Important

This handbook is compiled with information received up to June 2010.
It is hereby informed that this handbook is only for general information and is not for official purposes.
Any information contained herein should be confirmed by reference to the relevant authority.

For the latest version of the handbook please visit our website

http://www.ucsc.cmb.ac.lk/ug/index.html

July 2010

Undergraduate Handbook
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Vision
To create new knowledge, sustain a culture of critical inquiry and foster a spirit of service and commitment to the nation

Mission
To produce men and women of the highest technical competency with high ethical standards and social accountability, capable of creative, analytical and independent thinking, contributing to national development
Message from the Director

The University of Colombo School of Computing (UCSC) is a Centre of Higher Learning setup under the University of Colombo for achieving excellence in Research and the dissemination of knowledge in Computer Science and Information and Communication Technology in Sri Lanka. Far too much of what passes off as education in this modern ‘market driven’ economy is little more than an accumulation of facts for facing examinations. At the UCSC we believe such efforts only scratch at the recall of data level of Bloom’s taxonomy of the kinds of human learning. This data arranged in context becomes useful information. Information interpreted correctly becomes knowledge. However, it is the appropriate use of knowledge, which becomes wisdom. It is towards helping our students realize this that we strive at the UCSC in keeping with the motto of the University of Colombo, Wisdom Enlightens.

It is also the case that such enlightening, brings with it to us the freedom to be humble, as were the truly great minds of the scientific revolution. In the words of Isaac Newton, “If I have seen further than others, it is by standing upon the shoulders of giants”. It is this same humility that enabled Albert Einstein to pay possibly the greatest of tributes ever paid to a fellow human when he said of Mahatma Gandhi, “Generations to come will scarce believe that such a one as this walked the earth in flesh and blood”.

In striving for excellence in education, the UCSC has always attempted to foresee the needs of the country as a whole. Introducing Computer Science as a field of specialization as early as in 1985, we produced Software Engineers for the emerging software industry in Sri Lanka in addition to making fit the best of these for research and higher education. We also responded to the ever increasing demand for IT professionals by the ICT industry at the end of the millennium by introducing the first external IT degree in the form of the BIT in 2000. Beginning in 2005, we are also taking the bold initiative of introducing a BICT programme to fill a widely felt gap in the industry for Information System Engineers – in recognition of the maturing of the field of Computer Science and Information and Communication Technology.

The UCSC is at a stage of its evolution in which it has been able to secure high donor confidence as evidenced by no less than ten simultaneous foreign funded projects underway during 2005. It also has gained the recognition from the local ICT industry with many partners willing to take part in student placement, collaborative research and job placement activities. Holding down the most qualified set of academics and researchers in the field, the UCSC is currently engaged in mobilizing its vast research potential in order to clearly distinguish itself from the rest of the ICT education industry in Sri Lanka and the region as a whole.

At the end of the day however, we need to remind ourselves of those very wise words of Mahatma Gandhi: “The things that will destroy us are: politics without principle; pleasure without conscience; wealth without work; knowledge without character; business without morality; science without humanity; and worship without sacrifice”.

To this end, I wish that each student walking into our corridors, would at the end of their 3 or 4 year stay at the UCSC be able to say, that this indeed was the most constructive investment of time they have ever made in their life. I have no doubt then, that they would go onto become a valuable asset to the ICT industry in this country, and to Sri Lankan society at large.

Prof. G N Wikramanayake
An appreciation of the founder Director of the UCSC
Vidya Jyothi Professor V. K. SAMARANAYAKE (1939 – 2007)

Vanniarachchige Kithsiri Samaranayake was born on the 22nd of May 1939 and had his early education in Hewavitharana Vidyalaya, Rajagiriya where his father was the principal and his mother was a teacher. He entered Ananda College in 1948 and then Royal College through a competitive examination in 1950.

Prof. V.K. Samaranayake entered the University of Ceylon to read for a degree in Science in 1956 having completed his secondary education at Ananda and Royal Colleges. He was selected to do a Special degree in Mathematics and obtained a First Class Honours degree in 1961.

Prof. Samaranayake entered the Imperial College, London in 1963 on a state scholarship for his postgraduate studies and then moved on to University College, London to complete his PhD in record time before returning home in 1966. At the age of just 35, in recognition of his great scholarship, the University of Colombo appointed him to his highest Academic position of Professor of Mathematics in 1974. He was subsequently appointed Senior Professor of Mathematics in 1984, invited to be the first Senior Professor of the newly created Chair in Computer Science in 1996 and appointed Emeritus Professor of the University of Colombo after his retirement in 2004. In recognition of which the University honoured him with the title Professor Emeritus of Computer Science, and conferred on him the Degree of Doctor of Science, Honoris Causa at its subsequent Convocation.

As it is not possible to confine the appreciation of his enormous service to the nation and his illustrious career as an academic and an administrator to a few pages, some of the significant milestones of his illustrious career are outlined below.

• 1987 - He was appointed as Chairman of the Computer and Information Technology Council of Sri Lanka (CINTEC), which he served for 12 years. During this period he was also tasked with chairing the Presidential Task Force on Integrated R & D in Science & Technology 1997-2000 and the National Y2K Task Force in Sri Lanka 1998-2000.

• 1992 - He initiated the participation of Sri Lankan school children in Computer Programming, by committing CINTEC funds for sending teams of 4 to the International Olympiad in Informatics (IOI). Through his great foresight, to date, Sri Lanka has been able to secure 3 Gold, 5 Silver and 13 Bronze medals at successive IOI’s with a record of never returning without a medal since 1994.

• In 1995 he was instrumental in setting up intensive discussions with Sri Lanka Telecom, to commence Internet services in Sri Lanka. These discussions eventually brought LEARN and Internet connectivity to Sri Lanka in 1996.

