Following tables give details of awards in the stream of Computer Science and Information System awarded at the convocation held on August 2016.

*Table 2.1.11 - A: Convocation Awards for Computer Science Degree Programme - 2016*

| Name of the Award | Name of the Awardee |
|---|---|
| Professor Mohan Munasinghe Award for Computer Science - 2015 | Thilakaratne K.M.S. (Index No: 11000155) |
| ICTA Award for the Best Computer Science Final Year Project - 2015 | Muthutantrige S.R. (Index No: 11000392)<br>AMARASINGHE R.A.(Index No: 11001925) |
| David Peiris Group Gold Medal for the Best Performance in Industrial Placement - 2014 | Thilakaratne K.M.S. (Index No: 11000155)<br>Nalinda L.G.H.C.(Index No: 11000058) |
| Virtusa Academic Excellence Award for the Best Performance in three year degree - 2015 | Amarasinghe A.S. (Index No: 12000094) |

*Table 2.1.11 - B: Convocation Awards for Information and Communication Technology Degree Programme - 2016*

| Name of the Award | Name of the Awardee |
|---|---|
| IFS Academic Excellence Award for the Best Performance in four year degree - 2015 | Dharmadasa M.A.I.M. (Index No: 11020156) |
| David Peiris Group Gold Medal for the Best Performance in Industrial Placement - 2014 | Dharmadasa M.A.I.M. (Index No: 11020156) |
| Sampath Bank Award for the Best Final Year Project - 2015 | Jayasinghe D.V.B.C.(Index No: 11020083)<br>Dharmadasa M.A.I.M. (Index No: 11020156)<br>Isuru V.A. (Index No: 11020822) |



***Table 2.1.11 - C:***

| Name of the Award | Name of the Awardee |
|---|---|
| Zebra Technologies Academic Excellence Award for the Best Performance in three year degree - 2015 | Dias S.H. (Index No: 12020145) |

## 2.1.12 EMPLOYABILITY

It was observed that most of the students were recruited by reputed firms in the IT industry on lucrative contracts, even before they completed their 3rd year industrial placements. The employability details of graduates were collected at the time of convocation using a small questionnaire. Following table describes the details of employability of UCSC graduates with respect to each study stream.

***Table 2.1.12 - A: Employability of UCSC undergraduates - 2016***

| Programme | Number Graduated | Number Not Responded | Employed | Waiting for Jobs / Not interested | Rate of employability |
|---|---|---|---|---|---|
| BSc in Computer Science (3 Year) | 100 | 7 | 90 | 3 | 90% |
| BSc Hons. In Computer Science (4 Year) | 39 | 0 | 39 | 0 | 100% |
| BSc in Information Systems (3 Year) | 70 | 3 | 53 | 14 | 76% |
| BSc in ICT (4 Year) | 20 | 0 | 20 | 0 | 100% |
| **Total** | **229** | **10** | **202** | **17** | **88%** |

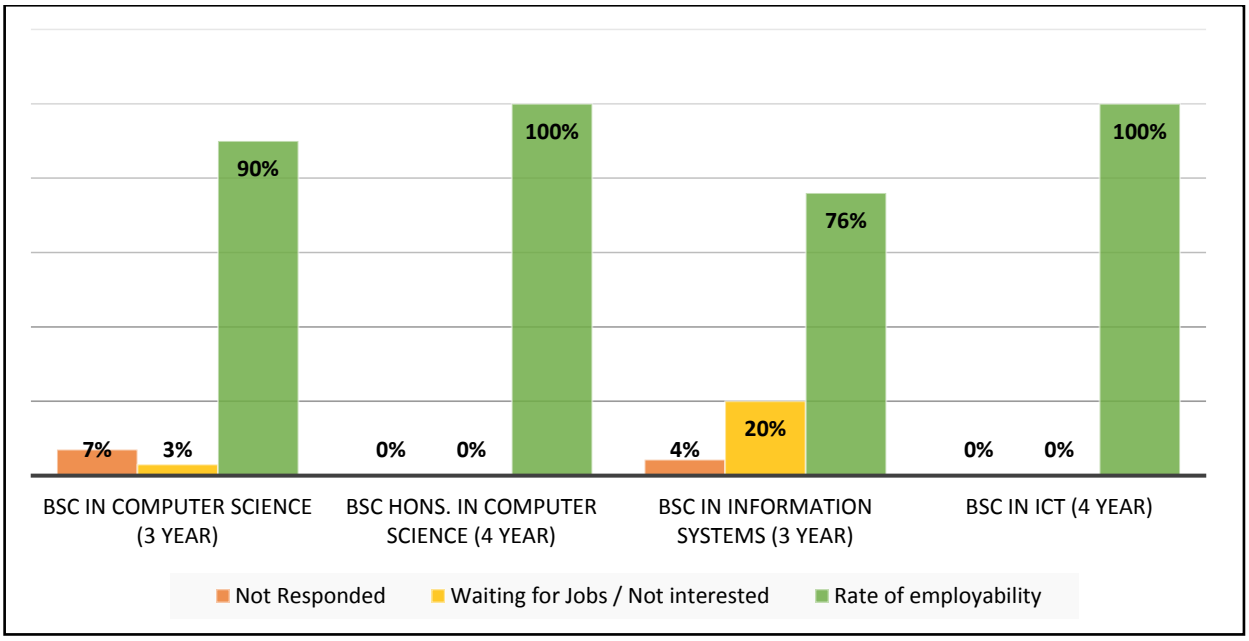



***Figure 2.1.12 - A: Employability of UCSC undergraduates - 2016***

## *2.2 POSTGRADUATE STUDIES*

### 2.2.1 MASTERS DEGREE PROGRAMME

UCSC offered five Masters Degree programmes in 2016, namely

- **Master of Computer Science**

  Those who have a Computing Degree or equivalent qualification are selected for this degree programme since the curriculum was designed considering basic courses in Computing Degree progrmmes. Intake size for the programme for the year 2016 was 83 students. The students were selected based on their first degree qualification, performance at the selection test and selection interviews.

- **Master of Information Technology**

  Those, who are interested in changing their career path to Computing or obtaining a postgraduate qualification in Computing are offered this programme. Any graduate with a working experience in computing environment is encouraged to apply for this programme. The intake size of the programme for the year 2016 was 74 and a selection test and interviews were held to select suitable candidates for the programme.

- **Master of Information Technology (e-Learning)**

  This is a specialized master's degree under the Master of Information Technology programme. Students could select this degree programme if they are interested in specializing in the field of e-Learning and ICT for education. In 2016, the programme was discontinued due to inadequate number of registration.

- **Master of Information Technology (Multimedia)**

  This is a specialized master's degree under the Master of Information Technology programme. Students could select this degree programme if they are interested in specializing in the field of multimedia. In 2016, the programme was discontinued due to inadequate number of registration.

- **Master of Science in Information Security**

  The Master of Information Security which has been designed for graduates who wish to acquire a postgraduate qualification in the area of Information Security. This programme offers mid-career opportunities for those who work in the areas of Information Technology, Information System Audit and Information Security.

All the masters programmes consist of two years and four academic semesters, and lectures except the lectures for the Information Security programme are held only on weekends. According to workload and the number of credits for the programme, they are equivalent full time programmes although the students enrolled are full time employees of private or public organizations. Since the programme starts annually, there are two batches of students at any time of the year. One batch of students is following the first year courses and the other batch is in the second year of study.

The courses commenced in February 2016 for the 2015/2016 intake but the recruitment of students was started in 2015. The academic time table for the programme was announced at the beginning of the course and blended learning culture was promoted through the virtual learning environment http://pgvle.ucsc.cmb.ac.lk for all courses in the programme. Therefore, it was possible to promote learning activities before and after f2f lectures in addition to communicate with students instantly although they were not in the UCSC premises on working days. Enrolment details for the Masters programme for 2016 are given below. The student handbook for Masters Degree programme was published in 2016 and its online version is available at the UCSC website http://www.ucsc.cmb.ac.lk/pg.

***Table 2.2.1 - A: Postgraduate Enrolment in 2016***

| Degree Programme | Intake 2015/16 | 1st Year Students | | 2nd Year Students | | Total |
|---|---|---|---|---|---|---|
| | | New | Repeaters | New | Repeaters | |
| Master of Computer Science | 83 | 83 | 34 | 79 | 21 | 217 |
| Master of Information Technology | 74 | 74 | 20 | 70 | 16 | 180 |
| MSc in Information Security | 27 | 27 | 04 | 26 | 00 | 57 |
| **Total** | **184** | **184** | **58** | **175** | **37** | **454** |

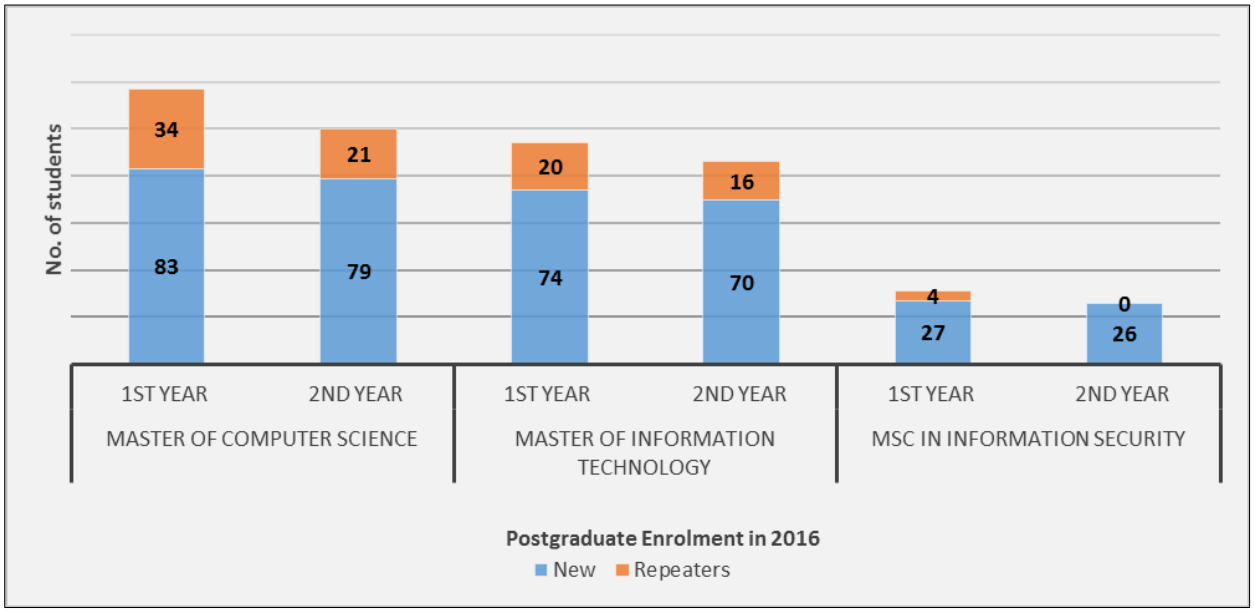



***Figure 2.2.1 A: Postgraduate Enrolment in 2016***

Student registration fees for the masters degree programme is the main source of generated income of the UCSC. Therefore, it is very important to obtain active participation and contribution from the academic staff to conduct the programme on time and deliver a quality service. Several private organizations have started similar masters programme. There is a threat to UCSC postgraduate programmes since those organizations are offering high rates of lecture fees for resource persons. Hence, the programme budget was developed to motivate the academic staff to get their contribution to the programme and UCSC activities by considering market rates for resource persons, support for the research and development, staff training and welfare and institutional development. It is important to note that the participation in postgraduate programmes is not compulsory for the academic staff according to the present work norms and regulation of the university system.

*Table 2.2.1 - B: Direct Staff Participation in Masters Programme*

| Degree Programme | Academic | | | Supervision | | Administration | Non-Academic |
|---|---|---|---|---|---|---|---|
| | UCSC | Visiting (Local) | Visiting (Foreign) | UCSC | Visiting | | |
| MCS | 33 | 04 | - | 11 | 1 | 02 (Exams/ Postgraduate) | 04 |
| MIT | | 04 | - | 16 | 1 | | |
| MSc in IS | | 04 | 03 | 05 | - | | |
| **Total** | **33** | **12** | **03** | **32** | **02** | **02** | **04** |

It is very important to mention that almost all the staff participated in conducting and managing Masters programme indirectly although they are not paid directly for the Masters degree programme. Therefore, 2% of income is allocated for the staff welfare and general training activities of the institute.

### 2.2.1.1 GRADUATION OF MASTERS PROGRAMME

Postgraduate programme for Masters Degree was held on 10th December 2016 at BMICH for the students who were registered for the programme 2012/13. Some repeat students (26%) were also graduated at this convocation. Details are given below.

*Table 2.2.1.1 - A: Analysis of Graduation Data of 2016*

| Course | Intake 2012/13 | Graduated | | | | Total | % (First Time) |
|---|---|---|---|---|---|---|---|
| | | 2012/13 | 2011/12 | 2010/11 | Previous | | |
| Master of Computer Science | 81 | 25 | 06 | 02 | 00 | 33 | 31% |
| Master of Information Technology | 100 | 55 | 03 | 03 | 00 | 61 | 55% |
| MSc in Information Security | 26 | 13 | 02 | 02 | 00 | 17 | 50% |
| PGD in Computer Science | 00 | 01 | 02 | 02 | 01 | 06 | -- |
| PGD in Information Technology | 00 | 00 | 01 | 05 | 01 | 07 | -- |
| PGD in Information Security | 00 | 00 | 01 | 02 | 00 | 03 | -- |
| **Total** | **207** | **94** | **15** | **16** | **2** | **127** | **45%** |

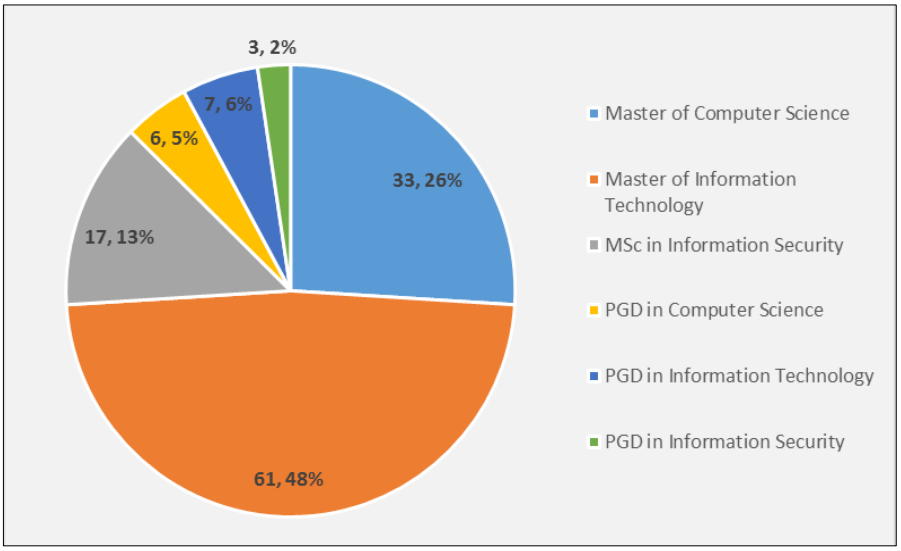



*Figure 2.2.1.1 - A: Postgraduate graduation of 2016*

At the postgraduate convocation held on 06th and 07th December 2016, several graduates received special awards based on their performances in the programme. Details are given below.

| Name of Award/Medal | Name of Recipient |
|---|---|
| Kingslake award for the best student for Master of Computer Science Degree Programme | Mr. V. L. Gunawardena<br>2013/MCS/024 (13440242) |
| JICA award for the best student for Master of Information Technology | Mrs. P. H. G. Perera<br>2013/MIT/061 (13550619) |
| MIS Award | Mr. M. R. C. S. Muthuthanthrie<br>2013/MIS/017 (13770175) |

#### 2.2.1.2 MASTERS PROGRAMME DEVELOPMENT

Considering experience and requirement of aligning Masters Degree programme with Sri Lanka Qualification Framework (SLQF) of the last few years, it was decided to revise the structure, curriculum and syllabus of all masters degree programme to be commenced in 2017. Therefore, many workshops on curriculum development, restructuring and developing the syllabus were held during 2017 in addition to conducting the Masters Degree programme.

