# UNIVERSITY OF COLOMBO

# SCHOOL OF COMPUTING

## STRATEGIC PLAN

## 2024 – 2028

## FOREWORD

Our future is mapped out in the strategic plan of the University of Colombo School of Computing (UCSC). It gives a framework for how we will accomplish our objectives and aims. The UCSC Strategic Plan 2024–2028 outlines the plan for achieving the intended undergraduate, postgraduate, and external degree programs as well as the general administration operations between 2024 and 2028. UCSC is the center of excellence for teaching and learning in computing. Together, the Director, Deputy Director, Heads of Departments, Centre Coordinators, and Administrative Officers evaluated the six goals established in accordance with UCSC's vision and mission and came up with goals and strategies to achieve them. The success of the plans would be then measured using specific actions and Key Performance Indicators (KPIs) with performance targets for each year. The existing plan for the year 2024 becomes the Action Plan for 2024, and the KPIs will be reviewed every three months to see if the performance goals established for each KPI have been met.

Last but not least, I would like to extend my sincere gratitude to everyone who helped with the creation of the UCSC Strategic Plan 2024–2028. I also firmly believe that UCSC will work as a team to achieve the performance targets, which will ultimately result in the achievement of the stated goals.

The plan was developed over the course of several months, and it involved input from a wide range of stakeholders. We listened to our students, our staff, and our partners, and we incorporated their feedback into the plan. The plan is ambitious, but I believe it is achievable. I am very confident that, by working together, we can achieve our goals and make UCSC a leader in Computing Studies. I am excited to begin implementing the plan, and I look forward to sharing our progress with you in the years to come.

z

# INTRODUCTION

## The University of Colombo School of Computing

The University of Colombo School of Computing (UCSC) was established on 1st September 2002 with the guidance of Late Vidya Jyothi Emeritus Professor V K Samaranayake, the founding Director of UCSC, as the first higher learning centre in Computing in Sri Lanka by merging the institute of Computer Technology and the Department of Computer Science of the University of Colombo. 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 November 2002 (GZT NO. 1262/32) and amended to include the Centre for Digital Forensics on 22nd July 2011 (GZT NO. 1715/32). With the mission of being a global leader in computing education, advancing the frontiers of knowledge through teaching, learning and Research, the UCSC has gradually become an inspiring organization and a centre of excellence to work and study with a continuous flow of new knowledge and ideas in the domain of Information Technology. According to the Ordinance of UCSC, the University of Colombo School of Computing consists of three academic departments, namely the Department of Computation & Intelligent Systems (CIS), Department of Communication & Media Technologies (CMT) and Department of Information Systems Engineering (ISE). 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 and external), postgraduate programmes, and extension programmes..

The six centres are Advanced Digital Media Technology Centre (ADMTC), Computing Services Centre (CSC), External Degrees Centre (EDC), e-Learning Centre (eLC), Professional Development Centre (PDC) and Centre for Digital Forensics (CDF). The introduction of the external IT degree in the form of the Bachelor of Information Technology (BIT) was one of our huge achievements because this is the first IT degree in Sri Lanka with the most training resources and experiences in the field of ICT which offers opportunities for those who are unable to enter a University and for those who are non-graduates but already work in the field of Information Technology to obtain a degree in ICT at a reasonable price compared to many other ICT degree programmes.

As a leading higher learning centre in Sri Lanka, UCSC has provided its students with a favorable environment for the studies comprising students' laboratories, research laboratories, a fully wired building complex for the internet access, a well-equipped library with books, journals, CDs, internet access to e-journals, a network operating centre, new lecture halls furnished with modern furniture, a new auditorium with the latest technologies and many other facilities. The academic, administrative and other staff of the UCSC play a significant role in uplifting the standard of the institute. We have highly qualified academic staff including more than 20 senior lecturers with doctoral level qualification and they have graduated from renowned universities around the world.