• He was instrumental in organizing the IT industry at large by forming associations for Computer Training Organizations (ACTOS), for the Software Industry (SLASI), and for the Computer Vendors (SLCVA). With foresight he also created the umbrella organization for these associations in the form of the Federation of IT Industry Associations (FITIA) which recently hosted the largest ICT event in Sri Lanka – the ASOCIO ICT Summit. He has also been involved with the well known ICT Trade Exhibition organization, INFOTEL whose Chairmanship he has held from 1997. INFOTEL has in turn been the major funding organization for many industry and human resource development efforts in the field of ICT.
In 1984 he had his first major breakthrough with the full backing of the then Chancellor, Dr. P. R. Anthonis and Vice Chancellor Prof. Stanley Wijesundera in the form of a substantial JICA grant from the Government of Japan. Almost simultaneously, the UNDP provided some much needed research funding to build up Academic Faculty in Computer Science at the University of Colombo. Starting with the Statistical Unit and the Statistical Computing and Data Processing Centre within the Mathematics Department, Prof. Samaranayake first convinced the University to set up a Department of Statistics and Computer Science in 1985, the first of its kind in Sri Lanka, and then went onto create the first School in the university system in the form of the University of Colombo School of Computing (UCSC) in 2002.

Commencing in the year 2000, Prof. Samaranayake initiated another major milestone in ICT HRD in Sri Lanka with the launch of the innovative Bachelor of Information Technology (BIT) External Degree programme which provides an ultimately scalable mechanism for affordable ICT education in a way that incorporates the private sector – a feat no other degree programme has been designed to do. Apart from the prestige of a University of Colombo degree to students, the BIT programme also has the indirect but most desirable effect of standardizing ICT education in an era where commercialism is threatening the quality of education.

Prof. Samaranayake’s involvement in the scientific community has been no less impressive with the Sri Lanka Association for the Advancement of Science (SLAAS) electing him to the office of General President in 1994 and the National Academy of Sciences of Sri Lanka electing him as a Fellow of the Academy, its Vice President and finally its President for 1998-99.

His quest for capacity building in ICT human resources can most clearly be seen in his single handed contribution in this area at the University of Colombo – making it the showcase among the entire university system in Sri Lanka and beyond. Investing in human resource development in ICT also involves huge risks – that of aid in the brain drain. This is where Prof. Samaranayake’s broadness of vision and almost unreasonable trust, especially in the case of training Faculty in the University, is most clearly seen. Commencing with the meager funding resources extended by donors in the 1970’s in an era when the developed countries themselves were just getting into the area of serious ICT human resource development, Prof. Samaranayake commenced his quest of directing all local and foreign funding to develop ICT Human Resource development at the University of Colombo.

In recognition of his towering contribution in the field of ICT in the country, he has been bestowed with several national awards in the form of the Lions’ Club Gold Medal for the Most Outstanding Citizen of Sri Lanka in 1986, the Vishva Prasadini Award in 1996 on the occasion of the 80th birthday of the then Prime Minister Sirimavo Bandaranaike and the Vidya Jyothi Presidential Award in 1998.

Prof. Samaranayake’s characteristic skill at excelling in multiple tasks simultaneously is also demonstrated by his continuing involvement in research, being named a Fellow of the Kennedy School of Government at Harvard University, USA in 2001, Research Fellow at the National Centre for Digital Government at Harvard University, USA in 2003 and the impending appointment as Visiting Fellow in the Digital Vision Programme at Stanford University, USA in 2005. A particularly high point of this role was when he simultaneously chaired two International Conferences while playing a key role in the whole of the Government declared Information Technology Week in December 2004. He also continued as Chairman of the International Information Technology Conference till his untimely demise.
The UCSC
A brief history
The University of Colombo School of Computing (UCSC) is an integral part of the University of Colombo, and has a history of over 80 years as the leading higher educational institution in the country. Begun as the Ceylon University College affiliated to the University of London in 1921 at the same location as the present campus, it became the University of Ceylon in 1942. Although the University was to be shifted to Peradeniya commencing 1952, the high demand for university education resulted in there being two equal heirs to the history, traditions and assets of the University of Ceylon, namely the present University of Colombo and the University of Peradeniya.

The University of Colombo has developed into one of the leading universities in Asia having had several transitions since the sixties. The University has exploited its advantageous location in Colombo and has derived much from the traditions of the Colombo Medical College that began in 1870 and the University College of 1921. The University of Colombo now consists of Five Faculties, One School, Four Institutes and several Centers in addition to the Sri Palee Campus.

Teaching of Computing in the University of Colombo first started way back in 1967 by the setting up of the Statistical Unit as a separate unit of the Department of Mathematics. Later with the initial guidance of Professor V.K Samaranayake, the statistical unit was enhanced as the Statistical Consultancy and Data Processing Service Centre. This had paved the way to many future developments. By 1985, this Centre had grown into the Department of Statistics and Computer Science (DSCS). The major function of this department was to conduct special degree programmes in Statistics and in Computer Science. The DSCS offered Computer Science specialization programme, produced only 40 students per batch, was anyway not sufficient to meet the growing demand in the field of Computer Science.

In 1997 a batch of 50 students were taken directly to study Computer Science, through the University Grants Commission, but by this time it was realized by many that Computer Science subdivision of the DSCS need to expand as a separate unit to meet the growing demand in the field of Computer Science. As a result, in the year 2001, the DSCS separated into two departments namely Department of Computer Science (DCS) and Department of Statistics (DS).