Details of Workshops on Programme Restructuring, Curriculum and Syllabus Development, bylaws Preparation

- 12th September 2016 - A full day workshop to develop By Laws/ Regulations for 2017 Masters Intake
- 22nd December 2016 - First Workshop on Developing syllabus of Masters Degree Programme

### 2.2.2 RESEARCH DEGREES – MPHIL AND PHD PROGRAMMES

UCSC offers two research degree programmes, namely PhD and MPhil research degrees in Computing. Registrations are open throughout the year and possible candidates are encouraged to identify a potential Supervisor by matching their research interests with research areas/groups/interests of the UCSC senior academic staff. Although UCSC has a pool of 30 senior lecturers with 25 of them have doctoral degrees in Computing, the pass rate of research degrees are very poor. This situation was taken seriously and it was decided to obtain the service of visiting Professor to analyse the problems associated research degrees as well as to address some of these problems within the year 2016/2017. Professor Saman Halgamuge from Australian National University who was appointed as the visiting Professor for 2016 was invited to carry out the situational analysis and make a suitable recommendation for the situation. In July 2016, he conducted a brainstorming session to identify challenges in the supervision of research degree.

Details of registration and graduating for research degrees are given in the table below. Several research students at UCSC joined the joint-degree programme between Queensland University of Technology (QUT) and the University of Colombo (UoC). They were partially funded to visit Australia in 2016.

*Table 2.2.2 - A: Research Degree Registration and Completion*

| Research Degree | Year 1 (Registration 2016) | Year 2 (Registration 2015) | Year 3 (Registration 2014) | On Extension (Registered before 2014) | Total | No of Graduated in 2016 |
|---|---|---|---|---|---|---|
| PhD | | | | | | 00 |
| Full Time | 01 | 01 | 02 | 00 | 04 | |
| Part Time | 00 | 00 | 00 | 02 | 02 | |
| **PhD – Total** | **01** | **01** | **02** | **02** | **06** | |
| **Inactive students*** | 01 | 01 | 01 | 02 | 05 | |
| MPhil | | | | | | 01 |
| Full Time | 03 | 02 | 03 | 05 | 13 | |
| Part Time | 04 | 05 | 04 | 10 | 23 | |
| **MPhil – Total** | **07** | **07** | **07** | **15** | **36** | |
| **Inactive students *** | 07 | 05 | 03 | 11 | 26 | |
| **Total Research Degrees** | **08** | **08** | **09** | **17** | **42** | **01** |

* Inactive students are those who have not submitted progress reports and renewed their admission on or before 31st December 2016.

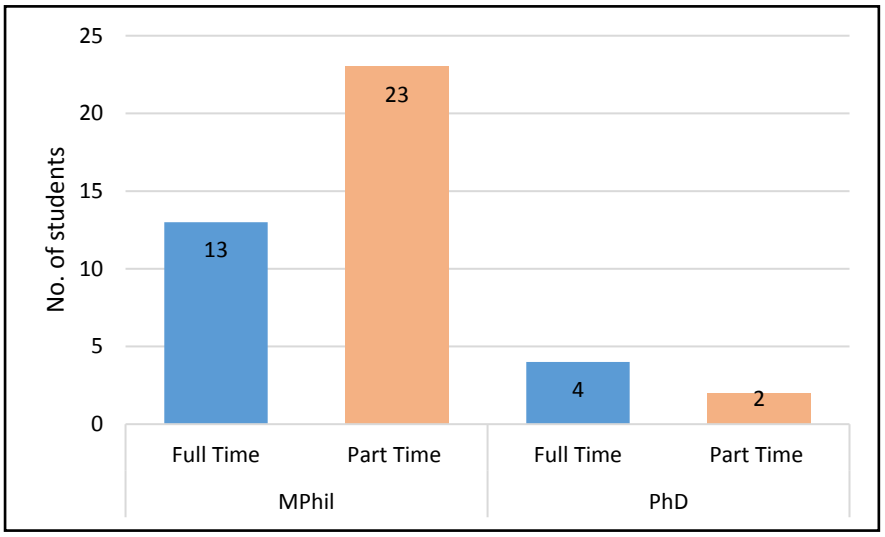



*Figure 2.2.2 – A: Student registration and renewal of registration for Research Degrees in 2016*

Postgraduate convocation for research degrees was held on 11th December 2016 at the BMICH. Only one student received the degree of MPhil for the year 2016.

## 2.3 EXTERNAL DEGREE & EXTENSION COURSES

### 2.3.1 BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL) DEGREE PROGRAMME

UCSC started its external degree programme, Bachelor of Information Technology (BIT) [www.bit.lk] in the year 2000 and 16th batch of this programme was registered to follow it during 2016. Activities of external degree were carried out at the External Degrees Centre which was located at the Dharmaphala Mawatha, Townhall, Colombo 3. Since the lease of the location came to an end in December 2015, UCSC was asked by the owner to relocate the centre at a new location. Through an open advertisement, we were able to short list a suitable location in Kirulapana, but the owner refused to sign the contract at the last minute. UCSC faced much difficulty in managing the programme and all the staff and goods were moved temporarily into few rooms of the UCSC. Through a new advertisement for a location, UCSC relocated the External Degrees Centre at No.17, Swarna Road, Colombo 6 (opposite the Havelock city) on 28th March 2016. This administration issue badly affected the management of the programme activities.

In the past, BIT programme alone has attracted 35,639 students and has produced 1,923 graduates; 3,354 higher diploma holders and 6,952 diploma holders up to the end of 2015. In 2015/16 (2016th Batch) had 2,188 new enrolments and the process for new intake commenced in late 2015 and kept open until January/February 2016 to cater the advanced level students of 2015.

Following table shows the details of student registration for the year 2016.

***Table 2.3.1 - A: BIT Student Registration - 2016***

| Course | Total Applicants | New Registration | Re-registration | Total | Total Registration 2016 |
|---|---|---|---|---|---|
| First Year Registration | 2,059 | 1,602 | 586 | 2,188 | 4,075 |
| Second Year Registration | -- | 490 | 756 | 1,246 | 2,509 |
| Third Year Registration | -- | 242 | 935 | 1,177 | 1,651 |
| **Total** | **2,059** | **2,334** | **2,277** | **4,611** | **8,235** |

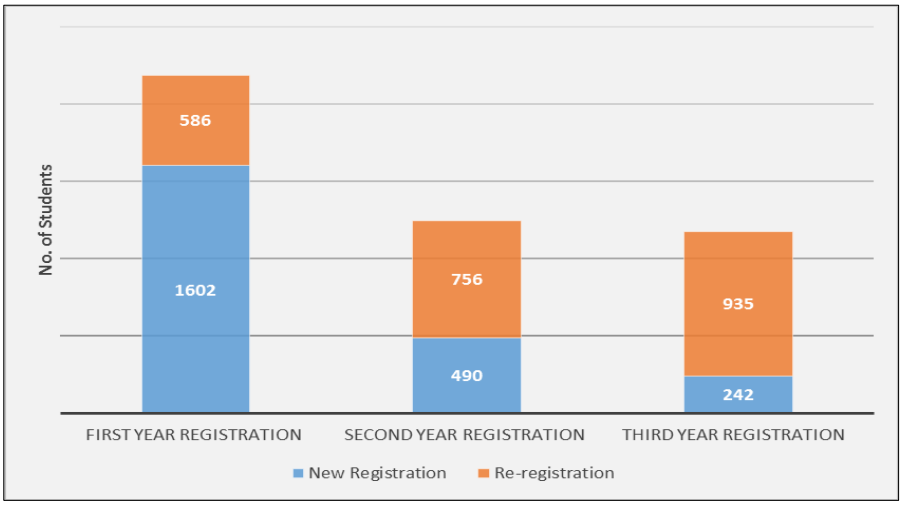



***Figure 2.3.1 - A: BIT student registration in 2016***

### 2.3.1.1 STUDENT PERFORMANCE – 2016

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

*Table 2.3.1.1 - B: External Degree Performance over last Three Years*

| External Undergraduates | KPI | 2012/13 | 2013/14 | 2014/15 | 2015/16 |
|---|---|---|---|---|---|
| DIT - New Intake | **2000** | 2034 | 2379 | 1890 | 1602 |
| DIT – Registered | 4000 | 4175 | 4535 | 4075 | 2188 |
| DIT – Diplomas | **600** | 611 | 515 | 379 | 403 |
| **[DIT/Registered]%** | **15%** | **15%** | **11%** | **9%** | **18%** |
| HDIT - Higher Diploma Intake | **600** | 714 | 721 | 690 | 490 |
| HDIT - Higher Diploma Registered | 2000 | 2391 | 2583 | 2509 | 756 |
| HDIT - Higher Diplomas | **300** | 305 | 339 | 227 | 149 |
| **[HDIT/Registered]%** | **15%** | **13%** | **13%** | **9%** | **20%** |
| BIT - Degree Intake | **300** | 312 | 347 | 346 | 242 |
| BIT - Degree Registered | 1500 | 1416 | 1537 | 1651 | 1177 |
| BIT – Graduates | **200** | 194 | 225 | 262 | 204 |
| **[BIT/Registered]%** | **13%** | **14%** | **15%** | **16%** | **17%** |

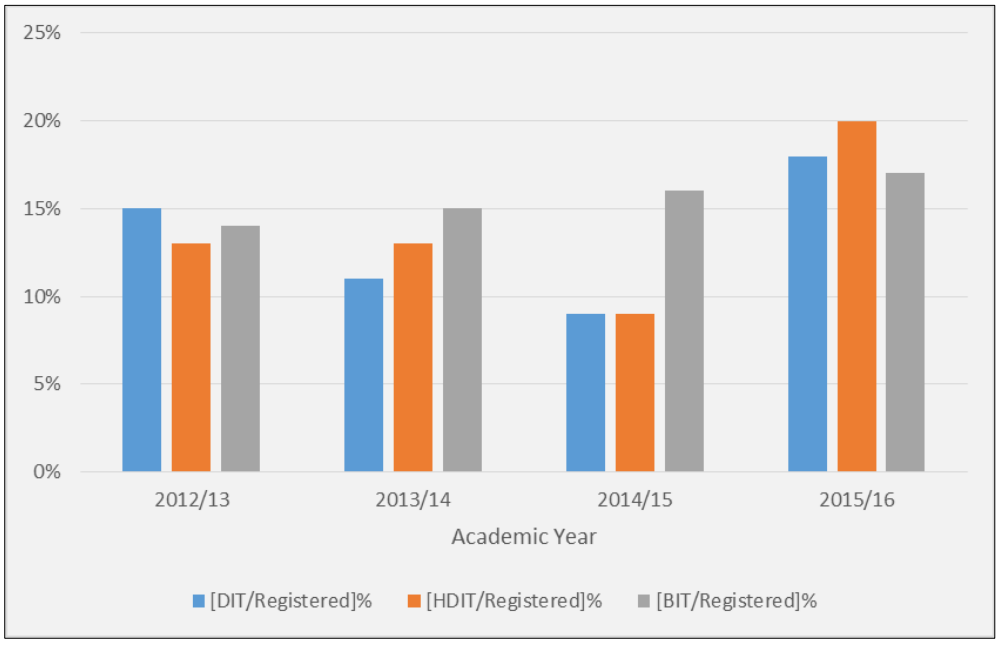



*Figure 2.3.1.1 - B: External degree registration over last 3 years*

### 2.3.1.2 BIT TEACHING INSTITUTES

BIT is conducted in the public-private-partnership mode since UCSC is not directly involved in the teaching process. Hence, a meeting with all BIT teaching institutes was held to brief the curriculum changes and obtain institute feedback on 20th May 2016. Many training institutes have offered face to face classes and learning support for the BIT candidates in 2016 too. UCSC does not accredit any of these institutions but have recognised their contribution to the success of the programme. Each year, UCSC publishes the summary of examination results of each institute so that the candidates can identify the available institutions and plan their learning mode. More than half of the candidates study on their own (self-study) with the help of the VLE and online/recommended material. In 2015/16, 31 institutions from 12 districts conducted training for five or more candidates. Among them 14 institutes were involved in all three years and details are available in the BIT website (www.bit.lk). BIT examinations were held at the centers in Colombo, Kandy, Galle and Jaffna.

### 2.3.1.3 BIT EXTERNAL DEGREE GRADUATION AND DIPLOMA AWARDS

BIT External degree graduation was held on 13th September 2016 at the BMICH for graduates of 2015 and Diploma award ceremony was held on 24th August at the New Arts Theatre of the University of Colombo for those who satisfied the relevant conditions in 2015. Detailed statistics are given in the table below. Record number of graduates, 262 were conferred the degree at this Convocation. Parents and representatives of BIT teaching institutes also participated in the event.

***Table 2.3.1.3 - A: Performance of External Degree Programme - 2015/16***

| Course | New registration | Repeaters | Total | No of Graduated |
|---|---|---|---|---|
| Diploma in Information Technology | 1602 | 586 | 2,188 | 379 |
| Higher Diploma in IT | 490 | 756 | 1,246 | 227 |
| Bachelor of Information Technology | 242 | 935 | 1,177 | 262 |
| **All** | **2,334** | **2,277** | **4,611** | **868** |

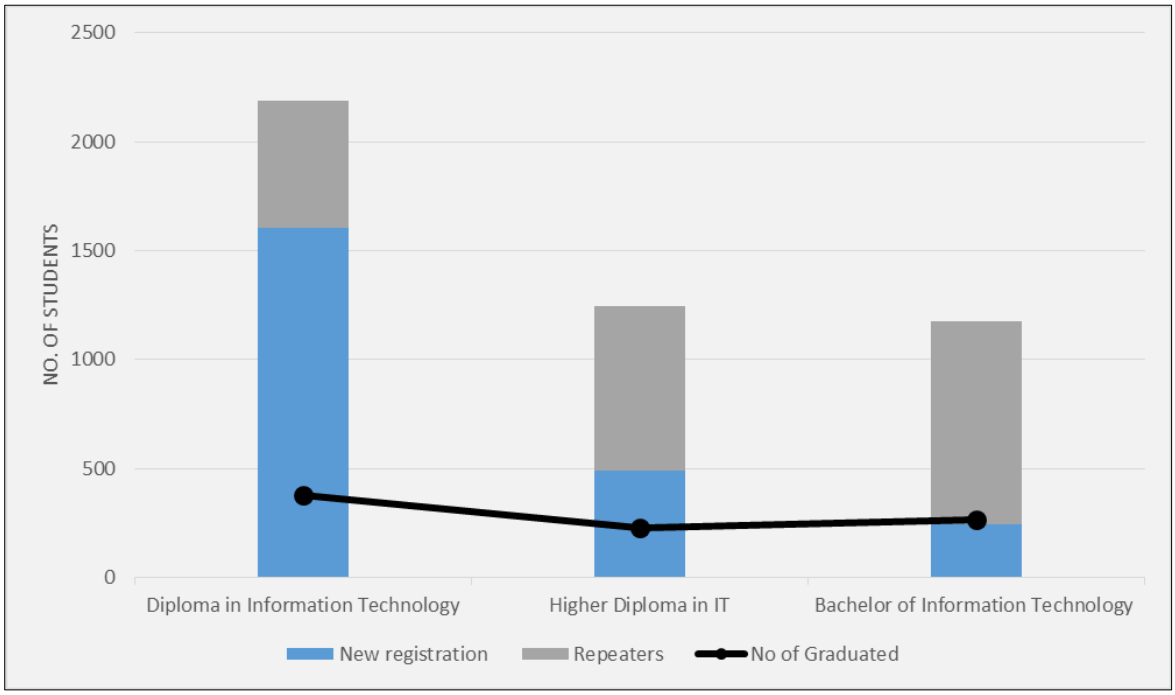



***Figure 2.3.1.3 - A: Registration and performance of External Degree programme 2016***

*Table 2.3.1.3 - B: Analysis of Results – BIT at the Convocation held in 2016*

| Intake | First | Upper | Lower | Pass | TOTAL |
|---|---|---|---|---|---|
| BIT | 01 | 11 | 15 | 235 | 262 |

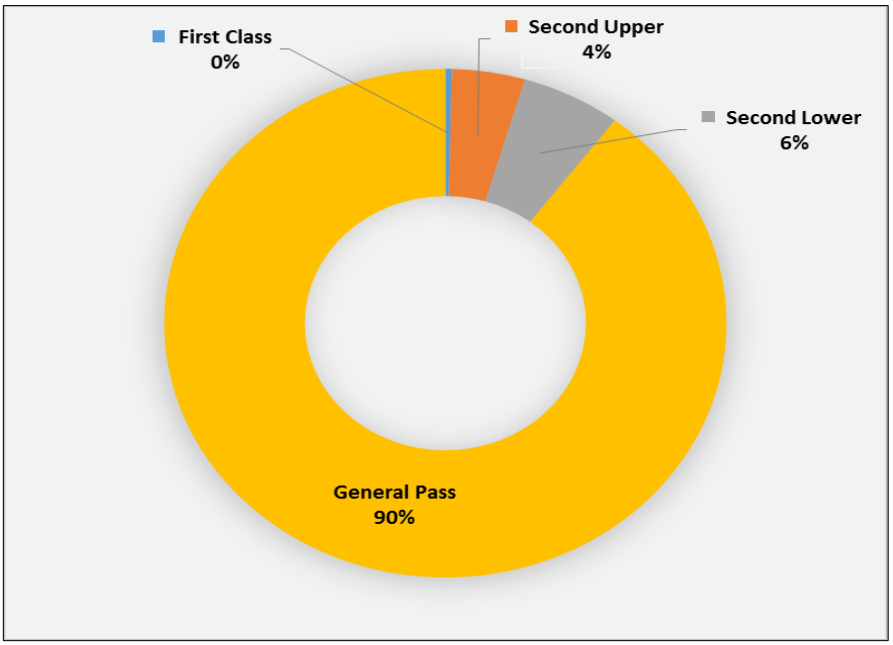



*Figure 2.3.1.3 - B: Analysis of results at BIT convocation 2016*

### 2.3.1.4 CONVOCATION AWARDS

Prof. VK Samaranayake Medal for the Best Performance of the Bachelor of Information Technology (External) Degree was awarded to Ms. S.D.B. Indeewari. The best individual project was awarded to Ms. S.D.B. Indeewari and Mr. M.D.L. Fernando  Mr. MJPU Samanthilake Memorial Award was awarded to Ms. S.D.B. Indeewari. The Best e-Learner awards for the 4 semesters were awarded to Mr. A.B. Ameerdeen (semester iv) respectively.