Since the initiation, the UCSC has been striving for excellence in all we do and work actively to develop our capacity to generate and share knowledge empowering the staff and the students to achieve their aspirations.

## HISTORICAL PERSPECTIVE

The University of Colombo started teaching Computing in 1967 by setting up the statistical unit as a separate unit of the Department of Mathematics. Later with the initial guidance of Late Vidya Jyothi Emeritus Professor V K Samaranayake, the statistical unit was enhanced as the Statistical Consultancy and Data Processing Service Centre setting the starting point to many future developments. By 1985, this Centre was expanded into the Department of Statistics and Computer Science (DSCS). Conducting special degree programs in Computer Science was the main function of this department. DSCS offered specialized programs in Computer Science and was able to produce merely 40 students per batch and it was not sufficient to meet the increasing demands of the field of Computer Science. In 1997, a batch of 50 students was directly taken to study Computer Science through the University Grants Commission. However, the number of students selected for the degree programme was not sufficient and it was realized by many that the Computer Science subdivision of the DSCS needed to be expanded as a separate department to meet the growing demands of the field of Computer Science. Therefore, in 2001, it was decided to separate DSCS into two departments namely the Department of Computer Science and the Department of Statistics.

The Department of Computer Science identified its own limitations in operating in a restrictive framework of a faculty and also the importance of having a strong industrial relationship in exploiting future growth potentials. Simultaneously, the University realized the importance of a strategic merger between industry focused institute of Computer Technology (ICT) and the more theoretically oriented Department of Computer Science of the University of Colombo. The ICT had a strong relationship with the industry at the same time a high institutional profile among foreign donor agencies. The ICT also enjoyed much more autonomy in their business operations making it easier for receiving large amounts of resources from Japan International Cooperation Agency (JICA), Swedish International Development Agency (Sida) and several other donors.

Accordingly, in 2002, the merger between the institute of Computer Technology and the Department of Computer Science of the University of Colombo gave birth to the UCSC with the direction and the management of Prof. V.K Samaranayake whose proactive thinking set the path to achieve success in several succeeding endeavors of the UCSC. This merger between the institute and the department brought together over 20 academic staff with 15 PhDs and a large number of postgraduate qualified IT specialists as well as all the resources of the two institutions under a single entity. Thus in 2000, the first external IT degree in the form of BIT was introduced as a response to the demands of the IT professionals of the industry. Meanwhile in 2005, a new information system program named as BICT was introduced to fill the widely felt gap for the Information System specialists in the industry. With these achievements, UCSC was able to gain the confidence of the high donors which ultimately opened the path to carry out foreign funded projects during the time periods of 2005-2010. Meanwhile UCSC was able to gain the recognition of the local ICT industry and they were willing to take part in students' placement, collaborative Research and job placement activities.

# UCSC TODAY

The institute currently consists of three departments, six centres and eight management divisions.

## THREE DEPARTMENTS

The academic matters and the degree programmes of UCSC are handled by the following three departments.

### Department of Computation & Intelligent Systems (CIS)

Department of Computation & Intelligent Systems (CIS) consists of permanent academic staff members who have a direct interest in computer Intelligent Systems. Most of these staff members teach courses of undergraduates as well as postgraduate programmes at the UCSC. Dr. C.I. Kappitiyagama is the Head of CIS. More details are given in the website of UCSC (https://ucsc.cmb.ac.lk/department-of-computation-and-intelligent-systems/).

### Department of Communication & Media Technologies (CMT)

The Department of Communication & Media Technologies (CMT) consists of permanent academic staff members who have a direct interest in computer graphics. Most of these staff members teach courses of undergraduates as well as postgraduate programmes at the UCSC. Prof. T.N.K. De Zoysa is the Head of Department. More details are given on the website of UCSC (https://ucsc.cmb.ac.lk/department-of-communication-and-media-technologies/).