The Department of Computer Science (DCS) identified its own limitations of being operated in the restrictive framework of a Faculty and at the same time it understood the importance of having a strong industry relationship for exploiting the future growth potential. The visionary leadership of Professor V.K. Samaranayake understood the importance of a strategic merger between the Institute of Computer Technology (ICT) and the Department of Computer Science (DCS) of the University of Colombo that had the expert knowledge in the field of computer science.
The ICT had a strong relationship with industry at the same time a high institutional profile among foreign donor agencies. ICT also enjoyed much more autonomy than a typical Faculty in their business operations making it easy for receiving large amounts of resources from JICA, SIDA and other donors.

Finally, the University of Colombo School of Computing (UCSC) was formed on 01st of September 2002 by the merger of the existing Department of Computer Science (DCS) of the Faculty of Science and the Institute of Computer Technology (ICT) both of the University of Colombo.

Prof. V.K Samaranayake became the founder Director of the UCSC, whose proactive thinking and visionary leadership set the path to success in every endeavour undertaken by the UCSC. Furthermore the UCSC has been able to position itself as a Centre of Excellence in Computing and IT in the university system of Sri Lanka.

After the retirement of Prof. V.K Samaranayake in 2004 Dr. Ruvan Weerasinghe serviced a the Director of the UCSC for six years.

**Organizational Structure of the UCSC**

The primary activity of the University of Colombo School of Computing is to deliver quality undergraduate degree programmes in Computer Science and Information and Communication Technology to students admitted via the UGC. The syllabi and the course contents are regularly reviewed and updated in order to maintain the quality of the programmes.

Undergraduate academic programmes are directly funded by the government. The UCSC has three Academic Departments and the academic staff is allocated to these Departments based on their specialization and teaching expertise.

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  Academic Departments
    Information Systems Engineering (ISE)
    Computation and Intelligent Systems (CIS)
    Communication and Media Technologies (CMT)
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In addition to the above three departments the UCSC has 5 Centres established under the UCSC Ordinance of 2002. Each centre is organized and managed under separate Coordinators. Centre Coordinators plan the expansion paths in relation to each centre. The five centres are:

- Computing Services Centre (CSC)
- External Degrees Centre (EDC)
- Advanced Digital Multimedia Technology Centre (ADMTC)
- Professional Development Centre (PDC)
- e-Learning Centre (e-LC)
Computing Services Centre (CSC)

Computing Services Centre is the main consultancy arm of the UCSC. It conducts System Design and Development, System Recommendation, Software Project Consulting, Recruitment Testing, Tender Evaluation, Feasibility Study and Acceptance and Testing for Computer Hardware and Software. It also conducts tailor-made training programmes for the organizations in the private and public sector. CSC has conducted training programmes for over 12,000 personnals.

For more details visit the website: http://www.ucsc.cmb.ac.lk/centre/csc

External Degrees Centre (EDC)

The main purpose of establishing the External Degrees Centre is to offer external degree programmes to widen the higher educational opportunities of the students who have been unsuccessful in meeting the competitive eligibility criteria for admission to the state university system. University of Colombo School of Computing realized that demand for high quality ICT professionals was far exceeding the number provided by the state universities.

As a result of it UCSC commenced BIT degree programme in the year 2000 and has so far produced 801 graduates and almost all have been absorbed by the ICT industry. Minimum entry qualification for this programme is three passes in GCE Advanced Level.

For more details visit the website: http://www.bit.lk

Advanced Digital Media Technology Centre (ADMTC)

ADMTC was a successful result of project type technical support extended by the Government of Japan through Japan International Cooperation Agency (JICA) to the University of Colombo for capacity building in human resources in Information Technology. The centre also supports the development of e-learning course contents that could be used by internal and external undergraduates and the general public. The UCSC has received a state of the art Multi Media Laboratory, Digital Studio and Network capabilities under this project.

For more details visit the website: http://www.admtc.lk
Professional Development Centre (PDC)

Professional Development Centre was set up for keeping a close liaison with IT industry and for improvement of the academic programmes through industry partnership thereby enhancing the quality of the undergraduates and staff. The programmes conducted by PDC primarily concentrate on three aspects:

- Improving professional skills of the staff and the students
- Industrial placements for undergraduates
- Promoting inter-cultural harmony

Mission of the PDC is to inculcate the excellence in education and other aspects of life.

For more details visit the website: http://www.ucsc.cmb.ac.lk/pdc

e-Learning Centre (e-LC)

The UCSC intends to position itself as the nation’s leading e-Learning promoter by introducing new methods of learning and teaching using Information and Communication Technology. Building awareness among the general public about virtual learning environments with the collaboration of other relevant parties can be considered as the task of this centre.

For more details visit the website http://www.ucsc.cmb.ac.lk/elc
Strengths of the UCSC

Reputation and Recognition
The University of Colombo has positioned itself as one of Sri Lanka’s pioneering universities in the world academic arena. The UCSC inherits much of this recognition being a School attached to the University of Colombo.

The UCSC offers two internal Degree programmes, one external Degree programme and two Masters Degree programmes. Acknowledging our academic excellence, the British Computer Society has given full exemption from the academic requirements of Membership of BCS to our former Four year Computer Science (Special) degree. This has been the only such Computer Science Degree Programme in Sri Lanka to have received full accreditation. This reflects the fact that our curricula are up to internationally recognized standards.

Location
The University of Colombo School of Computing is situated in the heart of Colombo as part of one of the leading metropolitan universities in the country with easy access for student and staff alike.

Highly Qualified Academic Staff
Competency of the academic staff is one of the crucial factors in determining the quality of the educational process. The UCSC presently has 1 Professor, 17 Senior Lecturers with PhD qualifications, 12 with Masters Degrees and another 12 with Bachelors level honors Degrees. None of the other universities have such a human resource in IT/CS, one which has been built up over a long period of time with foresight and long-term investment. As such, the UCSC can definitely claim a competitive advantage over its competing universities in this respect.