## 2.3.2 EXTENSION COURSES

The Computer Service Centre (CSC) was established to coordinate and manage extension courses which could be used to provide short term training in selected areas of specialization. In 2016, UCSC offered eight extension certificate courses and attracted over 300 students. Below Table shows the details of those CSC courses which are normally conducted on weekends (D – Duration in days; B – No of Batches; P – Total Participants). Certificates were offered based on the active participation in the courses.

***Table 2.3.2 - A: CSC Training Programmes - 2016***

| Course | Duration | Batch | Participants |
|---|---|---|---|
| Java Application Development Using JavaSE | 8 | 3 | 89 |
| Advanced Java Application Development using JavaEE | 8 | 1 | 21 |
| Linux Systems & Network Administration | 5 | 2 | 50 |
| Training course for South Asia Co-operative Environment Programme (SACEP) | 6 | 1 | 17 |
| Advanced Multimedia Web Design & Development Techniques | 8 | 1 | 21 |
| Programming Using Python | 4 | 1 | 15 |
| Software Quality Assurance Using Test Automation Frameworks | 5 | 2 | 50 |
| Computing for Career Development | 12 | 2 | 71 |
| **Total** | | **13** | **334** |



## 2.3.3 ONLINE EXTENSION PROGRAMMES

e-Learning Centre of UCSC was established to promote online learning for existing programmes as well as to start new online programmes based on the national requirements. The Foundation of Information Technology (FIT), http://fit.bit.lk was established as an online foundation programme for ICT and also as an alternative certification path to be registered for the BIT degree programme if a student does not have adequate AL marks. Following table provides the details of FIT programme in 2016.

*Table 2.3.3 - A: Statistics of Foundation of Information Technology Programme*

| Programme | New Registration | Repeat Registration | Applied for e-Testing | Passed e-Testing | Passed Practical Tests |
|---|---|---|---|---|---|
| FIT | 597 | 37 | 628 | 144 | 0 (not conducting exam ) |
| e-Selection Test | | | 11 | 8 | |
| BIT Practical Test | | | 3093 | | 1896 |

## 2.4 FOREIGN STUDENTS

UCSC believes as a centre of excellence in the region, it is important to provide opportunities for foreign students to follow programmes at the UCSC. Although foreign student category to enrol students (2%) had been there for a while, there was no significant demand from such students. Few years ago, some expatriates students who have done their A/L elsewhere but with local connections had applied. In 2011, the first student under the foreign student category enrolled in the CS degree programme. In 2013 we had the first two foreign students from Bhutan and Nigeria for the Master of Information Technology programme and subsequently from Pakistan for Master of Science in Information Security. Unfortunately, UCSC did not have any foreign student in 2016.

## 2.5 NEW COURSES STARTED

It was decided to revise all programmes considering the requirements of Sri Lanka Qualification Frameworks (SLQF). In the Masters Programme, a significant review was carried out revising all courses in the programmes. The graduate profiles for the undergraduate degree programmes were developed as a part of quality assurance process. 4$^{th}$ year courses of new software engineering degree were carried out in 2016.

Several new certificate courses were started by the CSC to meet the requirements of the industry.

***Table 2.5 - A:***

| Course/Programme | Certificate | Degree | Postgraduate Diploma | Master | MPhil | PhD |
|---|---|---|---|---|---|---|
| Software Engineering (Final Year courses) | - | X | - | - | - | - |
| Training course for South Asia Co-operative Environment Programme (SACEP) | X | - | - | - | - | - |
| Programming Using Python | X | - | - | - | - | - |
| Software Quality Assurance Using Test Automation Frameworks | X | - | - | - | - | - |
| **Total** | **3** | **1** | **-** | **-** | **-** | **-** |

# 3. RESEARCH

## *3.1 RESEARCH, INNOVATION AND PUBLICATIONS*

Research culture is the most important and distinguished area to showcase the achievements of UCSC. In 2016, several activities were carried out to enhance the research programmes at the UCSC. Some of these research activities are linked with research degree programmes and others are related to external organizations which have directly funded research projects at UCSC. The importance of collaborative research was promoted among the academic staff to expand the research activities by allowing them to form research groups at UCSC. Since external funding varies due to competition, internal research fund was established to sponsor research activities. A significant percentage of masters and external degree programme is allocated to establish the research fund. At the beginning of 2016, research fund policy document was updated based on the previous year (2015) experience to increase the utilization. At the same time, UGC also allocated 5 million from its capital grant to fund research projects and research related activities at UCSC. More details are explained later in this section.

### 3.1.1 UNDERGRADUATE LEVEL RESEARCH PROJECTS

All students of honours degree programme are supposed to carry out a project with research component in their final year. The duration of the project is one year and it is usually supervised by one or more senior academic staff members of UCSC. In the Computer Science degree programme, final year project is an individual project but it was a group project in other two degree programmes (Information System and Software Engineering). These projects are evaluated independently considering three milestones, namely proposal defence, interim evaluation, and final evaluation, all of which contain a presentation and viva by the staff members who were not involved in the supervision of the project. There are three academic Coordinators with respect to degree programmes and there are guidelines to manage the process.

| Degree Programme | Project Coordinator | Number of Students | No. of Projects | No. of Successful Projects | Number of Supervisors | Number of Examiners |
|---|---|---|---|---|---|---|
| BSc Honours in Computer Science | Dr. H E M H B Ekanayake | 19 | 19 | 18 | 14 | 23 |
| BSc Honours in Information Systems | Dr. T A Weerasinghe | 20 | 7 | 7 | 11 | 14 |
| BSc Honours in Software Engineering | Dr. M I E Wickramasinghe | 21 | 7 | 7 | 9 | 14 |

#### 3.1.1.1 RESEARCH SYMPOSIUM – 2016

Based on the success of these projects, at the beginning of the year an undergraduate research symposium was held to showcase the outcome to outsiders as well as junior students. Projects completed in the academic year 2015 were presented at the research symposium of 2016 held on February 2016 at the auditorium of Faculty of Graduate Studies (FGS). A book of abstracts based on selected projects was published and the best project

with respect to the degree programme was selected by an independent panel consisted of external members. Project Coordinators and final year students organized this event.



## 3.1.2 MASTERS LEVEL PROJECTS

In all Masters programme, students are supposed to carry out an individual project as a primary requirement to complete the degree programme. It is a two semester (one calendar year) course and there is a supervisor who is usually a senior academic staff member of the UCSC. Project Coordinators are appointed at the beginning of the academic year to manage this programme. In MCS programme, some projects are research type and others are implementation type. In all other programmes, projects are implementation types but some projects also have research component. Details of Masters Projects in 2016 are given below.

***Table 3.1.2 - A: Evaluation of Masters Level Projects***

| Degree Programme | Academic Year | Registered Students (First Time + Repeaters) | Completed Successfully | Pass Rate |
|---|---|---|---|---|
| MCS | 2014/2015 | 81 | 33 | 40.74% |
| MIT | | 64 | 47 | 73.43% |
| MIS | | 27 | 17 | 62.9% |
| MIT (e-Learning) | | 18 | 9 | 50% |
| MIT (Multimedia) | | 18 | 6 | 33.33% |

## 3.1.3 PROJECTS OF RESEARCH DEGREES

In the MPhil and PhD programme, research project is the main component and students are supposed to defence them to an independent examination panel which consists of local and foreign examiners depending

on the degree programme. In 2016, several evaluations for research degree projects were held and details are presented below.

***Table 3.1.3 - A:***

| Degree Programme | Number of Applicants | Registered | Completed Proposal Defence Successfully |
|---|---|---|---|
| MPhil | 11 | 07 | 04 |
| PhD | 06 | 02 (Upgraded from MPhil) | 02 |
| **Total** | **17** | **09** | **06** |

## 3.1.4 FUNDED RESEARCH PROJECTS

### 3.1.4.1 RESEARCH PROJECTS FUNDED BY UGC

In 2016, UGC allocated 5 million to UCSC under its capital grant to promote research activities at UCSC considering undergraduate research activities. All staff members were invited to submit proposals based on their planned research activities during 2016. 10 proposals were selected to finance them. Following table shows those projects, their utilization and outcome with respect to publication.

***Table 3.1.4.1 - A: Allocation, Utilization and Outcome of funded Research Projects***

| Research Project/Activity | Principal Investigator/ Research Group | Utilization | Number of Publications (conferences or Journals) |
|---|---|---|---|
| Comprehensive study of Oncogenic Signatures | Dr. A R Weerasinghe | Rs 35,000.00 | - |
| | Dr. A.M. Premachandra | Rs 210,000.00 | |
| Drone to Detect Difficult to access Dengue breeding sites (D4) | Dr. T N K Zoysa | Rs 299,691.49 | - |
| High Performance Computing | Dr. D N Ranasinghe | Rs 40,000.00 | - |
| SIYARA- 2 Harbour Vessel Traffic Management System (New Dimensions in Port Traffic Management) | Prof. N.D Kodikara | Rs 595,000.00 | |
| Graphical and Haptic Simulation of Gallbladder for Laparoscopic Cholecystectomy Training | Mr. G.K.A Dias | Rs 611,935.49 | 01 |
| Music Therapy for Differently Abled Children | Dr. Shiromi Arunathileka | Rs. 497,593.00 | 01 |
| Digital Library Service for Local Universities | Prof. K.P. Hewagamage | | - |
| A Longitudinal Population Based Investigation to Improve the Student's Performances in Theoretical Computer Science Courses of the Degree Program in Computer Science at the | Dr. T. Sitharan | - | - |

| | | | |
|---|---|---|---|
| University of Colombo School of Computing (UCSC) | | | |
| Coevolution of Dengue Virus and host | Ms. C.R Wijesinghe | Rs 245,000.00 | - |

Permanent academic staff of UCSC comprising both senior and junior staff, were supported to attend both local and foreign conferences to present their research papers. Details are given below.

***Table 3.1.4.1 - B: Participation of Conferences/Symposium and Workshops***

| Staff Level and Type of Conference | Participated Only | Published/Presented Only | Total |
|---|---|---|---|
| Senior Academics – Conferences held in Sri Lanka | 02 | 27 | 29 |
| Senior Academics – Conferences held outside Sri Lanka | 06 | 15 | 21 |
| Junior Academics – Conferences held in Sri Lanka | 00 | 01 | 01 |
| Junior Academics – Conferences held outside Sri Lanka | 02 | 04 | 06 |
| **Total** | **10** | **47** | **57** |

### 3.1.4.2 RESEARCH PROJECTS FUNDED BY EXTERNAL PARTIES

UCSC staff directly submitted proposals to local and foreign authorities to obtain funds for research and development activities of the UCSC. Following table shows those projects initiated or carried out in the year 2016 together with their outcome.

***Table 3.1.4.2 - A:***

| Project Name | Principal Investigator / Research Group | Donor Agency or Sponsoring Organization | Type of Grant (Local or Foreign) | Granted Amount | Outcome (Progress Report/ Publications ) |
|---|---|---|---|---|---|
| Development of Field Artillery Simulator System Project | Prof. N.D. Kodikara | FASS-Centre for Research and Development of Ministry of Defence | Local | Rs. 2,625,000.00 | |
| An Adaptive Sensor Actuator System for Elephant tracking | Dr. Kasun De Zoysa | Asset-Uppsala University research collaboration | Foreign | SEK 415,000 | 01 Presented at the RealWSN 2015, Korea |
| Automated Content Based Auto Monitoring System -NCAS/D/IM/2014 | Dr. Lakshman Jayaratne | NCAS-National centre for Advanced Studies in Humanities & Social Sciences | Local | Rs. 800,000.00 | |
| Enhance English language learning through m-learning | Prof. K.P. Hewagamage | NSF D/02-National Science Foundation | Local | Rs. 2,510,000.00 | 02 (at the |

| | | | | | |
|---|---|---|---|---|---|
| in different learning communities - NSF (TG/2013/Tech-D/02) | | | | | ICTer 2015 and Australasian Conference on Information Systems 2015) |
| Language Technology Research Laboratory (Sinhala Encyclopaedia Project & TTS & ASR Project) | Dr. A.R. Weerasinghe | LTRL | Local | Rs. 2,378,080.00 | |
| The Development of a Training Simulator for K-8 Aircraft | Mr. G.K.A. Dias | K-Sim-Ministry of Defense | Local | Rs. 1,333,400.00 | |
| Interaction design for tablet based edutainment systems for primary mathematical education - UGC/DRIC/QUT2015/CMB/02 | Mr. H.K.T.C. Halloluwa | QUT Scholarships 2015- University Grants Commission | Foreign | Rs. 1,863,000.00 | |
| Design and Development of Prototype of the Electronic Logbook and Electronic Data Verification Module for Fishery Management Support System | Prof. N.D. Kodikara | DFAR-Department of Fisheries and Aquatic Resources | Local | Rs. 2,960,000.00 | |
| Exploring the student Interaction through 3- D virtual worlds - UGC/VC/DRIC/PG 2015(III) / UCSC/ 01 | Ms. R.M.P.N. Somartne | Higher Studies 2015- University Grants Commission | Local | Rs. 1,100,000.00 | |
| | Prof. G.N. Wikramanayake | Govi Nana | Local | Rs. 625,000.00 | |

| | | | | | |
|---|---|---|---|---|---|
| Development of a Training Simulator for Air Traffic Control | Prof. N.D. Kodikara | ATC -Centre for Research and Development of Ministry of Defense | Local | Rs. 720,900.00 | |
| Electronic National Identity Card Project | Dr. Lakshman Jayaratne | eNIC-Department of Registration of Persons (DRP) | Local | Rs. 1,125,000.00 | |
| Design and Development of Prototype of a Web Based Video Streaming System | Dr. C.I. Kappitiyagama | WBVSS - thinkCube Systems (Pvt) Ltd | Local | Rs. 245,952.00 | |
| Entity Resolution in Multimedia Databases | Mr. Saminda Chandika Premaratne , Dr. K L Jayarathne | NSF-National Science Foundation | Local | Rs. 570,000.00 | |

#### 3.1.4.3 UCSC RESEARCH FUND – PROJECTS AND UTILIZATION

The research fund of the UCSC is managed considering two types of allocation known as "Individual Quota" (IQ) and "Open Quota" (OQ). At the beginning of the year, all permanent academic staff was given a fixed allocation to promote publishing in International conferences, journals and book chapters. At the same time, they were supported to attend both local and foreign conferences within the allocated limit of each staff member.

Staff members are also supported to utilize the fund to cover their research expenses such as acquiring goods and services directly related to their research work, subscription of professional organizations, a fixed quota of internet charges, and partial support for externally funded projects. Following table shows the utilization of Research Fund during 2016.

***Table 3.1.4.3 - A:***

| Staff Members | Utilization | Average Utilization |
|---|---|---|
| Senior Staff (24) | 3,516,617.13 | 146,525.71 |
| Junior Staff (14) | 562,402.39 | 40,171.59 |
| Total Staff – (38) | 4,079,019.52 | 107,342.62 |

It is important to note that the UCSC Research Fund has been built using generated income and donation of external parties during the last 15 years. Due to undergraduate workload, many staff members failed to fully utilize their allocation.