### Department of Information Systems Engineering (ISE)

The Department of Information Systems Engineering (ISE) consists of permanent academic staff members who have a direct interest in information engineering. Most of these staff members teach courses of undergraduates as well as postgraduate programmes at the UCSC. Prof. M.G.N.A.S. Fernando was the Head of the Department till 31st May 2023 and appointed Mr. W.V. Welgama as the Head of the ISE with effect from 1st June 2023. More details are given in the website of UCSC (https://ucsc.cmb.ac.lk/department-of-information-systems-engineering/).

# UCSC TODAY

## SIX CENTRES

### Advanced Digital Media Technology Centre (ADMTC)

In August 2000, the Government of Sri Lanka requested the Government of Japan to conduct a technical cooperation on the Multimedia Technology Training and Development Center Project. At the institute of Computer Technology (ICT) of University of Colombo, where the proposed project should take place, project-type technical cooperation (Sri Lanka Computer Center Project) was implemented for the three years from April 1987, with the objective to train computer engineers (analyst programmers) able to develop software using general-purpose computers and to play a leading role in the sector. After the successful completion of the Sri Lanka Computer Center Project, a follow-up cooperation program and an after-care program were also implemented in the ICT. And further training programs for third countries had been carried out from 1993 to 2003.

After the IT Charter was adopted in the Kyushu-Okinawa Summit in July 2000, JICA dispatches a Project Finding Team to Sri Lanka in March 2001 in the field the information technology (IT), in consideration of the importance of offering cooperation in the IT sector.

Given the results of the past technical cooperation and the findings of recent studies, the future direction of technical cooperation to Sri Lanka by Japanese government has been suggested in the way that project to improve an institutional system for capacity building in the IT sector, and to increase a supply of IT human resources both in industries and government agencies, especially to the growing IT software and services industry, be one of the priority areas.

Accordingly, the Advanced Digital Multimedia Technology Centre (ADMTC) was established in order to implement the “Project for Human Resource Development in Information technology through Capacity Building of UCSC” supported by the Japan International Cooperation Agency (JICA) from June 2002 to May 2005.

### Professional Development Centre (PDC)

The Professional Development Centre (PDC) is one of the centers at UCSC, established to keep a close liaison with the IT industry to improve the academic activities through industry-academia partnership. The mission of the Professional Development Center is to produce socially responsible professionals with entrepreneurial skills, leadership qualities, and integrity. The center facilitates training programs to improve the professional skills of both the academic staff and the undergraduates. The PDC invites the IT industry to conduct awareness programs such as current trends in the IT industry, industrial practices, career

paths in various disciplines, and, thus, creating value addition to enhance overall graduate quality and employability.Main activities conducted by the Professional Development Center includes,

- Tech Talks

Industry sessions conducted by professionals on technologies and practices currently being applied in the industry. Students in their 3rd year of undergraduate study are required to participate in these sessions to get an idea of the skills they should acquire before joining the industry.

- Industrial Placement Program

A 5-6 months program, where the students will be placed in different IT companies (registered under UCSC internship program) to give the exposure on the practical use of the knowledge they have acquired from the university curriculum. At the end of this period, students will be evaluated on their progress/achievements.

- Industrial Placement Monitoring Program

A team from UCSC will visit the places where the interns are placed after 2/3 months of their internship. During this visit, UCSC will get the opportunity to monitor the progress of the interns and to discuss any issues from the perspective of the student/company.

### External Degree Centre (EDC)

The External Degrees Centre (EDC) was established in order to coordinate the Bachelor of Information Technology (BIT) as an external degree programme of the University of Colombo.

Assistant Registrar provides the administrative support for the student registration, coordinating examinations and other activities and the EDC Coordinator and Academic Coordinator facilitate the academic activities of the degree programme. There is a dedicated staff to carry out activities of the External Degrees Centre.