Computing Facilities
The UCSC is in possession of a large number of laboratories equipped with modern and up to date computers enabling it to deliver successful computer science study programmes. The UCSC also has a few dedicated laboratories for external courses that serve as cushion during the peak demand times. A fully equipped digital studio at the Advanced Digital Multimedia Technology Centre, a state of the art Data Centre at the Network Operations Centre and a 14 node high performance computing cluster delivering over 15Gflops are a few specialized resources available.

Friendly Educational Environment
The UCSC wants to foster an environment, which is conducive to students to carry out their study programmes effectively. In this regard Computer Science and the Information and Communication Technology programmes are well-balanced having a mix of academic and enhancement courses. “Respect difference, foster diversity” is an unwritten slogan we preach in promoting harmony in a multicultural society. The traditional demarcation among academic staff, administrative staff and the student is not to be seen at the UCSC.
Strong Industry-University Relationship
The Professional Development Centre of the UCSC attempts to promote a lasting relationship with key players of the IT industry. This gives the UCSC an advantage over other universities in fulfilling the industrial training requirements of undergraduate students.

Postgraduate Studies and Research

Masters Degrees
The UCSC conducts part time Masters Degrees in Computer Science (MCS) and IT (MIT). MCS is a specialization course for good degree holders in Computer Science and IT, and MIT is a conversion course for graduates in non Computing disciplines.

Postgraduate Research leading to MPhil / PhD
The UCSC has several active research groups in the fields of wireless networks, distributed systems, natural languages, cryptographic systems, graphics and image processing, GIS databases and e-learning and others, most with foreign funding, open to capable researchers and working on appropriate and cutting edge technology.

For more details visit the web site http://www.ucsc.cmb.ac.lk/pg
Registration and Student Facilities

Registration
The University Grants Commission determines the eligibility of the students to be admitted to the respective undergraduate courses. Thereafter the UCSC informs students to register for respective courses by filling in the necessary forms and paying the relevant fees at the registration.

Fee Structure

<table>
<thead>
<tr>
<th>Type of Fee</th>
<th>Amount</th>
<th>When to pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration Fee</td>
<td>Rs 300.00</td>
<td>At the beginning of each Academic Year</td>
</tr>
<tr>
<td>Medical Fee</td>
<td>Rs 50.00</td>
<td>At the beginning of each Academic Year</td>
</tr>
<tr>
<td>Student Union Fee</td>
<td>Rs 50.00</td>
<td>At the beginning of each Academic Year</td>
</tr>
<tr>
<td>Student ID Fee</td>
<td>Rs 100.00</td>
<td>During the 1st Year Registration only</td>
</tr>
<tr>
<td>Amalgamated Club Fee</td>
<td>Rs 125.00</td>
<td>At the beginning of each Academic Year</td>
</tr>
<tr>
<td>Refundable Lab and Library Deposit</td>
<td>Rs 1,000.00</td>
<td>At the 1st Year Registration only</td>
</tr>
<tr>
<td>Examination Fee (Repeaters only)</td>
<td>Rs 25.00</td>
<td>Per paper at the beginning of the Semester</td>
</tr>
</tbody>
</table>

It is important to note that students are required to re-register at the beginning of each academic year by paying the Registration fee, Medical fee and Amalgamated club fee prevailing at that time on or before the date specified. Failure to do so may result in the cancellation of the studentship and the rights to claiming Bursary or Mahapola payments and right to vote at the election of the student union.

Orientation Programme
University of Colombo School of Computing has designed a special orientation programme to improve the English Language skills and basic computer awareness skills of the selected students who come from various parts of the country representing a wide cross section of society. Every student is required to sit for the Placement Test in English Language. Hands on experience in computing is also given in small groups.

Post evaluation of the orientation programme is done at the completion of the programme to ensure the primary objective of placing every student on an equal ground in terms of the computer and English literacy is achieved.
Hostel Facilities
It is extremely difficult to provide hostel accommodation to all students of the UCSC within close proximity to the University premises due to difficulty of paying very high commercial rates for rented apartments. Presently the men’s hostels are situated at Kirulapone Road, Colombo 05. The Women’s hostel is situated at Baseline Road, Colombo 08, providing accommodation to the First year students.

Students are required to abide by the rules and the regulations set by the UCSC when accepting accommodation. Failure to abide by the rules will result in the student being subjected to disciplinary action.

All matters of inadequacy or failure in relation to hostel facilities should be brought to the notice of the Sub warden.

Financial Assistance: Bursary and Mahapola
The University Grants Commission and the Ministry of Trade and Consumer Affairs select the eligible students for the Mahapola Scholarships. The UCSC notifies the students who are qualified to receive Mahapola Scholarships thereafter.

The UCSC selects the eligible students for the bursary payments according to the UGC Commission Circular No: 856 & 900. Selected students are notified through a public notice.

<table>
<thead>
<tr>
<th>Mahapola Scholarship</th>
<th>Bursary Assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merit Scholarship</td>
<td>Rs 2550</td>
</tr>
<tr>
<td>Ordinary Scholarship</td>
<td>Rs 2500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bursary Assistance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Bursary</td>
<td>Rs 2000</td>
</tr>
<tr>
<td>Half Bursary</td>
<td>Rs 1900</td>
</tr>
</tbody>
</table>

4th Year Scholarship
This scholarship is offered to encourage the students who are unable to read through the fourth year due to financial difficulties. One scholarship for the value of Rs 2000.00 per month is offered for 10 months. Students who register for the fourth year Computer Science Programme can apply at the beginning of the academic year for this scholarship.