## 3.1.5 RESEARCH GROUPS AT UCSC

In order to promote the collaborative research culture, UCSC staff is invited to carry out research and development activities as small teams comprising one or more senior staff member, junior staff members, full or part time research assistants and students. Some groups also invite external parties to collaborate to carry out activities of research groups by funding fully or partially as well as contributing to their expertise in the respective area. Following table presents the details of active research groups in 2016.

***Table 3.1.5 - A: Research Groups in 2016***

| Group Name | Goal of Research Group | Members of Research Group | URL of Research Group |
|---|---|---|---|
| Social Life Networks (SLN) | Providing real-time information to support the activities related to livelihood delivered using mobile phone applications targeted to meet the needs of people in developing countries | Prof. Gihan Wikramanayake,<br>Dr. Jeevani Goonatillake,<br>Ms. Lasanthi De Silva,<br>Ms. Anusha Walisadeera,<br>Prof. Athula Ginige,<br>University of Western Sydney,Â Australia<br>Prof. Ramesh Jain, University of California, Irvine, USA<br>Prof. Genny Tortora, University of Salerno, Italy<br>Ms. Tamara Ginige, Australian Catholic University North Sydney, Australia | http://ucsc.cmb.ac.lk/social-life-networks/ |
| Networking And Systems Research Group | Designing network protocols to analysis of social networks | Dr. Ajantha S. Atukorale,<br>Dr. Chamath Keppitiyagama,<br>Wathsala W. Vithanage,<br>Deependra Ariyadeva, | http://ucsc.cmb.ac.lk/networking-and-systems-research-group/ |
| Wireless Ad Hoc Sensor Networks | Setup a R&D centre for WASN<br>Conduct applied research specially in the environmental monitoring and health care<br>Develop WASN applications to solve real-life problems in Sri Lanka<br>Enhance the WASN education in Sri Lanka | Dr. T. N. K. De Zoysa,<br>Dr. C. I. Keppitiyagama,<br>Dr. Leif Axelsson, Product Area Manager Transportation Security, Volvo Technology<br>Dr. Martin G. H. Gustavsson, Senior Advisor, Ericsson AB<br>Mr. Henrik Riomar, Ericsson AB<br>Mr. N. M. Laxaman<br>Mr. G P N Boteju<br>Mr. P. K. M. Thilakarathna | http://ucsc.cmb.ac.lk/research-groups/wireless-ad-hoc-sensor-networks/ |
| Sustainable Computing Research Group (SCoRe) | To generate computing solutions through identifying low cost methodologies and strategies that lead to sustainability. | Dr. Kasun de Zoysa<br>Dr. Chamath Keppitiyagama<br>Manjusri Wickramasinghe<br>Kasun Gunawardana<br>Chathura Suduwella<br>Charith Elvitigala<br>Asanka Sayakkara<br>Namal Jayasuriya<br>Primal Wijesekara | http://ucsc.cmb.ac.lk/research-groups/sustainable-computing-research/ |
| The modeling and simulation group | To work on a Ship Handling Simulator (ViduSayura) for the Sri Lankan Navy | Prof. N. D. Kodikara<br>Rear Admiral Ranjith Senadheera (Sri Lanka Navy)<br>Mr. R.P. Abeyakone (National Institute of | http://ucsc.cmb.ac.lk/research-groups/modelling-simulation-group/ |

| | | | |
|---|---|---|---|
| | | Fisheries and Nautical Engineering)<br>Prof. Rexy Rosa<br>Mr. Kapila Dias<br>Dr. Chamath Keppitiyagama<br>Mr. Damitha Sandaruwan<br>Mr. Randika Ariyarathna<br>Mr. Poshitha Ravinath<br>Mr.Chandana Perera<br>Mr. Kanchana Manamperi<br>Mr. Pubudu Ranatunga<br>Mr. Chatheka Uduwarage<br>Mr. Chaturra Gunasekara | |
| Language Technology Research Laboratory (LTRL) | To address the growing need of local language computing in Sri Lanka by doing Localization and Language Processing research and development | Dr. A.R. Weerasinghe<br>Mr. Viraj Welgama<br>Mr. Chamila Liyanage<br>Mr. Namal Udalamatta<br>Mr. Randil Pushpananda<br>Mrs. Thilini Nadungodage<br>Mrs. Dilhani Samaranayake<br>Ms. Arunja Sivapathasuntharam<br>Miss. Amathri Perera<br>Miss. Lakshika Nanayakkara<br>Miss. Kavindi Gimhanika Wedasinghe | http://ucsc.cmb.ac.lk/research-groups/language-technology-research-laboratory/ |
| Information Systems Security Research Group | IT security and information assurance research areas | Dr. T. N. K. De Zoysa –<br>Mr. Rasika Dayaratne<br>Mr. H E M H B Ekanayake, | http://ucsc.cmb.ac.lk/research-groups/information-systems-security-group/ |
| The Geographic Information System (GIS) | On contemporary geospatial technologies with the aim of enhancing existing GIS solutions and developing new geospatial solutions | Dr. Damitha Karunarathne | http://ucsc.cmb.ac.lk/research-groups/geographic-information-system-gis-research-group/ |
| Game based learning | To provide a virtual learning environment to the students | Prof. K. P. Hewagamage<br>Dr. Yamaya Ekanayake<br>Mr. Isuru Dharmadasa<br>Mr. Upul Anuradha<br>Ms. Fazeena Jamaldeen<br>Ms. Udeni Jayasinghe | http://ucsc.cmb.ac.lk/research-groups/game-based-learning-group/ |
| E-Learning Research | To consider how ICT infrastructure and facilities can be enhanced and integrated to provide e-Enabled | Prof. K. P. Hewagamage<br>Dr. Damitha Karunayake<br>Prof. G. N. Wikramanayake<br>Dr. Hakim Usoof<br>Dr. Thushani Weerasinghe<br>Dr. Enosha Hettiarachchi | http://ucsc.cmb.ac.lk/research-groups/e-learning-research-group/ |

| | | | |
|---|---|---|---|
| | learning environment | Ms. Nishakumari Kariyawasam<br>Mr. Geeth Hettiarachchi<br>Mr. Fauzaan Abdurrahman | |
| E-Health Group | | Dr. Shiromi Arunathilaka | http://ucsc.cmb.ac.lk/research-groups/e-health-group/ |
| Distributed And Parallel Computing Group | Programming models for multicore architectures | Dr. D. N. Ranasinghe<br>Mr. K. P. M. K. Silva | http://ucsc.cmb.ac.lk/research-groups/distributed-and-parallel-computing-group/ |
| Distributed Computing | The development of novel middleware architectures and parallel algorithms based on shared persistent space and the emergent behaviour of large scale distributed systems | Dr. D. N. Ranasinghe<br>Mr. K. P. M. K. Silva,<br>Mr. W. R. M. U. K. Wickramasighe<br>K. Ganeshamoorthy | http://ucsc.cmb.ac.lk/research-groups/distributed-computing-group/ |
| The Bioinformatics and Computational Biology (BCB) | Involves conducting quantitative studies, such as pattern recognition and network analysis, to discover biological knowledge; and developing computational techniques, algorithms, tools and statistical models to analyze various biological data and make predictions. | Dr. Ruvan Weerasinghe,<br>Ms. Rupika Wijesinghe,<br>Dr. Mindika Premachandra,<br>Prof. Mahesan Niranjan, University of Southampton, UK<br>Dr. Vinod N. Rajapakshe, National Institute of Health, USA<br>Dr. Yawwani Poornima, University of Southampton, UK<br>Mr. Luke Nitish, University of Alberta, Canada<br>Ms. Warunika Ranaweera, Simon Fraser University, canada<br>Mr. Shazan Jabbar, University of Alberta, Canada<br>Mr. Bhagya Senadeera, | http://ucsc.cmb.ac.lk/research-groups/bioinformatics-and-computational-biology-bcb-research-group/ |

## 3.1.6 RESEARCH PUBLICATIONS AND AWARDS

Following table shows the summary of research publications in 2016 and details of all the publications are given at the end of this section.

***Table 3.1.6 - A: Publication Summary - 2016***

| Type of publication | Held/Published in Sri Lanka | Held/Published outside Sri Lanka | Total |
|---|---|---|---|
| Conferences | 21 | 23 | 44 |

| | | | |
|---|---|---|---|
| Journals | 16 | 2 | 18 |
| Book Chapters | 0 | 2 | 2 |
| **Total** | **37** | **27** | **64** |

Academic staff plays the role of facilitating publishing research articles by guiding students and research assistants. They hardly find enough time to be first author due to teaching and administrative workloads. Following table shows the profile of publications with respect to each staff member during 2016Table 3.6.B:

***Table 3.1.6 - B: Detail Analysis of Publications - 2016***

| Name of Staff Member | First Author (Conferences) | Co-author (Conferences) | First Author (Journals) | Co-author (Journals) | Total |
|---|---|---|---|---|---|
| Prof. K P Hewagamage | | 4 | | 1 | 5 |
| Prof. G N Wickramanayake | | 7 | | 2 | 9 |
| Prof. N D Kodikara | | 6 | | 3 | 9 |
| Dr. A R Weerasinghe | | 9 | | | 9 |
| Dr. A S Atukorale | | 3 | | | 3 |
| Mr. Gihan Senaviratne | | 0 | | | 0 |
| Mr. D K A Dias | | 3 | | 4 | 7 |
| Mr. S T Nanadasara | | | | 1 | 1 |
| Dr. D N Ranasinghe | | 2 | | | 2 |
| Dr. G D S P Wimalaratne | | 1 | | 3 | 4 |
| Dr. T Sritharan | | 1 | | | |
| Dr. D D Karunaratne | | | | 1 | 1 |
| Dr. M D J S Goonatilake | 1 | 4 | 0 | | 5 |
| Dr. K L Jayaratne | | 4 | | 4 | 8 |
| Dr. S M K D Arunathilake | | 1 | | | 1 |
| Dr. Chamath Kaeppetiyagama | | 4 | | 1 | 5 |
| Dr. Y Ekanayake | | 2 | | | 2 |
| Dr. H A Caldera | | 1 | | | 1 |
| Dr. M G N A S Fernando | | 1 | | 1 | 2 |
| Dr. T M H A Usoof | | 3 | | | 3 |
| Mrs. C R Wijesinghe | | 2 | | | 2 |
| Dr.H E M H B Ekanayake | | 1 | | | 1 |
| Mr. Viraj Welgama | | 1 | | | 1 |
| Mr. S S P Matharaarachchi | | | 2 | | 2 |
| Mr.R S Madanayake | | | | 2 | 2 |
| Mr. D D A C Jayalath | | | 2 | | 2 |
| Dr. Damitha Sadaruwan | | 4 | | 1 | 5 |
| Dr. T A Weerasinghe | | 1 | | | 1 |
| Mr. G P N Boteju | 1 | | | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Ms. L N C de Silva | 1 | 2 | | | 3 |
| Mr. H Perera | | 1 | | | 1 |
| Mr. Upul Anuradha | | 1 | | | 1 |
| Mr. Yohani S Ranasinghe | 1 | | | | 1 |

### 3.1.6.1 AWARDS FOR RESEARCH IN 2016

UCSC continued to encourage students and staff submitting their research and development work for external evaluation to obtain the national and international recognition. In 2016, two awards are received for research work from two different organizations. Details are given below.

***Table 3.1.6.1 - A: Awards for Research and Development Projects - 2016***

| Name of the awards | Awarding Agency | Publication or Project | Team members |
|---|---|---|---|
| e-Swarbhimani 2016 | ICTA (Government of Sri Lanka) | Mobile Learning Project | Prof. K. P. Hewagamage<br>Dr. Yamaya Ekanayake<br>Mr. Upul Anuradha<br>Mrs. Fazeena |
| NSF Technology Award of Excellence | NSF | COPY Sayura : The three dimensional coastal surveillance system | Prof. N.D.Kodikara<br>Prof. S.R.D. Rosa<br>Dr. Chamath Keppetiyagama<br>Dr. K.D. Sandaruwan<br>Rear Admiral K.R. Senadeera (Rtd). |



## 3.1.7 PROFILE OF RESEARCH AREAS IN THE UCSC

Research areas are identified with respect to sub-domains of computing. By analysing research projects, publications, and award received, following table shows the active research areas in 2016.

***Table 3.1.7 - A: Sub-domain Analysis of Research Profile***

| Research Area | Staff Members | RAs and Students | No. of Conference Publications | No. of Journal Publications |
|---|---|---|---|---|
| Artificial Intelligence | 0 | 2 | 0 | 0 |
| Assistive Technology | 1 | 1 | 0 | 1 |
| Computer Graphics | 9 | 1 | 2 | 0 |
| Computer Science | 0 | 5 | 0 | 0 |
| Computer Vision | 0 | 1 | 0 | 0 |
| Data Mining | 1 | 0 | 1 | 0 |
| Data Semantics | 0 | 1 | 0 | 0 |
| Digital Forensic | 0 | 0 | 0 | 0 |
| e-Learning | 3 | 7 | 1 | 1 |
| Game-based Learning | 2 | 1 | 1 | 0 |
| Geographical IS | 0 | 0 | 0 | 0 |
| Green IT | 0 | 0 | 0 | 0 |
| Heuristics Optimization | 0 | 0 | 0 | 0 |
| High Performance | 0 | 1 | 0 | 0 |
| Image Processing | 2 | 3 | 2 | 0 |
| Information Systems | 0 | 1 | 0 | 0 |
| Knowledge Engineering | 0 | 0 | 0 | 0 |
| Machine Learning | 1 | 1 | 1 | 0 |
| Mobile Learning | 4 | 1 | 1 | 0 |
| Multimedia | 0 | 2 | 0 | 0 |
| Natural Language Processing | 4 | 2 | 3 | 0 |
| Neural Networks | 0 | 2 | 0 | 0 |
| Sensor Networks | 1 | 0 | 1 | 0 |
| Social Science and IT | 0 | 1 | 0 | 0 |
| Software Engineering | 7 | 3 | 4 | 0 |
| Health Informatics | 2 | 0 | 1 | 0 |
| Mobile Application | 7 | 1 | 1 | 0 |
| Computational Biology | 2 | 0 | 1 | 0 |
| Computational Complexity | 2 | 0 | 1 | 0 |
| E – Health | 2 | 0 | 1 | 0 |
| Musical IT | 1 | 0 | 1 | 0 |
| Mobile Gamming | 2 | 0 | 0 | 0 |
| Mobile Computing | 1 | 0 | 1 | 0 |
| Modelling and simulation | 18 | 0 | 3 | 1 |
| **Total** | **115** | **40** | **52** | **12** |

## 3.1.8 INVITED GUEST TALKS AND WORKSHOPS

In order to promote the research and development as well as to address the lack of awareness, knowledge and skills, invited talks and workshops were conducted from time to time. Those activities are listed with relevant details.

***Table 3.1.8 - A:***

| Date | Title | Type (Seminar or Workshop) | Resource Person | Key Areas |
|---|---|---|---|---|
| 3rd September 2016 | "Innovative ways to represent and process language" | Workshop | Dr. A.R. Weerasinghe, University of Colombo School of Computing | Natural Language Processing (NLP) |
| 3rd September 2016 | Towards the Vehicular Cloud: From Connected Cars to Smart Cities | Tutorial | Prof Falko Dressler, ACM Distinguished Speaker, Dept. of Computer Science, University of Paderborn, Germany | Embeded Systems |
| 3rd September 2016 | Overview of Big Data - Promises and Pitfalls, Tools and Techniques | Tutorial | Prof. Jenifer Widom, School of Engineering Stanford University, United States | Databases and data mining |
| 3rd September 2016 | "Cyber-Attacks: Detection and Recovery" | Workshop | Dr. Kasun de Zoysa, University of Colombo School of Computing | Information Security |
| 22nd November 2016 | A highly efficient, low-cost backscatter reader | Seminar | Prof. Thiemo Voigt, Sweden | Backscatter platforms |

## 3.1.9 VISITING RESEARCHERS

In order to promote the competency of the staff, visiting researchers were invited for short term or long term assignments at UCSC.

Prof. Saman Halgamuge was invited as the Visiting Professor for the year 2016 and he started his assignment in June 2016 and continued until March 2017. During this period, Prof. Halgamuge conducted the Prof. V. K. Samanaranayake oration, several workshops for the staff and students, and mentored staff and students with respect to conducting effective research degree. In addition, there are few other visiting researchers contributed in the year 2016.