## Computing Services Centre (CSC)

The Computing Services Centre, https://ucsc.cmb.ac.lk/csc/, which is the consultancy arm of the UCSC was established in 1990 to provide Consultancy Services to both public organizations as well as private institutes.

The activities undertaken by the CSC are in three folds.

- Carry out Short Term Training Courses
- Provide Software Development and Consultancy Services
  - Tender Evaluation
  - Systems Recommendation
  - Software Project Consulting and Development
  - Feasibility Studies
  - Acceptance Testing for Computer Hardware & Software
- Planning and Conducting of Recruitment Testing

Coordinate outside parties to hire UCSC resources

## Centre for Digital Forensics (CDF)

The Center for Digital Forensics (CDF) was established in 2011 by modifying the ordinance of UCSC by a special announcement since UCSC was requested to support respective law and order institutes in the digital forensic activities.

The primary objective of setting up the CDF is the inability of the law enforcement of Sri Lanka to effectively analyze digital evidence and to present them in court of law even though the legislation of Sri Lanka has made such evidence admissible by law. The key organizations, which are requesting our services, are Courts and Criminal Investigation and Terrorist Investigation Departments. CDF has been providing its services to these organizations with a nominal fee.

In order to enable better law enforcement and preservation of Rule of Law the methods of extracting evidence from digital forms has to be significantly improved. We are well aware that there are a number of state of the art digital forensics toolkits are commercially available. The predominant issue with

these toolkits are the associated costs and non-adaptive nature. Thus the CDF conducts the research and the development of free and open source digital forensics methods and toolkits.

The CDF is well equipped to handle the digital evidence extraction task as we have firsthand experience in dealing with digital crime related activities in Sri Lanka over fifteen (15) years. The CDF routinely advices, trains and collaboratively work with the Government Analyst Department (GAD) of Sri Lanka on compilation of digital evidence related to crimes.

Our investigators and researchers have the required experience and expertise to engage with any complicated investigation. Our expertise is such that international agencies such as KOICA has previously entrusted us to train GAD personnel regarding digital crimes, extraction of evidence form digital media and compilation of such evidence so it is admissible in a court of law.

The direct beneficiaries of the CDF is the personnel in digital crimes investigation departments and we indirectly help the victim to recover losses or gain meaningful solution to the damages in a court of law.

The problem of financial resources is the central issue for the CDF. Most countries of the developing world are debt stricken and do not have efficient means to fund these criminal investigation activities. Therefore we are looking for national and international funding and collaboration opportunities to sustain the investigations and research activities of the Center for Digital Forensics (CDF) of the University of Colombo School of Computing (UCSC).

### e-Learning Centre (eLC)

With more than 18 years of experience, the e-Learning Centre (eLC) provides many services including facilities to conduct undergraduate, postgraduate, external degree programmes to the University of Colombo School of Computing (UCSC). Additionally, eLC supports University of Colombo and other universities/institutes in the country by conducting staff training programmes and online examinations. Besides, the centre provides its expert services to both national as well as international level projects.

In order to carry out these excellent services, eLC has a dedicated staff who have expertise to design, develop and deliver effective learning solutions via e-learning, b-learning and m-learning platforms. Moreover, eLC engages with research and development activities that heighten the expertise of the staff in the field of digital learning.

On behalf of UCSC, e-Learning Centre is willing to undertake any assignments in the domains of e-learning, b-learning and m-learning.

# UCSC TODAY

## EIGHT MANAGEMENT DIVISIONS

### Academic, Publications and Welfare Division

The Academic, Publications and Welfare is the division that provides all the facilities to conduct lectures and other academic activities, especially for Undergraduate students. In the UCSC premises, there are 09 lecture rooms and 09 labs are operated daily for the undergraduate purpose which is located over five floors. Other than that students' presentations and other related activities are to be organized regularly as there are more than 950 students are currently studying in the undergraduate programmes belong to the 1st to 4th year. All these activities are mainly handling by the Academic, publications and Welfare division.