Other Scholarships
Several scholarships are also offered by the industry. Available scholarships are from the following organizations.

Aeturnum Lanka, Assette, IFS, John Keells Computer Systems, Millennium IT, Navantis IT, Ridgecrest Asia, and Zone 24x7.
Library Facilities
The library has a large collection of 9700 Books. The majority of these materials are latest editions. The library has a reference area with a seating capacity for 136 users and it also provides an electronic catalogue. Further, it has a collection of e-books [CDs], thesis and dissertations. Library opening hours are as follows.

Weekdays  09.00 - 18.00 (Till 20.00 Hours during study leave and Examination periods)
Weekends   9.00 am-6.00pm (Specially for postgraduate students)

Mrs. Asoka Rajapaksa
Senior Staff Assistant / Library
Contact No. 011 2-158939

Laboratory Facilities
There are over 200 machines, both standalone and server based thin clients, made into clusters of 40 or 20 machines in each Lab. Linux and Microsoft Windows operating environments are available with software development environments such as Open source IDE’s, Eclipse for Java, Netbeans and .Net for Rapid Applications Development. Most of the Laboratories are open during the semester and only from 08.00 to 17.00. However based on the need some laboratories may continue to operate until 19.00. Laboratory facilities are usually not provided during study leave & vacation.

Student Discipline
The UCSC expects its student community to be well disciplined. Resources and facilities provided are liable to be withdrawn, if they are found to be misused. Storing of unauthorized material, hacking, email spamming or software piracy is strictly prohibited in the Labs. Disciplinary action will be taken according to the UCSC regulations on such matters. Where necessary, such instances will be reported to law enforcement agencies. Students violating examination rules will be punished separately. These punishments include cancellation of exam results and suspensions from academic work for specified period.

Sports Facilities
Sports facilities, such as, the Gymnasium and Tennis Courts are made available by the Department of Physical Education of the University of Colombo. Those facilities can be accessed by the UCSC students. Furthermore, students can participate in the events organized by the University.

Ms. K S S Gunasekara,
(Acting) Director Physical Education, University of Colombo
Contact No: 0112-502405.
Healthcare Facilities
The Health Centre is located in close proximity to the UCSC and facilities are available for students for out patient treatment. A Dental Unit is also attached to this health centre.

Dr K D I Vasudewa  
M.B.B.S (Ceylon) D.F.M.(Colombo )

Contact No: 011-2584985

Industry Placement and Career Guidance
All 3rd year students of the CS and ICT programmes will be placed in the industry during their 2nd semester, based on competitive open interviews. For those who are unable to obtain such placements, the UCSC will make every effort to place them within the UCSC.

The Professional Development Centre through its numerous links with the IT industry is in a position to provide guidance on job opportunities for passing out graduates. The Career Guidance Unit offers workshops, seminars and short courses on Career Skills Enhancement. Career counseling and job placements are among the other services offered by the Unit. The services of the Career Guidance Unit are also open to the students of all the faculties including the UCSC.

Dr. (Mrs.) S M K D Arunatilake  
Coordinator, Professional Development Centre 
UCSC  
Contact No. 011-2158988

Dr. G D S P Wimalarathne  
Director, Career Guidance Unit  
University of Colombo.  
Contact No. 011-2504748

Student Counseling
Every student has the opportunity of seeking advice and assistance from the student counsellors in relation to academic matters as well as personal matters. Additionally, the service of a professional counsellor are also available to the students, under the direction of student counsellors. All academic staff members have been assigned two specific time slots per week on Thursdays (10.00 – 12.00 noon), Friday (2.00 – 4.00 P.M) for student interaction and the students are encouraged to meet the staff during these time periods to obtain guidance in academic matters.
Student Counsellors

Dr. H.L. Premaratne
Dr. T.N.K. De Zoysa
Dr (Mrs). Y. Ekanayake
Dr (Mrs). A.T. Dharmaratne

Contact No: 011215-8972/3/4/6/7

Professional Counsellor Mrs. A. H. T. N. Thusanthika

Societies and Student Union
As per the by –laws for internal undergraduates, elections will be held at the beginning of each academic year to elect office bearers to the student union of the UCSC. Acceptance of nominations and election dates will be notified through a public notice. As a tradition, office bearers of the UCSC Student Union are appointed unanimously through the consensus of the students.

Medical Certificates
All students who are unable to appear for a theory and/or practical component of an examination due to medical reasons should submit a Medical Certificate issued by the Chief Medical Officer (CMO)/University Medical Officer (UMO) of the University of Colombo or a valid Medical Certificate recommended by the CMO/UMO if they seek relief.

Such students should make a request in writing (by telegram to the Director, UCSC or e mail to: medical@ucsc.cmb.ac.lk) for relief indicating the reasons for such absence within 3 (three) working days from the date of absence for such examination.

Students are advised to strictly adhere to the following guidelines in this regard:

1. (a) A student who falls ill during a period of examination of the UCSC should report to the Chief Medical Officer (CMO)/University Medical Officer (UMO) of the University of Colombo. The CMO/UMO will examine the student and issue a Medical Certificate, if necessary.

(b) The Medical Certificate issued by the CMO/UMO with the proof of informing the Director/UCSC should be forwarded to the Deputy Registrar/Examinations of the UCSC along with the attached application form within 7 (seven) days from the last date of recommended leave.
(2) (a) If a student who resides outside Colombo city limits finds it difficult to report to the CMO/UMO due to seriousness of the illness, he/she should get treatment from the nearest Government Medical Institution.