*Table 3.1.9 - A: Visiting Researchers at UCSC - 2016*

| Visiting Researcher | Duration | Activity |
|---|---|---|
| Prof. Saman Halgamuge | June 2016- March 2017 | Visiting Professor |
| Prof. Abey Induruwa | July 2016 | Chief Editor – ICTer Journal |
| Dr. D P Liyanage | June 2016 | To deliver Lecture series for MIS students |
| Dr. George R. S. Weir | October 2016 | |

## 3.1.10 PROFESSOR VK SAMARANAYAKE ORATION – 2016

Prof. V.K. Samaranayake Memorial Oration 2016 was conducted on 5th July 2016 at the Auditorium of the Department of National Archives, Colombo by Prof. Saman Halgamuge who was a full Professor of the University of Melbourne. The topic of the oration was "Big Myths and Big Opportunities in Big Data Analytics: A Data Engineering Perspective". The details of this event are available at http://ucsc.cmb.ac.lk/vks-oration/vks-oration-2016/.

## 3.1.11 INTERNATIONAL CONFERENCE - ICTER2016

Setting up mechanisms for identifying and carrying out relevant research is another strategy of the UCSC to promote its research profile. Hence, the UCSC Research Symposium and ICTer Conference are considered as two important calendar events of the organization.

16th International conference on Advances in ICT for emerging regions held from **1st to 3rd September** 2016 brought together local and international researchers and practitioners in Computing. The main conference was held at the Hotel Jetwing Blue, Negombo on 1st and 2nd of September with the special participation of Prof. P. S. M. Gunarathna, the Vice Chairman of the University Grant Commission as the chief guest and Prof. Mohan Munasinghe as the guest of honour. Since 1998, ICTer has been playing a leading role in creating a unique platform to those who are interested and skilled in the domain of Computing to present their achievements and ideas. Creating an international forum to the local participants is another significant aspect of this conference.

ICTer is a concept of late Prof. V. K. Samaranayake who was the founding Director of UCSC. Gradually it was linked with the Institute of Electrical and Electronic Engineers (IEEE) with the intention of grabbing an international recognition and its name was changed in order to emphasize its regional importance. UCSC believes this conference as one of its most significant events considering its service in disseminating the knowledge in collaboration with other universities, public and private organizations. A significant number of academics and practitioners on the industry take part in this conference by submitting and reviewing research papers as well as by contributing to organize the conference.

This year ICTer had **received 118 submissions from 6 countries** which were double blind reviewed **by 84 international and local reviewers.** Based on the reviewers' feedbacks, **43 full papers and 05 posters** had been selected for the main conference with **the acceptance rate of 42%.** The industry track which was carried out for the first time in the ICTer records was another outstanding event of the 16th conference. The main purpose of the industry track was to allocate a space for the leaders and visionaries of the computing industry in Sri Lanka to share their achievements and experience in Computing.

All the accepted publications were presented in two parallel sessions under the themes of distributed computing, natural language processing, e-learning and ICT4D, image processing and computer vision, algorithms, computational biology, database and data mining, simulation and virtual reality, sensor networks,

software engineering and knowledge based systems. UCSC decided to divide the conference into two sessions in order to give more opportunity to the participants to select the subject areas according to their preferences.

It was a great honor for us to have **four prominent international academic personalities as our keynote speakers** on that special day. They were *Prof Falko Dressler from the department of computer science, University of Paderborn, Germany, Prof. Laurie Buys from School of Design, Queensland University of Technology, Australia, Prof. Jennifer Widom from School of Engineering, Stanford University, United States, and Prof. Alex Aiken from Department of Computer Science also from Stanford University*. The invited talks were delivered by Code Gen and the Millennium IT. After the main conference on 1st and 2nd of September, we could successfully conduct a work shop of the keynote speakers and the well known practitioners of the field on 3rd of September at the University of Colombo school of Computing.

**Conference Chair**
Dr. Hakim Usoof, University of Colombo School of Computing, Sri Lanka

**Co-Chairs**
Prof. Gihan Wikramanayake, University of Colombo School of Computing, Sri Lanka
Prof. Priyantha Hewagamage, University of Colombo School of Computing, Sri Lanka

**Programme Co-Chair**
Prof. Nihal Kodikara, University of Colombo School of Computing, Sri Lanka , Member IEEE Computer Society Sri Lanka Chapter
Dr. Yamaya Ekanayake, University of Colombo School of Computing, Sri Lanka
Dr. Roshan Ragel, Nominee from IEEE Sri Lanka Section

**Steering Committee:**
Dr. Ruvan Weerasinghe, University of Colombo School of Computing, Sri Lanka
Dr. Nalin Ranasinghe, University of Colombo School of Computing, Sri Lanka
Dr. Damitha Karunarathne, University of Colombo School of Computing, Sri Lanka
Prof. Athula Ginige, University of Western Sydney, Australia
Prof. Saman K. Halgamuge, Melbourne School of Engineering, University of Melbourne, Australia
Mr. S T Nandasara, University of Colombo School of Computing, Sri Lanka
Ms. Dilrukshi Gamage, University of Moratuwa, Sri Lanka
Dr. Ruwan Ranweera, University of Peradeniya, Sri Lanka, Immediate Past Chair, IEEE Sri Lanka Section
Dr. Sanjeewa Witharana, University of Peradeniya, Sri Lanka, Chair, IEEE Sri Lanka Section

**Publication Co-chair:**
Dr.Damith Sandaruwan, University of Colombo School of Computing, Sri Lanka
Mr. Viraj Welgama, University of Colombo School of Computing, Sri Lanka

**Industry liaison:**
Dr. Shiromi Arunathilake, University of Colombo School of Computing, Sri Lanka

**Publicity & Public relations co-chairs:**
Dr. Mindika Premachandra, University of Colombo School of Computing, Sri Lanka
Mr. Harsha Perera, University of Colombo School of Computing, Sri Lanka
Registration co-chairs
Ms. Lasanthi De Silva, University of Colombo School of Computing, Sri Lanka
Mr. Upul Anuradha, University of Colombo School of Computing, Sri Lanka
**Web Master:**
Mr. Tarindu Rajakaruna, University of Colombo School of Computing, Sri Lanka
Mrs. Rupika Wijesinghe, University of Colombo School of Computing, Sri Lanka

**Finance chair & treasurer:**
Mr. E.M. Gunarathne, Deputy Bursar, University of Colombo School of Computing, Sri Lanka

**Conference Secretariat:**
Ms. Jinadi Dahanayake, University of Colombo School of Computing, Sri Lanka

More details including pictures of the event is available at http://ucsc.cmb.ac.lk/events/16th-international-conference-advances-ict-emerging-regions-icter-2016/. The conference website is http://www.icter.org/conference

### 3.1.12 INTERNATIONAL JOURNAL – ICTER

The International Journal on Advances in ICT for Emerging Regions (ICTer) aims to promote journal level publications through peer review process while mentoring those who find difficulties in publishing their articles. This journal was initiated as a project by the University of Colombo School of Computing in order to promote computing publications in 2008. The journal welcomes researchers in ICT related fields, particularly from emerging regions, to disseminate knowledge through an international network to an international audience by way of an internationally acclaimed journal. ICTer will expose its writers to prominent research institutions and funding organizations like SIDA, SPIDER, JAICA, KOICA, World Bank, etc. Its ISBN No. is ISSN 2550-2794 and available at the http://www.icter.org/Journal. **In 2016, the impact factor of ICTer Publication is 0.70 according to Research Gate and it also has h-index 8.** Following members were appointed as the staff of ICTer Journal.

**Editor in Chief**
Prof. Abhaya Induruwa, Canterbury Christ Church University, United Kingdom

**Associate Editors**
Prof. Athula Ginige, Australia
Prof. Gihan Wikramanayake, University of Colombo School of Computing, Sri Lanka
Dr. Ana Hol, Western Sydney University, Australia
Prof. Giuliana Vitiello, Italy
Prof. Kamalnath Priyantha Hewagamage, University of Colombo School of Computing
Prof. Love Ekenberg, Sweden
Prof. Mahesan Niranjan, United Kingdom
Prof. Maria R. Lee, Taiwan, Province of China
Dr. Nalin Ranasinghe, Sri Lanka
Prof. San Murugesan, Australia

**Chair of ICTer Steering Committee**
Dr Mindika Premachandra, Sri Lanka

**ICTer Steering Committee Members**
Prof. Kamalnath Priyantha Hewagamage, University of Colombo School of Computing
Prof. Gihan Wikramanayake, University of Colombo School of Computing, Sri Lanka
Dr. Nalin Ranasinghe, Sri Lanka
Dr. Hakim Ali Usoof, UCSC

**Journal Manager**
Ms. Buddhika Dissanayake, University of Colombo School of Computing, Sri Lanka, Sri Lanka

**Web Master**

Tharindra Galahena, University of Colombo School of Computing, Sri Lanka

**The statistics of ICTer Journal as follows:**

1. Number of submissions 2016 = 10
2. Number accepted = 5
3. Number published = 5
4. Number of issues = 2
5. Major activities of ICTer Journal during 2016.

**Publishing 2016 Special Issue**

- Appointed Prof. Abhaya Induruwa as the new Editor-in-Chief - (Prof. Abhaya Induruwa has accepted to work as the Editor-in-Cheif 7th of September, 2016)
- Applied for Journal Indexing in Elsevier Scopus, Google Scholar, DOAJ (Directory of Open Access Journals), Web of Science (Thomson Reuters)











## 3.1.13 RESEARCH PUBLICATIONS – 2016

### 3.1.13.1 CONFERENCE PUBLICATIONS

1. Rangana Jayashanka Amaraweera, Ruvan Weerasinghe and C. R. Wijesinghe (2016). "*An Approach to Predict the Survival Time of Childhood Acute Lymphoblastic Leukemia Patients"*. International Conference on Advances in ICT for Emerging Regions, 1st – 3rd September 2016, Negombo, Sri Lanka.

2. Dakshila Kamalsooriya, R. D. T. Wasana Ranasinghe, Ruvan Weerasinghe, and C. R. Wijesinghe (2016). "*Identification & Verification of Mutations in Human Genome"*. International Conference on Advances in ICT for Emerging Regions, 1st – 3rd September 2016, Negombo, Sri Lanka.

3. Thilanka L.G.A.,Ekanayake, Y., Weerasinghe A.R (2016*). "Personalized eye fatigue detection for Mobile Users*". International Conference on Advances in ICT for Emerging, Negombo, Sri Lanka: 1-3rd September.

4. Fazeena.J.F, Hewagamage K.P, Ekanayaka, Y. (2016). *"Designing an M-Learning Application for Mobile Assisted Language Learning".* The 9th International Conference on Ubi-Media Computing, Moscow, Russia, August 15-17 2016

5. D. N. Ranasinghe, T. Sritharan, R. G. L. H. Samarawickerama(2016), *"Vemaque: An Approximate Verifiable Remote Computation Mechanism for K- Clique and Maximum Clique Problem"*, International Conference on Advances in ICT for Emerging Regions (ICTer), 2016, Sri Lanka.

6. M G N A S Fernando (2016), *"Biostatic approach to diagnose diseases using computational 'Nadi' pattern "*, International Conference on Environmental Chemistry and Biology (ICECB), 2016, Australia. http://www.icecb.org

7. G.D.S.P. Wimalaratne(2016), *"Sensor Fusion in Visually Impaired Navigation Persons in Constrained Spaces"*, IEEE International Conference on Information and Automation for Sustainability, ICIAFS, 2016, December ,Sri Lanka. http://www.iciafs.org

8. K.P. Hewagamage, Dinuka Rukshani Wijendra (2016), *"Automated Tool for the Calculation of Cognitive Complexity of a Software"*, 2nd International Conference on Science in Information Technology, (ICSITech),October, 2016, Indonesia. Paper ID.1570294442, P.No.163 – 168.

9. S M K D Arunatileka (2016), *"The Possibilities of Music Therapy for Healing and Positive Psychology among Sri Lankans"*, Humanities, Social Sciences and Environment (HSSEC) – 2016, November. Indonesia. http://www.baliconference.usm.my/index.php//hssec/home Paper ID. HSSEC1046,

10. Leif Marklund and Hakim Usoof (2016). "*Educational context's influence on how learners perceive the private good of developing digital literacies in a developed and a developing country"*. NERA 2016, 44th Congress of the Nordic Educational Research Association, Helsinki.

11. Thilina Halloluwa, Dhaval Vyas, Hakim Usoof, Tony Sahama and Priyantha Hewagamage (2016). "*Gamifying Mathematics for Primary Students in Rural Sri Lanka"*. The 9th Nordic Conference on Human-Computer Interaction (NordiCHI'16), Gothenburg, Sweden, Oct 23-27, 2016.

12. Maheshya Weerasinghe, Aruni Nisansala, Damitha Sandaruwan, Nihal Kodikara,Chamath Keppitiyagama, G.K.A Dias: "*Virtual Eye: A smarter mode of interaction to virtual tours*". 14th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys) 2016, Singapore; 06/2016.

13. Aruni Nisansala, G.K.A. Dias, Nihal Kodikara, Maheshya Weerasinghe, Damitha Sandaruwan, Chamath Keppiyagama, Nuwan Dammika, "*Stiffness Parameter Evaluation for Graphical and Haptic Gallbladder*

*Model*", 2nd International Conference on Communication and Information Processing (ICCIP 2016), Nov 26-29, 2016 | Singapore.

14. Maheshya Weerasinghe, G.K.A. Dias, Anuja Dharmarathne, Aruni Nisansala, Damitha Sandaruwan, Chamath Keppitiyagama, Nihal Kodikara, "*Computer Aid Assessment of Muscular Imbalance for Preventing Overuse Injuries in Athletes*", 2nd International Conference on Communication and Information Processing (ICCIP 2016), Nov 26-29, 2016 | Singapore. http://www.iccip.org/

15. P. Somaratne, T. A. Weerasinghe, (2016), "Exploring student interaction through classroom and computer supported collaborative learning", EDULEARN16, Spain. July, 2016

16. C V Nanayakakara, H A Caldera, (2016), *"Identification of Musically induced Emotion: A Machine Learning based approach"*, 3rd International Conference on Data Mining, Internet Computing, and Big Data, Turkey .July 2016.

17. A. I. Walisadeera, J S Gonathilaka, S.W.A.D.M. Samarasinghe, (2016),"*User-Friendly Ontology Structure Maintenance Targeting Sri Lankan Agriculture Domain "*, 16th International Conference on Computational Science and It's Applications, July, 2016. China.

18. N D Kodikara, W.O.K.A.S. Wijesinghe, K.D. Sandaruwan. (2016),"*Autogenous Diabetic Retinopathy Censor for Ophthalmologists - AKSHI"*, IEEE International Conference on Control and Robotic Engineering, Singapore.

19. G P N Boteju. (2016),"*A survey on wireless sensor network environment, attacks and security requirements"*, Technoarete Conference, India.

20. D N Ranasinghe, Y.S. Horawalawithana. (2016),"*An Efficient Incremental Indexing Mechanism for Extracting Top-k Representative Queries over Continuous Data-Streams"*, Virtual Presentation at the Workshp: ARM 15, Canada.7- 11th December

21. Nishan Nilanka Gunawardena, Roshan N Rajapakse, Nihal D Kodikara, Indika U Mudalige, (2016). "*Moving from Detection to Pre-detection of Alzheimer's Disease from MRI Data*", Proceedings of the International Conference on Advances in ICT for immerging regions (ICTer 2016), Negombo.

22. Lakshika Nanayakkara, Nihal D Kodikara, Asoka S. *Karunananda, Maduwanthi Dissanayake, (2016). "Classification of Stages of Diabetic Retinopathy in Human Retina",* Proceedings of the International Conference on Advances in ICT for immerging regions (ICTer 2016), Negombo.

23. Santhakumar Titus Rakkesh, A.R. Weerasinghe and R.A.C. Ranasinghe (2016). "*A Decentralized Vehicle Re-routing Approach using Vehicular Ad-hoc Networks"*. International Conference on Advances in ICT for Emerging Regions, 1st – 3rd September 2016, Negombo, Sri Lanka.

24. Supun Rasitha Muthutantrige and A.R. Weerasinghe (2016). "*Sentiment Analysis in Twitter Messages using Constrained and Unconstrained data categories"*. International Conference on Advances in ICT for Emerging Regions, 1st – 3rd September 2016, Negombo, Sri Lanka.

25. Buddhima Dilmi Gunasekara, A.R. Weerasinghe and W.V. Welgama (2016). "*Hybrid Part of Speech Tagger for Sinhala Language"*. International Conference on Advances in ICT for Emerging Regions, 1st – 3rd September 2016, Negombo, Sri Lanka.

26. K.M.P.N. Jayathilaka, A.R Weerasinghe and W.M.L.K.N. Wijesekara (2016). "*Making Sense of Large Volumes of Unstructured Email Responses"*. International Conference on Advances in ICT for Emerging Regions, 1st – 3rd September 2016, Negombo, Sri Lanka.

27. S. T. Rakkesh, R. Weerasinghe and C. Ranasinghe (2016). "*Simulation of Real-time Vehicle Speed*

*Violation Detection Using Complex Event Processing"*. Proceedings of the International Conference on Information and Automation for Sustainability (ICIAfS), 16th – 19th December 2016, Galle, Sri Lanka.