### Postgraduate, Project and Research Division

Postgraduate Division of the UCSC is the administrative office for postgraduate studies and research projects at the University of Colombo School of Computing.

The division supports the students on matters related to the new admissions, renewal of registrations, issuing student ID cards, certification letters, student appeals, learning system (PGVLE/ APGVLE) access and other student services provided by the UCSC.

Postgraduate Division administers the following postgraduate degree programmes at present;

**Taught Master Degree Programmes**

Master of Information Security (MIS)

Master of Computer Science (MCS)

Master of Science in Computer Science (MSc in CS)

Master of Information Technology (MIT)

Master of Business Analytics (MBAnalytics)

Master of Cybersecurity (MC)

**Research Degrees Programmes**

MPhil in Computing Programme

PhD in Computing Programme

**Research Projects and Activities**

The division facilitates academic staff of UCSC to the followings;

- Facilitate Research collaboration with external institutions and maintain records of public-funded/ externally funded research projects
- To manage and maintain records of UCSC funded research projects
- To manage and maintain records of UCSC Research Allocation for R & D
- To manage and maintain records of Research Allowance of academic and administration staff

## Examination and Registration Division

The Senior Assistant Registrar and her staff are constantly engaged in offering services to students for Examination & Registration purposes.

Examinations & Registration Division is located at the 1st floor of East Wing of University of Colombo School of Computing (UCSC) Building Complex.

Only Students who have valid registration of the UCSC are enrolled to evaluate their academic excellence. They will normally be allowed to attend to such activities during working days from 8.30 am. to 4.15 pm.

The UCSC is affiliated to University of Colombo (UoC) for the purpose of awarding degrees. Therefore, the Vice-Chancellor of the University of Colombo is the principal executive officer and the principal academic officer who shall exercise all such powers vested in him by the Senate and the University Council to ensure uniformity and conformity with university standards for awarding degrees for the UCSC students.

### Establishments Division

The Establishments Division is one of the most important divisions in the UCSC and its main responsibility is to recruit qualified staff for academic teaching and research purposes, executing all administrative functions necessary to promote them to higher grades and retaining them in the service in line with the strategic goals of the UCSC and The Establishments Division also assists the management in the development, maintenance and interpretation of human resources management procedures in accordance with the Establishment Code and Rules and Regulations of the University Grants Commission and Administrative policies of the University of Colombo/ University of Colombo School of Computing.

### General Administration Division

General Administration Division plays a vital role in the University of Colombo School of Computing (UCSC) and provides supportive services to the smooth function of the UCSC. Deputy Registrar is leading this division under the supervision of the Director/UCSC. It plays a key role specially in maintaining effective cleaning and security services from external service providers. The Administration division provides several supportive service/s to other divisions in order to carry out main UCSC functions. Out of its purview of the rest of duties and functions, handling Board of Management (BOM), annual report of each year, conducting Board of Survey are the most significant duties for the smooth operation of the UCSC as well as its sustainability. The administration division discharges its responsibilities and functions in line with provisions of Universities Act No. 16 of 1978 and its subsequent amendments, UGC circulars, Treasury Circulars, Ministry of Public Affairs, Financial Regulations, Establishment Code, and decisions of the BOM and Council of UoC. More details of the duties and functions of the Administration division is shown in under the activities.

### Finance Division

As the Finance Division of University of Colombo School of Computing is responsible for developing and implementing sound accounting and budgetary control systems and completing procurement activities in timely and efficient manner, providing timely information and accounts to the Board of Management and other stakeholders, in keeping with transparency and accountability to achieve institute goals.

It shall be the duty of the Deputy Bursar to keep the accounts of the UCSC, receive all monies paid into the institute fund and to credit such monies to the proper Heads of accounts, make all authorized payments by ensuring efficient utilization of those monies in the best interest of the public and prepare Budget Estimates as required by the Treasury, Ministry of Higher Education and University Grants Commission.