(b) In such instances, he/she should follow the procedure given below with regard to submission of medical certificates:

(i) All Medical Certificates other than those issued by the CMO/UMO with the proof of informing the Director UCSC should be forwarded to the CMO/UMO along with the attached application form. These should then be submitted to the Deputy Registrar/Examinations of the UCSC with the recommendation/observation of the CMO/UMO within 7 (seven) days.

(3) (a) Medical Certificates submitted after the above deadline and/or without the recommendation/observation of the CMO/UMO will not be accepted.

(b) The following categories of Medical Certificates will only be accepted by the CMO/UMO for consideration:-

(i) Medical Certificates issued by a Government Hospital/District Medical Officer
(ii) Medical Certificate issued by a Private Medical Practitioner only in the case of leave for less than five days;
(iii) The CMO/UMO may request the following documents as further proof of illness:-

   • Receipt of payment for the Medical Certificate from the Government Hospital;
   • Prescriptions of the medicines taken;
   • Reports of the blood tests etc.
   (If the required documents are not submitted the application may be rejected.)
Degree Programmes

The Structure of the Degree Programmes
The students who are admitted to the UCSC may read for a degree programme in Computer Science or in Information & Communication Technology. The UCSC offers a 3 year programme and a 4 year programme in each of these disciplines. Initially all students are enrolled for a 3 year degree programme. Students who achieve a minimum overall GPA of 2.5 in the first three years and satisfy all the relevant requirements stipulated in the By – Laws and regulations are given the opportunity to enroll for a 4 year Degree Programme.

The academic programmes of the UCSC are based on a semester system with 2 semesters per academic year and operate on a course basis. The UCSC offers two types of courses namely Academic Courses and Enhancement Courses. Academic courses provide subject knowledge and enhancement courses provide knowledge on a wide range of disciplines that are required for a holistic education. Each year the UCSC offers a number of mandatory and optional courses. Each course is assigned a credit value. A credit is equal to 15 hours of lectures or 30 hours of practical or an equivalent combination of lectures and practical. A student is required to register for a minimum of 30 academic credits and possibly a prescribed number of enhancement credits per year. A student who obtains at least a “C” grade in each course totaling a minimum of 10 credits in an academic year is eligible to be registered for the next academic year.

Bachelor of Computer Science Degree Programme
The 3-year and 4-year Computer Science Degrees are named the Degree of Bachelor of Computer Science, BCSc., and the Degree of Bachelor of Science in Computer Science, BSc., (Computer Science) respectively.

Medium of Instruction
Lectures, Tutorials, Practical and Examinations will be conducted in the English medium.
## Courses offered in the Computer Science Degree Programme

### Year 1

#### Semester – I

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<tr>
<th>Course Code</th>
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### Semester – I

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### Semester – II

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# Year 3
## Semester – I

| Course Code     | Course Name                                                                 | Mode       | Credits |
|-----------------|----------------------------------------------------------------------------|------------|
| SCS3003/CS3003  | Computer Graphics and Image Processing                                     | optional   | 2        |
| SCS3004         | Networking Technologies                                                    | optional   | 2        |
| SCS3005         | Datawarehousing/Data Mining/Information Retrieval                          | optional   | 3        |
| SCS3006/CS3005  | Neural Computing                                                           | optional   | 2        |
| SCS3007         | Professional Issues                                                        | Compulsory | 2        |
| SCS3008         | Compilers and Automata Theory                                               | optional   | 3        |
| SCS3009         | Middleware Architectures                                                    | optional   | 2        |
| SCS3010         | Human computer Interaction                                                  | optional   | 2        |
| SCS3011/CS3006  | Cryptography Systems                                                       | optional   | 2        |
| SCS3012         | Introduction to Virtual Reality                                             | optional   | 2        |
| SCS3013/CS3004  | Computer Systems Architecture                                               | optional   | 2        |
| SCS3014         | System Design for Internet                                                  | optional   | 2        |
| SCS3015/CS3007  | Multimedia Technologies                                                     | optional   | 2        |
| SCS3016         | Group Project                                                              | optional   | 3        |
| SCS3019/ICT3012 | Instructional Design                                                        | optional   | 2        |
| SCS3018/ICT3010 | Software Localization                                                       | optional   | 2        |
### Year 3
#### Semester – II

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### Year 4
#### Semester – I

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<td>Wireless Ad-Hoc and Sensor Networks</td>
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<td>SCS4018</td>
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### Year 4

#### Semester – II

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<td>SCS4005</td>
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<td>SCS4008</td>
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<td>SCS4012</td>
<td>Communications Networks</td>
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<td>SCS4013</td>
<td>Applied Robotics and Embedded Systems</td>
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<td>SCS4011</td>
<td>Natural Language Processing</td>
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Bachelor of Information and Communication Technology Degree Programme

The 3-year and 4-year ICT Degrees are named the Degree of Bachelor of Information and Communication Technology, BICT., and the Degree of Bachelor of Science in Information and Communication Technology, B.Sc.,(ICT) respectively.

Medium of Instruction

Lectures, Tutorials, Practical and Examinations will be conducted in the English medium.