28. Menasha Thilakaratne, Ruvan Weerasinghe, Sujan Perera (2016). "*A Knowledge-Driven Approach to Predict Personality Traits by Leveraging Social Media Data"*. The 2016 IEEE/WIC/ACM International Conference on Web Intelligence, 13-16 October 2016, Nebraska, USA.

29. M. G. Viraj Lakshitha and K. L. Jayaratne (2016): "*Melody Analysis for Prediction of the Emotion Conveyed by Sinhala Songs"*, Proceedings of IEEE International Conference on Information and Automation for Sustainability (ICIAfS 2016), Sri Lanka.

30. W. G. Dulakshi Vihanga, K. L. Jayaratne and Andrea Barraza-Urbina (2016): "*Enhancing Diversity of Recommendations by Experience-Based Personalization*", Proceedings of eleventh IEEE International Conference on Information Technology and Applications (ICITA 2016), Australia.

31. Rajitha Peiris and Lakshman Jayaratne (2016): "*Supervised Learning Approach for Classification of Sri Lankan Music based on Music Structure Similarity*", Proceedings of ninth Annual International Conference on Computer Games, Multimedia and Allied Technology (CGAT 2016), Singapore, 84-90.

32. W. G. Dulakshi Vihanga, K. L. Jayaratne and Andrea Barraza-Urbina (2016): "*Personalization of Recommendation Diversification*", Proceedings of ninth Annual International Conference on Computer Games, Multimedia and Allied Technology (CGAT 2016), Singapore, 78-83.

33. Ge, T., Di Giovanni, P., Mathai, M., Goonetillake, J. S., Wikramanayake, G. N., Ebillo, M., Vitiello, G., Tortora, G., Tucci, M. & Ginige, A. (2016), "*Interplay of Requirements Engineering and Human Computer Interaction Approaches in the Evolution of a Mobile Agriculture Information System"*. In: Ebert, A., Humayoun, S. R., Seyff, N., Perini, A. & Barbosa, S. D. J. (eds.) Usability- and Accessibility-Focused Requirements Engineering: First International Workshop, UsARE 2012, Held in Conjunction with ICSE 2012, Zurich, Switzerland, June 4, 2012 and Second International Workshop, UsARE 2014, Held in Conjunction with RE 2014, Karlskrona, Sweden, August 25, 2014, Revised Selected Papers. Cham: Springer International Publishing.

34. A. Ginige, A. I. Walisadeera, T. Ginige, L. N. C. De Silva, P. Di Giovanni, M. Mathai, J. S. Goonetillake, G. N. Wikramanayake, G. Vitiello, M. Sebillo, G. Tortora, D. Richards & R. Jain. *2016. "Digital Knowledge Ecosystem for achieving Sustainable Agriculture Production: A Case Study from Sri Lanka".* IEEE DSAA 2016, 3rd IEEE International Conference on Data Science and Advanced Analytics (DASS 2016), Montreal, Canada.

35. Sugathadasa, L., Ginige, A., Wikramanayake, G. N., Goonetillake, J. S., De Silva, L. N. C, Walisadeera, A. I; "*Digital Knowledge Ecosystem to Reduce Uncertainty and Coordination Failure in Agricultural Markets - Study of "Govi Nena" Mobile-Based Information System*;" WCCA.AFITA2016, June 2016 Korea

36. Bhagyadith G D S D, Wikramanayake Gihan N, (3 Mar 2016), "*Querying Federated Ontologies using ontology inter-operations in agriculture domain*", in 8th Annual Symposium, Colombo, Sri Lanka

37. Hettiarachchi Achini Sandeepani, Goonatillake Jeevani, Wikramanayake Gihan, (3 Mar 2016), "*Hybrid Approach for Optimal Management and Querying of Data and Knowledge*", 8th Annual Symposium, Colombo, Sri Lanka.

38. Anusha Indika Walisadeera, Athula Ginige, Gihan Nilendra Wikramanayake, (4-7 July 2016), "*Ontology Evaluation Approaches: A Case Study from Agriculture Domain*", in 16th International Conference, Beijing, China, Proceedings, Part IV 978-3-319-42088-2.

39. HHLK Fernando, HHLK, Wikramanayake, GN, Sahama, T and Edirisingha, K, (Sept 2016), "*Situational Analysis Implementation of Hospital Information System HIS in University Hospital KDU*", Colombo, Sri Lanka.

40. M. Fernando, T. Sahama, C. Fidge and K. P. Hewagamage, "*Personal health records as sources of productivity evidence*," 2016 IEEE International Conference on Communications (ICC), Kuala Lumpur, 2016, pp. 1-6. (doi: 10.1109/ICC.2016.7510830)

41. Perera, J.A.P.H., Perera, P.M.C., Rathnarajah, L.M., & Ekanayake, H.B. (2016). "*Biofeedback Based Computational Approach for Working Stress Reduction Through Meditation Technique"*. Proceedings of the International Conference on Advances in ICT for Emerging Regions (ICTer), Negombo, Sri Lanka.

42. Thomas Westin , Sirkku Männikkö-Barbutiu , Harsha Perera , Upul Anuradha "*Game Based Learning of Programming for Underprivileged Communities in Sri Lanka*" 10th European Conference on Games Based Learning(ECGBL) - 6 – 7th October 2016, Paisley, Scotland

43. Yohani S. Ranasinghe, Malaka J. Walpola (2016). "*Integrating Context Awareness with Reminder Tools*". International Conference on Advances in ICT for Emerging Regions, 1st – 3rd September 2016, Negombo, Sri Lanka.

44. V.A. Isuru, M.A.I.M Dharmadasa, D.V.B.C Jayasinghe, C.I. Keppitiyagama (2016). "*Reusing Discarded-Smartphone Capabilities on Quadcopters: Rationale, Benefits and Issues*". International Conference on Advances in ICT for Emerging Regions, 1st – 3rd September 2016, Negombo, Sri Lanka.

45. Prashan Madumal, Ajantha S. Atukorale and Hakim Usoof (2016). "*Adaptive Event Tree-Based Hybrid CEP Computational Model for Fog Computing Architecture"*. International Conference on Advances in ICT for Emerging Regions (ICTer 2016), Negombo, Sri Lanka, Sep 1 - 3, 2016.

46. A.T. Rupasinghe, N.L. Gunawardana, S. Shujan, Ajantha S. Atukorale, (2016), "*Scaling Personality Traits of Interviewees in an Online Job Interview by Vocal Spectrum and Facial Cue Analysis*" , International Conference on Advances in ICT for Emerging Regions (ICTer 2016), Negombo, Sri Lanka, Sep 1 - 3, 2016.

47. Lahiru A.N. Yapa, Ajantha S Atukorale, (2016), "*Real time road sign detection using hybrid colour segmentation and invariant shape detection*" , in 34th National Information Technology Conference (NITC) , Colombo, Sri Lanka, August 2016.

#### 3.1.13.2 JOURNAL PUBLICATIONS

1. G.D.S.P. Wimalaratne, AkarshaniAmarasinghe (2016), *"An Assistive Technology Framework for Communication with Hearing Impaired Persons"*, Global Science and Technology Forum – Journal on Computing, JoC. Singapore,Vol.05,No.01,(GSJ) http://globalstf.org/journal/gstf-jurnal-on-computing-joc

2. G D S P Wimalaratne, Jayalath D D A C J, Karunanada A S (2016), *"Modelling Goal Selection of Characters in Primary Groups in Crowd Simulation"*, International Journal of Simulation Modelling.Vol.15, NO.04, December 2016, PP.581-770

3. G D S P Wimalaratne, Pumudu Fernando, (2016),"*Sign Language Translation Approach to Sinhalese Language"*, Global Science and Technology Forum - JOC, Singapore.Vol.05,No.01, http://globalstf.org/journal/gstf-journal-on-computing-joc/

4. P. B. Jayasekara1, L. Sivaneasharajah1, M. A. S. Perera1, J. Perera, D. D. Karunaratne, K. D.

Sandaruwan, R. N. Rajapakse, (2016),"*Facial Index Based 2D Facial Composite Process for Forensic Investigation in Sri Lanka "*, Forensic Medicine and Anatomy Research (FMAR). China. Vol.4 No.1, January 2016, PP. 7-16.

5. M G N A S Fernando, Tharushika Silva. (2016),"*Knowledge Based Approach for Concept level Sentimental Analysis for on line Review"*, International Journal of Emerging Trends and Technology in Computer Science. India.Vol.05, Issue 01,January – February, www.ijettcs.org

6. S S P MatharaArachchi, Siong Choy Chung, Kennedy .D. Gunawardhana. (2016),"*Comprehensive Marketplace and factors affecting the budget of ERP in Sri Lanka"*, European Journal of Computer Science and Information Technology, European Centre for Research, Training and Development., UK, www.ea-journals.org , www.eajournals.com Vol.03,No.01,PP.1-19 ,September 2015

7. S S P MatharaArachchi,Siong Choy Chung,A.G.I.Madushani. (2016),"*Quality Assurance and Quality Control in ERP System Implementation. A survey on wireless sensor network environment, attacks and security requirements"*, American Scientific Research Journal for Engineering, Technology and Sciences.(ASRJETS). http://asrjetsjournal.org/ ,Vol.11,No.1,PP.70-83

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# 4. HUMAN RESOURCES – ACADEMIC AND NON-ACADEMIC

Human resources of an organization are the key foundation as well as the most important asset for its development. The University Grant Commission and the Department of Management Services wanted to conduct the zero cadre review to identify the actual human resource requirement considering the workload of both academic and non-academic staff. In the past, this was determined based on the number of students.

## *4.1 UCSC CADRE*

In 2016, zero cadre review was carried out and the cadre review manual of the organization was developed for the first time in the history of the organization. The UCSC annually admits 275 undergraduate students based on UGC Z-Score cutoff marks for two degree programs of 3 years duration. The intake consists of 175 students for the Computer Science degree and 100 students for the Information Systems degree. Out of the 175 computer science students, at the end of the second year, the best 40 academically performing students are given the opportunity to specialize in Computer Science or Software Engineering in the 4th year of study. At the end of second year, the best 20 academically performing students are provided with an opportunity to specialize in Information Systems in the 4$^{th}$ year of study.

Simultaneously UCSC annually admits 230 postgraduate students for three Masters degree programs as 100 students for Master of Computer Science degree, 100 students for Master of Information Technology degree and 30 students for Master of Information Security degree. UCSC has over 50 MPhil and Ph.D. Computing Research students under the supervision of the UCSC academic staff members.

Bachelor of IT (BIT) External degree program annually attracts around 2000 new students while another 3000 re-sit for the examinations. UCSC conducts short term extension courses and provide expertise in Computing for the organizations of government and private sectors to develop software solutions and solve their problems related to the requirements of Information Technology.

The University of Colombo School of Computing (UCSC) currently has 195 cadre positions attached to 19 units/centers/departments. 118 positions have been filled on the permanent basis and another 68 positions are filled on temporary basis such as contract, assignment, and daily paid basis. In the zero cadre review process, we also have suppressed some unwanted positions. In our review, we have observed the fact that the UCSC requires several nominal positions such as Deputy Director, Department Heads and Center Coordinators which have been defined in the ordinance of UCSC. However, those nominal positions do not require fulltime staff members since the permanent academic staff members are covering services of such posts.

We have also considered the immediate cadre requirements since we are planning to increase our undergraduate intake by 10% in coming years. We have provided the details of the cadre requirements summary in the following table. A Detailed explanation of cadre requirements with respect to each division will be given later in this report. Since UCSC generates income from different programs and activities, the UCSC pays the salary of some positions using its generated income. Around 40% of recurrent expenditure is currently covered using the generated income of these programs.

***Table 4.1 - A: Summary of UCSC Cadre Requirement***

| Designation | Approved Cadre (a) | Existing Cadre (b) | Vacancy | Additional No of Posts Required (c - a) | No of Posts Required (C ) |
|---|---|---|---|---|---|
| (1) Director's Office | 2 | 3 | 0 | 4 | 6 |
| (2) Establishment Division | 7 | 4 | 3 | 2 | 9 |
| (3) General Administration Division | 16 | 8 | 8 | 1 | 14 |
| (4) Academic & Publication (Undergraduate) Division | 6 | 6 | 0 | 5 | 15 |
| (5) ISE Department (Academic) | 27 | 23 | 4 | 30 | 57 |
| ISE – Non-academic staff | 0 | 0 | 0 | 1 | 1 |
| (6) CIS Department (Academic) | 28 | 24 | 4 | 15 | 43 |
| CIS-Non-academic staff | 0 | 0 | 0 | 1 | 1 |
| (7) CMT Department (Academic) | 26 | 17 | 9 | 30 | 60 |
| CMT –Non-academic staff | 0 | 0 | 0 | 1 | 1 |
| (8) Finance Division | 12 | 11 | 1 | 4 | 16 |
| (9) Examination Division | 6 | 6 | 0 | 4 | 11 |
| (10) Advanced Digital Media and Technology Centre (ADMTC) | 15 | 0 | 15 | 2 | 16 |
| (11) Centre for Digital Forensic (CDF) | 3 | 0 | 3 | 1 | 5 |
| (12) E-Learning Centre (eLC) | 0 | 0 | 0 | 11 | 13 |
| (13) Library | 6 | 3 | 3 | 0 | 6 |
| (14) Postgraduate Division | 0 | 0 | 0 | 3 | 3 |
| (15) Engineering & Maintenance | 7 | 4 | 3 | 5 | 11 |
| (16) Network Operating Centre (NOC) | 7 | 4 | 3 | 3 | 23 |
| (17) External Degree Centre (EDC) | 12 | 5 | 7 | 1 | 8 |
| (18) Professional Development Centre (PDC) | 0 | 0 | 0 | 0 | 3 |
| (19) Computer Service Centre (CSC) | 15 | 0 | 15 | 1 | 3 |
| **Total** | **195** | **118** | **78 *** | **125** | **325** |

*** 68** of **78** vacancies are currently filled using contact, assignment and daily paid basis employments. Actual details have been given in the cadre review manual of 2016.

*Table 4.1 - B: The distribution of cadre positions against the salary scale– 31st December 2016*

| Staff category | Salary Scale | Approved Cadre | Permanent | | | Temporary | | | Contract | | | Visiting | | | Assignment | | | Permanent Cadre Vacancies | Actual Cadre Vacancies |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | | |
| | | (1) | | | (2) | | | (3) | | | (4) | | | (5) | | | (6) | (1)-(2) | (1)-(2)-(3)-(4)-(5)-(6) |
| Academic Staff | U-AC 2 to U-AC 5 | **59** | **33** | **9** | **43** | | **5** | **5** | **2** | **1** | **3** | | | | **0** | **0** | **0** | **16** | **8** |
| | U-AC 1 | **18** | | | | **8** | **12** | **20** | **0** | **1** | **1** | | | | | | | | **(3)** |
| Library (professional staff) | U-AC 5 | | | | | | | | | | | | | | | | | | |
| | U-AC 4 | | | | | | | | | | | | | | | | | | |
| | U-AC 3 | **1** | | | | | | | | | | | | | | | | **1** | **1** |
| Administrative Staff | U-EX 3 | | | | | | | | | | | | | | | | | | |
| | U-EX 2 | **5** | **3** | **2** | **5** | | | | | | | | | | | | | **0** | **0** |
| | U-EX 1 | **3** | **1** | **1** | **2** | | | | | | | | | | | | | **1** | **1** |
| Other Executive Staff*1 | U-EX 3 | | | | | | | | | | | | | | | | | | |
| | U-EX 2 | **1** | | | | | | | | | | | | | | | | **1** | **1** |
| | U-EX 1 | | | | | | | | | | | | | | | | | | |
| | U-MO 2 | | | | | | | | | | | | | | | | | | |
| | U-MO 1 | | | | | | | | | | | | | | | | | | |
| Academic Support Staff | U-AS 2 | **15** | **4** | **0** | **4** | | | | **3** | **2** | **5** | | | | | | | **11** | **6** |
| | U-AS 1 | **5** | **0** | **0** | **0** | | | | **5** | **2** | **7** | | | | | | | **5** | **0** |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Technical Staff *1 | U-EX 2 | | | | | | | | | | | | | | | | | | |
| | U-EX 1 | | | | | | | | | | | | | | | | | | |
| | U-MN 4 | | | | | | | | | | | | | | | | | | |
| | U-MN 3 | | | | | | | | | | | | | | | | | | |
| | U-MN 2 | | | | | | | | | | | | | | | | | | |
| | U-MN 1 | | | | | | | | | | | | | | | | | | |
| | U-MT 1 | **7** | **2** | | **2** | | | | | | | | | | | | | **5** | **5** |
| Clerical & Allied | U-MN 4 | **4** | **0** | **3** | **3** | | | | | | | | | | | | | **1** | **1** |
| | U-MN 3 | | | | | | | | | | | | | | | | | | |
| | U-MN 2 | | | | | | | | | | | | | | | | | | |
| | U-MN 1 | **43** | **8** | **14** | **22** | | | | **1** | **2** | **3** | | | | **3** | **5** | **8** | **21** | **10** |
| Primary Staff | U-PL 3 | **7** | **3** | **0** | **3** | | | | | | | | | | | | | **4** | **4** |
| | U-PL 2 | **2** | | | | | | | | | | | | | | | | **2** | **2** |
| | U-PL 1 | **7** | **6** | **3** | ***9** | | | | | **2** | **2** | | | | **2** | | **2** | **0** | **0** |
| **Total** | | **177** | **60** | **32** | **84** | **8** | **17** | **25** | **11** | **10** | **21** | | | | **5** | **5** | **10** | **66** | **28** |

In 2016, few vacancies for the Academic staff are used to appoint Temporary Instructors due to inadequate cadre positions. One staff member obtained the sabbatical leave in 2016. Seven (7) Labourers were given permanent appointments as UGC PA Circular 25/2014, works relevant for vacant positions are covered by them. According to the table given above there were 149 staff members who were working in the organization and there were 28 vacancies based on the cadre manual.

Following table shows actual status of Cadre and vacancies with respect to different positions.

| Staff | Approved Cadre | Permanent | | | Temporary | | | Contract | | | Visiting | | | Assignment | | | Permanent Cadre Vacancies | Actual Cadre Vacancies |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | | |
| | (1) | | | (2) | | | (3) | | | (4) | | | (5) | | | (6) | (1)-(2) | (1)-(2)-(3)-(4)-(5)-(6) |
| Senior Professor | 59 | 0 | 0 | 0 | | | | | | | | | | | | | 16 | 8 |
| Professor | | 3 | 0 | 3 | | | | | | | | | | | | | | |
| Associate Professor | | 0 | 0 | 0 | | | | | | | | | | | | | | |
| Senior Lecturer | | 18 | 4 | 22 | | | | 2 | 1 | 3 | | | | | | | | |
| Lecturer | | 2 | 2 | 4 | | | | | | | | | | | | | | |
| Prob. Lecturer | | 10 | 4 | 14 | | | | | | | | | | | | | | |
| Temporary Lecturer/ Asst. Lecturer | | | | | 0 | 5 | 5 | | | | | | | | | | | |
| Temporary Research Assistant | | | | | | | | | | | | | | | | | | |
| Temporary Demonstrator | | | | | | | | | | | | | | | | | | |
| Temporary Instructor | 18 | | | | 8 | 12 | 20 | 0 | 1 | 1 | | | | | | | 18 | 0 |
| Temporary Tutor | | | | | | | | | | | | | | | | | | |
| **Total** | **77** | **33** | **10** | **43** | **8** | **17** | **25** | **2** | **2** | **4** | | | | | | | **34** | **5** |

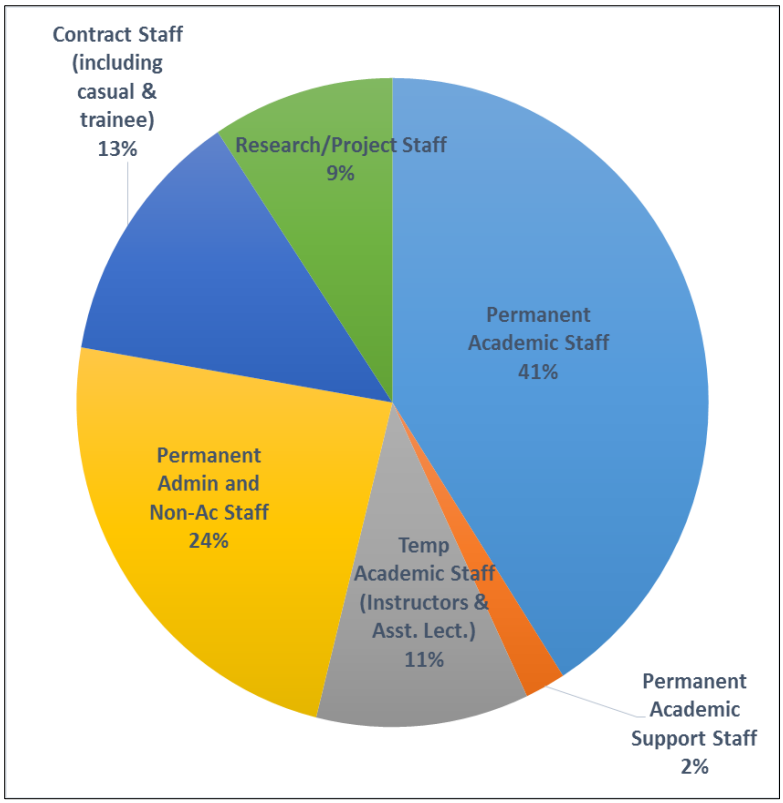



*Figure 4.1 - B: Distribution of filled cadre positions in 2016*

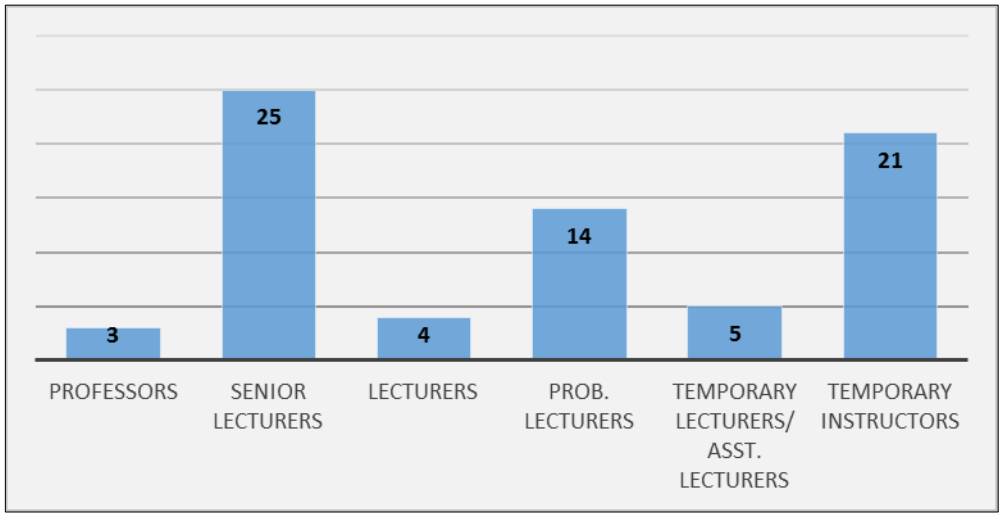



*Figure 4.1 - C: Filled Academic and Academic Support cadre positions in 2016*

## 4.1.1 OVERALL PROFILE OF UCSC STAFF

### 4.1.1.1 HIGHEST COMPUTING QUALIFICATION OF ACADEMIC STAFF

| No. of Staff | PhD | MPhil | MSc | BSc (Hons) |
|---|---|---|---|---|
| 42 | 24 | 4 | 5 | 8 |

### 4.1.1.2 HIGHEST ACADEMIC QUALIFICATIONS OF ADMINISTRATIVE STAFF

| No. of Staff | PhD | MPhil | MSc | Bachelor | Diploma |
|---|---|---|---|---|---|
| 7 | -- | -- | 4 | 1 | 2 |

In 2016, two academic staff members completed their doctoral degrees and one administrative staff member completed the masters degree. Two permanent staff members obtained study leave to read doctoral degree in foreign universities and one more member continued to obtain the study leave to complete his postgraduate degree. One academic staff member who was on sabbatical leave completed his leave period and assumed duties.

Since all permanent non-academic cadre positions are not filled, UCSC uses temporary staff on contract basis or assignment basis to cover the duties of different divisions. This situation considered in the zero cadre review and details are recorded in the UCSC Cadre Manual 2016. Details of all these appointments are mentioned in the Cadre table given earlier.

## 4.1.2 RECOGNITION OF UCSC STAFF

On 16th February 2016, the Long Service Award was conducted to recognize the staff who have completed more than 25 years of service in the university system. Following staff members received the long service award in 2016.

***Table 4.1.2 - A:***

| Staff Member | Designation | Service start date at UCSC (Date of First Appointment) | Date of Completion of 25 years/ 30 years | Total Service @ University System as at 31.12.2016 |
|---|---|---|---|---|
| Mrs. R L A Rajapakse | Senior Staff Assistant/ Library Services | 03.10 1985 | 03.10.2015 | 31 Years |
| Dr. DN Ranasinghe | Senior Lecturer Gr. I | 08.09.1986 | 07.09.2016 | 30 Years |
| Dr. HA Caldera | Senior Lecturer Gr. I | 02.12.1991 | 01.12.2016 | 25 Years |
| Mrs. S F Imam | Senior Staff Assistant | 05.02 1991 | 05.02.1991 | 25 Years |
| Mrs. D K M Rathnayake | Senior Assistant Registrar/ Examinations | 01.09.1986 | 01.102013 | 30 Years |

## 4.1.3 STAFF DEVELOPMENT AND TRAINING

The staff development and training is treated as an important policy towards the human resource development of the organization. Depending on the grade of staff and job requirements, suitable staff is supported using both funds of generated income as well as from government grant.

Academic staff is given the freedom to participate in presenting their research papers subject to a limit as given in the Research Fund policy of 2016. Within the individual quota, the staff could also attend conferences depending on their interest subject to some additional conditions. Details of such participation have been given in the Research section of this report.

Research fund is available only for the permanent staff of the UCSC. Therefore, all academic, academic support and administrative staff irrespective of the staff grade, are supported to attend two locally held conferences, ICTer2016 and NICT2016 as an opportunity to enhance their professional standard.

If a staff member requests to participate in local workshop/training programme which is directly related to his/her job of the UCSC, through the Head of respective division, such requests are accommodated through the funds available for the financial year. All such training opportunities are tabled below.

***Table 4.1.3 - A: Staff who participated short term training/workshop/seminar sessions***

| | Participants Name | Institute | Course | Cost |
|---|---|---|---|---|
| 1 | J.K.D.I.K.Thilakaratne | University Of Colombo | Training programme in office procedures and Clerical Skills for Computer Application Assistants(CAA) | 12,500.00 |
| 2 | E.M.Gunaratne | The Association of Public Finance Accountants of Sri Lanka | Training programme on Assets Management | 8,000.00 |
| 3 | R.M.Weerasiri,H.M.S.P .Herath & K.T.M.D.Madhushanka | Prag Service(Pvt)Ltd | Training programme on Contract Administration,Preparation of Bidding Documents & Bid Evaluation | 30,000.00 |
| 4 | E.M.Gunaratne & D.S.R.De Silva | The National Chamber of Commerce of Sri Lanka | "Online Submission of Tax Returns"(VAT,SVAT,NBT & PAYE) | 6,000.00 |
| 5 | D.D.A.C.J.Jayalath | University Of Colombo | Certificate in Teaching in Higher Education(CTHE 20),2017 | 25,000.00 |
| 6 | E.M.Gunaratne & S.P.G.Nihal | University Of Colombo | Workshop regarding "Ensuring proper utilization of University Funds in Universities | 4,000.00 |
| 7 | A.P.Sayakkara | University Of Kelaniya | Staff Development Course.(CTHE) | 40,000.00 |
| 8 | Prof.K.P.Hewagamage | University Of Colombo | Workshop regarding "Ensuring proper utilization of University Funds in Universities | 2,000.00 |

| | | | | |
|---|---|---|---|---|
| 9 | S.D.Gunawardhana | National Centre for Advanced Studies in Humanities and Social in Sciences | Short Course in Academic Writing | 9,000.00 |
| 10 | D.M.U.A.Prabath | National Institute of Library & Information Sciences | The Certificate in Library and Information Management - Preliminary | 12,000.00 |
| 11 | Mr. K S Goonathilake & 3 others | Sri Lanka CERT (Pvt) Ltd | Cyber Security Conference Fee | 66,000.00 |
| | | | **Total** | **214,500.00** |

### 4.1.4 MEDICAL SUPPORT SCHEME

The Medical Support Scheme was introduced to the UCSC as a part of the organizational policy of health and safety of the organization. In this Medical Support Scheme, the staff has been given an opportunity to subscribe to one of three schemes which have different supporting limits when medical expenses are incurred. The objective is to support the staff to maintain a good profile of their health conditions by conducting a medical camps and partially supporting their medical expenses. The UCSC hopes this will motivate its employees to increase their productivity at the workplace and provide full cooperation to generate additional income for the organization. Only less than 2% of annual generated income is used for the Medical Support Scheme in order to recognize all staff members equally irrespective of grade their service.

In 2016, the Board of Management approved the proposal to conduct a medical camp for all staff members under the medical support scheme. Irrespective of staff grade, all employees were able to obtain common medical reports to identify whether they are suffering from non-communicable diseases and to consult a doctor personally for health and wellbeing.

### 4.1.5 WELFARE SOCIETY OF UCSC

The welfare society of UCSC has been a volunteer society for all staff members irrespective of type and grade of employees. Its main mandate is to support the management when carrying out staff welfare related activities. When an immediate family member of an employee passed away, the welfare society organizes transport facilities to the other staff members to attend it as well as represent the institute in order to support him. It also supports the staff member financially or some other ways in such situations. The membership of the welfare society is open for all staff members who have completed at least one year of service at the UCSC and they have to pay a membership fee in order to be a member.

In 2016, the management wanted to carry out an out bound training programme for all staff members and requested the welfare society to organize it in the month of September 2016. The welfare society successfully carried out this training programme linking it with their annual trip of 2016. Several activities were carried during this outbound training programme.

# 5. INSTITUTIONAL DEVELOPMENT

## 5.1 INSTITUTIONAL REVIEW – 2016

The University of Colombo decided to carry out the institutional review in the latter part of 2015. Hence, all the faculties and institutes were instructed by the Vice Chancellor to establish a Quality Assurance Cell (QAC) and prepare the self-evaluation report of each faculty/institute. The UCSC started the quality assurance cell and started the institutional review process by cooperating with all academic and non-academic staff of the UCSC. The institutional review was carried out considering 10 criteria and best practices. The UCSC carried out the self-evaluation and the full report is available for reference. Following table shows the score with respect to each criteria as described in the self-evaluation report of institutional review of the UCSC.

| Criteria | Number of Best practices | Expected Max. Score (3*Criteria) | UCSC Raw Score based on Evidence | Weight | Actual Score | Grade |
|---|---|---|---|---|---|---|
| 1. Governance and Management | 29 | 87 | 71 | 180 | **146.90** | 82% |
| 2. Curriculum Design and Development | 15 | 45 | 43 | 120 | **114.67** | 96% |
| 3. Teaching and Learning | 10 | 30 | 26 | 100 | **86.67** | 87% |
| 4. Learning Resources, Student Support and Progression | 14 | 42 | 38 | 80 | **72.38** | 90% |
| 5. Student Assessment and Awards | 15 | 45 | 34 | 100 | **75.56** | 76% |
| 6. Strength and Quality of Staff | 11 | 33 | 19 | 100 | **57.58** | 58% |
| 7. Postgraduate studies, Research, Innovation and Commercialization | 25 | 75 | 62 | 100 | **82.67** | 83% |
| 8. Community Engagement, Consultancy and Outreach | 6 | 18 | 16 | 60 | **53.33** | 89% |
| 9. Distance Education | 13 | 39 | 32 | 40 | **32.82** | 82% |

| | | | | | | |
|---|---|---|---|---|---|---|
| 10. Quality Assurance | 7 | 21 | 15 | 120 | **85.71** | 71% |
| **Total** | **145** | **435** | **356** | **1000** | **81%** | |

**In the institutional review, the University of Colombo got "A" grade. According to the self-evaluation of UCSC, the UCSC is also in the level of grade "A". However, we identified many issues to be addressed in order to maintain the "A" grade standard of the Institute further.**

## *5.2 INFRASTRUCTURE DEVELOPMENT*

In 2016, the volume of the development of infrastructure has significantly increased compared to previous years. The multi-purpose auditorium building was supposed to be completed in 2016 but due to several operational issues, it was postponed to the first quarter of 2017. However, around 92% of the construction was completed at the end of 2016. 60% of contract sum was received directly from the government and the UCSC spent the balance 40% from its generated income.

The UCSC received the cabinet approval for the second phase of Canteen, library and administration building block which was required to commence the project before November 2016. The same party who developed the phase 1 of the project was able to qualify the project based on the open tender procedure. The project which was around 80 million, commenced its activities in November 2016.