Courses offered in the Information and Communication Technology Degree Programme

Year 1
Semester – I

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#### Semester – II

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### Year 2
#### Semester – I

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# Year 3
## Semester – I

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**Year 3**
**Semester – II**

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<tr>
<td>ICT 4003</td>
<td>Contemporary topics in Information Systems</td>
<td>Compulsory</td>
<td>2</td>
</tr>
<tr>
<td>ICT 4004</td>
<td>Applied Informatics</td>
<td>Compulsory</td>
<td>2</td>
</tr>
</tbody>
</table>

#### Optional Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Mode</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT 4005</td>
<td>Advanced Media Management</td>
<td>Optional</td>
<td>1</td>
</tr>
<tr>
<td>ICT 4006</td>
<td>Mobile Computing</td>
<td>Optional</td>
<td>2</td>
</tr>
<tr>
<td>ICT 4012</td>
<td>Wireless Ad-Hoc and Sensor Networks</td>
<td>Optional</td>
<td>2</td>
</tr>
<tr>
<td>ICT 4008</td>
<td>Business Process Automation</td>
<td>Optional</td>
<td>2</td>
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</tbody>
</table>

### Year 4
#### Semester – II

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Mode</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT 4001</td>
<td>Final Year Project</td>
<td>Compulsory</td>
<td></td>
</tr>
<tr>
<td>ICT 4009</td>
<td>Contingency Planning / Risk Management</td>
<td>Compulsory</td>
<td>2</td>
</tr>
<tr>
<td>ICT 4010</td>
<td>Research Seminar</td>
<td>Compulsory</td>
<td>3</td>
</tr>
</tbody>
</table>
## Optional Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Mode</th>
<th>Credits</th>
<th>Lecture</th>
<th>Practicals</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT 4011</td>
<td>Advanced Concepts in Software Design and Development</td>
<td>Optional</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>ICT 4013</td>
<td>Advance Database Systems</td>
<td>Optional</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>ICT 4014</td>
<td>Enterprise Modelling</td>
<td>Optional</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT 4007</td>
<td>Advanced Business Information Systems</td>
<td>Optional</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Evaluation Procedure

Each academic course is evaluated by written examinations (mid-semester and end of semester), continuous assessments, assignments, reports, presentations, oral examinations or a combination of such methods of evaluation. In the evaluation each course is assigned a percentage score. This percentage score is then converted to a Grade according to the scheme given below. Also, each grade is associated with a Grade Point Value (GPV) as shown in the table. These GPV values are used to compute the Grade Point Average of a student as described in the following sections.

<table>
<thead>
<tr>
<th>Range of percentage score</th>
<th>Grade</th>
<th>Grade Point Value</th>
<th>Attainment</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 - 100</td>
<td>A+</td>
<td>4.00 *</td>
<td>Superior</td>
</tr>
<tr>
<td>80 – 89</td>
<td>A</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>75 - 79</td>
<td>A-</td>
<td>3.75</td>
<td></td>
</tr>
<tr>
<td>70 - 74</td>
<td>B+</td>
<td>3.25</td>
<td>Meritorious</td>
</tr>
<tr>
<td>65 - 69</td>
<td>B</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>60 - 64</td>
<td>B-</td>
<td>2.75</td>
<td></td>
</tr>
<tr>
<td>55 - 59</td>
<td>C+</td>
<td>2.25</td>
<td>Adequate</td>
</tr>
<tr>
<td>50 - 54</td>
<td>C</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>45 - 49</td>
<td>C-</td>
<td>1.75</td>
<td></td>
</tr>
<tr>
<td>40 - 44</td>
<td>D+</td>
<td>1.25</td>
<td>Minimal</td>
</tr>
<tr>
<td>30 - 39</td>
<td>D</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>20 - 29</td>
<td>D-</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>00 - 19</td>
<td>E</td>
<td>0.00</td>
<td>Failure</td>
</tr>
</tbody>
</table>

- When calculating classes, A+ will be given a Grade Point value of 4.25.
If a student is absent for an evaluation, a grade of E and zero marks is given unless the student provides valid evidence accepted by the UCSC within a prescribed period of time. A student is considered to have ‘completed’ an academic course if he/she has received a Grade in respect of the evaluation of such course. If an academic course has several components, e.g. a theory component and a practical component, then, he/she is considered to have ‘completed’ such course if he/she has received a Grade in respect of each such component. A student is considered to have ‘completed’ an Enhancement Course if his/her attendance at such Enhancement Course and the prescribed course activities if any, is not less than a prescribed minimum. All courses completed by a student are considered for the award of the degree.

Grade Point Value (GPV) and Grade Point Average (GPA)

The Grade Point Value obtained by a student in respect of each course (contributing to the GPA) for which he/she has registered is multiplied (weighted) by its Credit Value to obtain the Grade Point Value of each such Course. The Grade Point Average (GPA) of a student is then computed as the weighted average, rounded to the second decimal place, of all the Grade Point Values of the contributing academic courses ‘completed’ by the student. It should be noted that some courses do not contribute to the GPA. However, the completion of such courses not less than a prescribed minimum is required to obtain the Degree.

\[
\text{GPA} = \frac{\sum (\text{Grade Point Value obtained for the course} \times \text{Credit Value of the course})}{\text{Total Number of Credit Values of GPA contributing courses completed by the student}}
\]

Examinations

All examinations are conducted and completed within the given semester except for courses having practical or research projects. Duration of the theory examinations, practical and oral examinations are determined by the UCSC at their discretion. The duration of each examination and the rubric of the examination are informed during the respective semester.

Examination Offences

Students are strongly advised against committing plagiarism in the submission of assignments and thesis reports. In the case of other written examinations, the possession of unauthorized material is considered as an offence punishable under the University of Colombo rules on conduct of examinations.

Maximum Duration of the Degree

All students should complete their degrees within a specified time period. The maximum period allowed for the 3-year degrees and the 4-year degrees will be 12 semesters (6 years) from the first registration. Students will be allowed to repeat courses subject to the above constraint.
Registration for the Optional Courses
If optional courses are offered in a particular year, students should register for such courses. Registration will commence one week prior to the start of the academic year. Optional courses having less than a specified number of students may not be offered, and students who have registered for such courses should opt for other available courses based on their preferences. No changes in courses will be permitted after 2 weeks of the commencement of the semester. Admission cards to sit for semester examinations will be issued using the registration list. Repeat student has to pay the examination fee at the time of reregistration.