In addition to main building constructions, there were several mini-projects to address infrastructure activities of the auditorium building, namely auditorium chairs, auditorium light and sound system, new elevator and the interior development of staff area of the new building. All these activities were started but it was not possible to complete them before 31st December 2016.

In addition to the main project, there were several capital projects as identified in the procurement plan of 2016. However, it was not possible to complete some of these activities due to some practical difficulties as well as due to inadequate staff in the school to carry out activities in parallel. Details are given the following table.

***Table 5.2 - A: Infrastructure Development on 31st December 2016***

| Infrastructure Details | Expected Expenditure – Rs. '000 | Physical Progress | Finacial Progress – Rs. '000 |
|---|---|---|---|
| Canteen & Admin Building Block Phase II | 20,000 | 15% | 20,000 |
| UCSC Multi Purposes Auditorium and Lecture Halls | 235,000 | 92% | 235,000 |

# 6. FINANCE

The draft finance report was prepared and submitted to auditors on time and based on their feedback and comments, the revised final accounts of UCSC was submitted to the Auditor General with the approval of the Board of Management. In this section, we describe and analyse the financial status of the document.

## 6.1 RECURRENT EXPENDITURE

Since the treasury funds are not adequate to meet the requirements of day to day operations of the organizations, the generated income has become a vital source of income to carry out the operations of the institute. The main business of the institute is to manage the internal undergraduate programmes, for which 5 days out of 7 days of a week are allocated. Hence, the bulk of recurrent expenditure is directly related to activities linked to undergraduate programme. In 2016, the recurrent expenditure of Rs. 269,490/= has been spent per student basis.

In general, the recurrent expenditure is 353 million out of which 147 million was the generated income of UCSC. In other words, 48% of the total recurrent expenditure is from UCSC generated income. The major classification of recurrent expenditure is given below in the table (Recurrent Expenditure).

***Table 6.1 - A: Recurrent Expenditure***

| Subject | 2015 | 2016 |
|---|---|---|
| Personal emoluments | 148,642 | 163,513 |
| Travelling | 1,060 | 535 |
| Supplies | 6,489 | 5,818 |
| Maintenance | 5,400 | 5,186 |
| Contractual Services | 35,810 | 38,103 |
| Other | 109,831 | 122,219 |
| **Total** | **307,052** | **335,374** |
| Government Allocation | 122,300 | 160,000 |

Due to government decision on increasing the salary, the personal emoluments (salaries of staff) were increased significantly in 2016. Since government allocation for recurrent expenditure was not enough to cover the personal emoluments, the management was very careful and controlled all the other expenses as you see when you compare figures of 2016 with 2015 in the table of Recurrent Expenditure.

## 6.2 CAPITAL EXPENDITURE

There is a significant improvement of capital expenditure in 2016 due to the construction of two buildings of the UCSC. At the same time, other capital expenditure also has been increased significantly according to the requirements of utilizing new spaces. Although the government agreed to finance two building construction projects in both 2015 and 2016, the agreed funds for 2015 were not issued from the government. Therefore UCSC generated funds were used to carry out planned activities. However, the government released adequate funds for the capital requirement in 2016. Due to unexpected construction issues, we did not pay around Rs. 50.0 million committed payments before 31$^{st}$ December 2016. However, all these committed payments will

be settled in the first half of next year. In general, the capital expenditure per student is Rs. 262,390/=. Details of capital expenditure are given in the table below (Capital Expenditure).

***Table 6.2 - A:***

| Subject | 2015 | 2016 |
|---|---|---|
| Acquisition of furniture & Office Equipment | 16,875 | 28,741 |
| Acquisition of Machineries | - | 8,782 |
| Acquisition of Building & Structures | 81,906 | 146,406 |
| Other | 4268 | 15,759 |
| **Total** | **103,049** | **199,680** |
| Government Allocation | 43,042 | 245,000 |

## 6.3 CONSULTANCY AND RESEARCH PROJECTS (EXTERNALLY FUNDED)

All projects are classified as consultancy projects or research projects of the UCSC. Consultancy projects were carried out to provide a service to an outside party. 30% of consultancy projects are contributed to the UCSC development fund in addition to 5% was allocated to cover utilities and other recurrent expenditure of project.

Research projects funded by external parties, are carried out based on the agreed objectives. The outcome is usually shared by both institutes and they are published in joint papers. 10% of research projects are charged as the administration charges and the balance is utilized according to the budget prepared by the Principal Investigator. All budgets were submitted to finance and management committee for the approval.

All software development projects are considered to be consultancy type projects. They were managed in the unit called Software Development Unit under the Computer Service Centre. Since the staff was not enough to carry out those software development projects, the service of Theekshana Company was obtained to complete them. Based on the budgets, the payment was done for those projects. In the past few years (2014 and 2015), Theekshana company was considered as an internal entity of UCSC based on the interpretation of government auditors. However, this decision was revised since UCSC does not have any legal authority to establish any company. Therefore, the accounts of Theekshana Company were not combined with the UCSC.

***Table 6.3 - A: Financial Progress of Projects*** ***Rs. 000'***

| Type of Project | Budgeted | Invoiced | Received | Expenditures |
|---|---|---|---|---|
| Research Projects (locally funded) | 3,554 | 3,554 | 3,554 | 3,554 |
| Research Projects (foreign funded) | 1,490 | 1,490 | 1,490 | 1,490 |
| Consultancy & Software Dev. Type of Projects | 6,229 | 6,229 | 2,609 | 3,729 |
| **Total** | **11,273** | **11,273** | **7,653** | **8,773** |

### Service Assignments Given by the Government Authorities

According to different parliament acts and government requirements, UCSC was asked to offer services from time to time. The Centre for Digital Forensic (CDF) was supposed to carry out investigations based on the court orders or directives received from other parties. A nominal fee is paid for some assignments but the actual cost incurred by the UCSC is higher than the income of service assignments.

## 6.4 ANALYSIS OF FINANCIAL SUPPORT AND THE GENERATED INCOME

The support of the Government is given only for undergraduate studies but this support is not enough to meet all the requirements of the undergraduate programme. Funds are directly collected from the students of postgraduate and external degree programmes to carry out respective academic activities. Consultancies, projects and service type of assignments given by external parties are charged by issuing invoices. Following table describes the budgeted and received income from different activities of UCSC.

| Major Income Sources | Budgeted | Invoiced | Received | Deficit / Surplus |
|---|---|---|---|---|
| Undergraduate Studies | 7,120 | 7,120 | 7,095 | (25) |
| Postgraduate Studies | 74,300 | 76,740 | 76,740 | 2,440 |
| Consultancies | 7,500 | 6,354 | 6,354 | (1,146) |
| External Degree | 63,300 | 60,041 | 60,041 | (3,259) |
| Other | 52,000 | 51,454 | 51,454 | (546) |
| **Total** | **204,220** | **201,709** | **201,684** | **(2,536)** |

### 6.4.1 FINANCIAL PERFORMANCE ANALYSIS

***Table 6.4.1 - A:***

| Subject | Formula | Exp. per Student |
|---|---|---|
| Recurrent Expenditure per Student (RE) | RE / Total No of Student strength | 269,490 |
| Capital Expenditure per Student (CE) | CE Total / No of Student strength | 262,390 |
| | **Total** | **531,880** |

# 7. UCSC HIGHLIGHTS 2016 – VISIBILITY, EVENTS AND ACTIVITIES

UCSC Web site is the main portal to communicate the key highlights of the institute. In 2016, UCSC web site is completely restructured considering the main theme of the University of Colombo. It has a dual domain URLs, namely **http://www.ucsc.cmb.ac.lk** and **http://www.ucsc.lk**. All major activities and events occurred monthly are informed to the Board of Management and the Senate of the University of Colombo to maintain the visibility of progress and issues of institutes. UCSC website is also linked with major social network to update activities of the organization. Following table shows the key highlights of 2016 with respect to each month.

## *7.1 MONTHLY HIGHLIGHTS*

### 7.1.1 ACTIVITIES, EVENTS AND PROGRAMMES

| Month | Activities |
|---|---|
| **January, 2016** | • End of Undergraduate examinations mid-January 2016<br>• Industry placement presentation end –January 2016<br>• Discussion with the UGC Vice-Chairman about UCSC administration and External Degree Centre<br>• Discussion with the Secretary Ministry of Higher Education & Highways to obtain the cabinet approval for the canteen building and a possible land for the BIT office<br>• Registration of new undergraduates students started<br>• The Visit of the Professor Athula Ginige to initiate the next phase of the Govi Nena Agriculture project |
| **February** | • Undergraduate inauguration of the new batch held on 10th February followed by orientation programme for two weeks.<br>• Masters welcome held on 13th February 2016<br>• Orientation of the Masters programme on 13th February 2016<br>• 25th February - Felicitation programme for the teachers by passed out students of 2015. |
| **March** | • Institutional Review of the University of Colombo was completed and It was announced A grade for the university of Colombo.<br>• External Degree Centre - BIT office was opened at the No. 6, Swarna Road, Colombo 6<br>• Annual Medical Camp – UCSC Staff |
| **April** | • Freshers' Tournament - 2016 was held on 29th March and the UCSC won the 2nd place.<br>• Inaugurated a new training programme funded by KOICA to train government |

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| | analyst and CID officials on 6th April<br>• Aluth Avurudu – Bakmaha Ulla organized by new students on 29th April. |
| **May** | • IEEE Students organized SLT Reid Cyber wars gaming event inviting other state university students on 12th May.<br>• 3rd Year Students organized a Padura event on 13th May.<br>• Staff contributed well to the donations of the University of Colombo for the flood victims organized by the Vice Chancellor on 20th May.<br>• Students organized an event called "UCSC Shana Yathra" to donate to the people in a village in Chilaw who were affected by floods on 26th May. They have distributed around 2.5 million worth goods among those people while carrying out other community assistance activities.<br>• ISACA student chapter organized a conference named "ifest2k16" inviting other university students on 29th May.<br>• A special ceremony was held at UCSC for Professor GN Wikramanayake, former Director for the appreciation of his service as the Director for the last six years on 30-05-2016. The Vice-Chancellor, Dean Science, Senior Academics and all other staff members of UCSC participated in the event to thank Prof. Wikramanayake.<br>• Revised website of the UCSC based on the University of Colombo template was launched by the Vice-Chancellor/UOC on 30-05-2016. |
| **June** | • 1st June, the new Director, Prof. K. P. Hewagamage assumed duties<br>• New Deputy Director, Dr. D. A. S. Athukokarale assumed duties<br>• New Head of Department for Information Systems Engineering, Dr. M. D. J. S. Goonatillake assumed duties.<br>• 8th June, Memorial Bana for the late Prof Samaranayake<br>• on 22nd June, Poson Bakthigeetha programme with students and staff<br>• on 24th June, 5 staff members received staff development centre awards<br>• on 28th June, Selection Test for the Bachelor of Information Systems was held<br>• on 30th June, Prof Saman Halgamuge started his activities as the visiting professor by conducting a workshop for the staff. |
| **July** | • Interviews for permanent academic positions were carried out on 1st July and 4th July.<br>• Batch photo of passed out students was taken on 1st July<br>• Semester 1 – Academic year 2016 undergraduate programmes were completed.<br>• Examination for the semester 1 was started but it was postponed due to non-academic staff trade union action<br>• Applications for Masters in Computer Science and Master of Information Technology were called from prospective students |
| **August** | • Due to trade union actions, it was decided to postpone all statutory meetings due to practical reasons<br>• Undergraduate Convocation was held on 14th August at BMICH |

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| | • Applications for Masters programme for 2017 on 19th August 2016<br>• KOICA Training Programme was held on 22nd August at UCSC Board Room<br>• BIT Diploma Award Ceremony was held on 24th August at NAT<br>• All undergraduate examinations which were postponed due to trade union actions, we completed on 31st August 2016 UCSC. |
| **September** | • ICTer2016 conference was held on 1st and 2nd September at the hotel Jetwing Blue s, Negombo<br>• ICTer2016 Workshops were held on 3rd September at UCSC<br>• BIT Convocation was held on 13thSeptember at BMICH, where 262 students were graduated<br>• UCSC Annual Staff get together and training sessions were held on 15th-17th September 2016<br>• "Paaramitha 2016" – Annual Blood Donation Campaign was held on 22nd September 2016<br>• Pre-IEEE Xtreme Programming Competition 1.0 was held on 24th September 2016 |
| **October** | • UCSC Sports Day (organized by 1st and 2nd Years students) was held on 1st October.<br>• Going down Party (Final Year students and the Graduated batch) was taken place on 1st October.<br>• 1, 2,8,9,22,23 Oct. BIT Semester. 4, 6 and 2 Examinations were held Colombo on 1st, 2nd, 8th, 9th, 22nd and 23rd October in Galle, Kandy and Jaffna<br>• IEEE Day (IEEE Student Branch of UCSC celebrated IEEE day under the theme "Innovations and Emerging Tech" parallel to the global celebrations) was held on 4th October.<br>• iHack 2.0 - a 24 hour software development competition organized by the UCSC ISACA Student Group in partnership with Direct FN and Mubasher was held on 8th and 9th October.<br>• Yong Computer Scientist (YCS) Jointly organized a competition with FITIS and Ministry of Education on 12th and 13th October and the evaluation was carried out by the UCSC staff<br>• – "Romenthem" - Freshers' Welcome was held on 15th October at New Arts Theater<br>• Selection Test for Masters Degrees was held on 16th October -at UCSC and Technical College Maradana<br>• UCSC Career Fair where 25 companies interviewed final year students was held on 17th October http://careers.ucsc.lk/<br>• -Workshop on Developing UCSC Strategic Plan for 2017-21 was conducted on 18th and 19th October.<br>• IEEE Extreme Programming Competition was held on 22nd and 23rd October.<br>• Vaani Vizha (Tamil Students Annual Celebration) was held on 28th October.<br>• The Janashakthi Full Option Appathon Challenge 2016 – Youth competition based on the Next Gen Smart Tech Challenge - UCSC team "WhileLoop" champions was held on 29th October.<br>• Online test for the National School Software Competition (NSSC) organized by the CSSL and Ministry of Education was conducted on 30th October at the UCSC with the help of UCSC staff and students. (20 school students from various parts of the country took part in this competition to showcase their programming |

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| | talents).<br>• UCSC Won three awards in three categories "m-Content", "Inclusion & Empowerment", and " Culture & Tourism" at the "e-Swabhimani Awards 2016" organized by the ICTA on 31st October with the aim of recognizing excellence in digital content creation |
| **November** | • ACM Colombo Chapter was formally established on 19th November.<br>• –The Ministry of Education organized award ceremony for YCS and NSSC competition on 25thNovember and was carried out by the UCSC.<br>• Masters Selection interviews were held on 20thand 27thNovember.<br>• Optitex Company visited UCSC on 29th November to demonstrate their 2D/3D<br>• Delegation from Malaysia - (Royal Highness Prince of Perlis, Malaysia Tuanku Syed Faizuddin Putra IbniTuanku Syed Sirajuddin Jamalullail, who is also the Chancellor of the Universiti Malaysia Perlis (UNIMAP), accompanied by the His Excellency Wan Zaidi Wan Abdullah, High Commissioner of Malaysia, Mr. Azhar Mat, Head of Chancery of the High Commission of Malaysia, Dato' Professor Dr. ZulAzhar Bin Zahid Jamal, Vice Chancellor of the University Malaysia Perlis (UNIMAP)) visited UCSC on 30th November. |
| **December** | • BIT final project viva and dissertation evaluation (Continued on 10th, 11th, 17th & 18th December) were held on 3rd December.<br>• Postgraduate Convocation, University of Colombo was held on 6th December.<br>• Guest Lecture on "Protecting Data-in-use" by Dr. Wee Keong Ng who is Associate Chair (Research) of the School of Computer Science & Engineering, Nanyang Technological University, Singapore was held on 6th December –.<br>• The presentation Dr. Dhammika Amaratunga (Princeton University) on "Analysis of high-dimensional data: Issues and methods" in relation to Bioinformatics was held on 8th December.<br>• Announce - Call for applications – Bachelor of Information Technology Academic Year 2017 was started on 9th December.<br>• The registration of new intake of Computer Science and Information Systems Degree Programmes –for the year 2015/2016 was started on 16th December.<br>• Undergraduate Examinations for the second semester of academic year 2016 was commenced on 19th December.<br>• Published Eligible candidates for Masters Degree were published on 19th December.<br>• The first workshop on developing syllabus of Masters Degree Programme was held on 22nd December.<br>• Annual carol services organized by Catholic students of UCSC took place on 23rd December. |


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