Attendance
Students are strongly advised to attend all lectures and practical classes of all courses that they select to follow. If a student is unable to sit for a theory or a practical examination on medical reasons, the student should provide a valid medical certificate issued or certified by the Chief Medical Officer of the University of Colombo. (See page 11). If such a medical certificate produced by a student for an evaluation is approved by the UCSC, then such student shall not be assigned any grade for the examination concerned but will be considered as appearing for an evaluation for the first time in the next instance provided that he/she appears for an evaluation at the immediately following opportunity provided by the school.

Repeat Examinations
A student obtaining a grade below C may re-sit the course examination (if available) for the purpose of improving the grade. In the event of a student obtaining a lower grade while repeating, he/she is entitled to the previous grade. However, in calculating the award of a class in the final degree, maximum contribution from a repeated course is considered to be a grade of “C”.

Degree awarding criteria
To be eligible for the 3 year Degree, a student must

(a) Complete a minimum of 90 Academic Credits with at least 30 Academic Credits from each of the three years.
(b) Complete the number of Enhancement Credit Value Equivalents prescribed in respect of each year.
(c) Obtain a minimum GPA of 2.00.
(d) Obtain a grade not inferior to a C for the third year Industry Project / Industry Placement.
(e) Complete the relevant requirements within six academic Years.
To be eligible for the 4 year Degree, a student must

(a) Complete a minimum of 120 Academic Credits with at least 30 Academic Credits from each of the four years.
(b) Complete the number of Enhancement Credits Value Equivalents prescribed in respect of each year.
(c) Obtain a minimum GPA of 2.50.
(d) Obtain a grade not inferior to a C for the third year Industry Project / Industry Placement.
(e) Obtain a grade not inferior to a C for the fourth year Individual Project and Complete the relevant requirements within six Academic Years.

**Degree with Classes and award of Honours**

Students qualifying for the award of the 3 or 4 year degree by completing all the relevant requirements within a period of three and four consecutive academic years respectively shall also qualify for a class as follows.

**First Class** – for obtaining a minimum overall GPA of 3.50

**Second Class (Upper Division)** - for obtaining a minimum overall GPA of 3.25

**Second Class (Lower Division)** - for obtaining a minimum overall GPA of 3.00

If a student is eligible to be awarded the three year Degree, the requirements for the award of such Degree have been fulfilled by him/her within a period of three consecutive academic years beginning with the first year of registration., and is eligible to be placed in the First Class, Second Class (Upper Division) or the Second Class (Lower Division), such student shall be entitled to receive such Degree with Honours, and the title of such Degree shall be “Honours Degree of Bachelor of Computer Science / Bachelor of Information & Communication Technology (as the case may be). Such a student shall be free to use the qualification ”BCSc (Honours)” or “BICT (Honours)” at the end of his name.

If a student is eligible to be awarded the four year Degree, the requirements for the award of such Degree have been fulfilled by him/her within a period of four consecutive years beginning with the first year of registration, and is eligible to be placed in the First Class, Second Class (Upper Division) or the Second Class (Lower Division), such student shall be entitled to receive such Degree with Honours, and the title of such Degree shall be “Honours Degree of Bachelor of Science (Computer Science) / Honours Degree of Bachelor of Science (ICT)” Such student shall be free to use the qualification “BSc(Computer Science) (Honours) or BSc (ICT) (Honours)” at the end of his name.
If a student is eligible to be awarded the three year Degree or the four year Degree as the case may be, but has not fulfilled the requirements for such award with Honours, the title of such Degree shall be “Degree of Bachelor of Computer Science / Information & Communication Technology” or “Degree of Bachelor of Science (Computer Science) / (Information & Communication Technology)” respectively, and such student shall be free to use the qualification “BSc(Computer Science ) or BSc (ICT)” respectively at the end of his/her name.

**Option of reverting to a 3 year Degree**
A student reading for the 4 year degree programme may request the award of the 3 year degree foregoing the 4 year degree, upon satisfying the requirements for the award of the 3 year degree. This request should be made in the course of the fourth academic year or within 2 weeks of the fourth year course results being released by the UCSC.

**Academic Transcript**
A student completing a degree may request a transcript. The transcript includes the grades but not the actual marks obtained for all registered courses together with their respective credit values and GPA, and all completed enhancement courses.

**Awards & Prizes**
Please contact AR/Academic & Publications for details

<table>
<thead>
<tr>
<th>Best performance in 3 year degree</th>
<th>CS Degree Programme</th>
<th>ICT Degree Programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - year</td>
<td>4 - year</td>
<td>3 - year</td>
</tr>
<tr>
<td>4 - year</td>
<td></td>
<td>4 - year</td>
</tr>
<tr>
<td>Best performance in 3 year degree</td>
<td>Virtusa Academic Excellence Award</td>
<td>*Motorola Academic Excellence Award</td>
</tr>
<tr>
<td>*Motorola Academic Excellence Award</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Best performance in 4 year degree</td>
<td>-</td>
<td>Prof. Mohan</td>
</tr>
<tr>
<td>Munasinghe Award</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Best Industrial Training</td>
<td>-</td>
<td>David Peiris Group Gold Medal</td>
</tr>
<tr>
<td>Best Final year Project – 4year</td>
<td>-</td>
<td>CINTEC Award</td>
</tr>
<tr>
<td>Most outstanding graduate of the</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>UCSC</td>
<td>Prof. V.K Samaranayake Award</td>
<td></td>
</tr>
</tbody>
</table>

29
Academic staff and Academic Support Staff

**Director**
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**Deputy Director**
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*Research Interests: Middleware Architectures, High Performance Computing, Natural Algorithms, Computer Networks /*

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Dip. In Acc

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Vacant

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