### Engineering Division

Responsibilities of the Division are as follows

- Planning, Monitoring and maintaining of physical infrastructure facilities available in the UCSC for the enhancement of the quality higher education of undergraduates, post graduate students and students who are reading external Degree Programs.
- Development of the infrastructure facilities of the UCSC under capital projects.
- Rehabilitation and refurbishment work.
- Designing and executing infrastructure development works in order to create friendly environment for the University community.

### Internal Quality Assurance Cell

The Quality Assurance Cell (QAC) of the UCSC officially commenced its activities in June 2015. Preparation of the Institutional Review Report was the initial task of the QAC, and by 2016, the QAC was equipped with a physical space and other necessary human and material resources. The first board meeting of the management committee of QAC was held on 7th October 2016.

The primary purpose of establishing the QAC is to create a culture that seeks to continually improve the quality of all academic and other activities in the Institute in line with the Quality Assurance and Accreditation Council of the University Grants Commission and Internal Quality Assurance Unit of the University of Colombo.

# UCSC TODAY

## AT A GLANCE

| | | 2022 | 2021 | 2020 | 2019 | 2018 |
|---|---|---|---|---|---|---|
| **Education (Enrolled/Graduated)** | | | | | | |
| Internal Undergraduates | All | 1036 | 997 | 929 | 899 | 857 |
| | In | 335 | 347 | 293 | 297 | 301 |
| | Out | 262 | 267 | 250 | 237 | 244 |
| Science Undergraduates | | 1215 | 1157 | 972 | 1043 | 924 |
| Diploma in Information Technology (DIT) (External) | All | 4101 | 2933 | 2649 | 2373 | 1975 |
| | In | In Progress | 2158 | 2416 | 2142 | 1461 |
| | Out | In Progress | 491 | 575 | 651 | 436 |
| Higher Diploma in Information Technology (HDIT) (External) | All | 899 | 1128 | 1804 | 1634 | 1240 |
| | In | In Progress | 1361 | 1548 | 1365 | 463 |
| | Out | In Progress | 300 | 313 | 274 | 120 |

| | | 2022 | 2021 | 2020 | 2019 | 2018 |
|---|---|---|---|---|---|---|
| Bachelor of Information Technology (BIT) (External) | All | 687 | 1034 | 1248 | 862 | 1230 |
| | In | In Progress | 987 | 1142 | 795 | 187 |
| | Out | In Progress | 207 | 350 | 284 | 177 |
| Postgraduates | All | 493 | 478 | 501 | 426 | 556 |
| | In | 210 | 280 | 270 | 258 | 232 |
| | Out | 57 | 184 | 126 | 185 | 139 |
| Extension Programmes | | 135 | 220 | 347 | 551 | 317 |
| Foreign Students | | 11 | 14 | 14 | | |
| **Research** | | | | | | |
| Research (MPhil/PhD) | All | 20/06 | 23/08 | 28/08 | 35/08 | 35/06 |
| | In | 02/00 | 04/02 | 02/00 | 03/03 | 04/00 |
| | Out | 01/00 | 02/01 | 03/00 | 03/01 | 00/01 |
| Research Projects | All | 20 | 18 | 12 | 21 | 20 |

| | | 2022 | 2021 | 2020 | 2019 | 2018 |
|---|---|---|---|---|---|---|
| | New | 10 | 12 | 02 | 09 | 10 |
| Publications | | 73 | 65 | 61 | 56 | 64 |
| No. of Publications:No. of Academic Staff Members | | 73:53 | 65:61 | 61:46 | | |
| No. of Citations | | 6463 | 6205 | 4829 | | |
| **Consultancy/R&D Projects** | | | | | | |
| Local | | 14 | 13 | 7 | 15 | 15 |
| **Social Responsibility Programmes** | | 1 | 5 | 13 | 11 | 12 |
| **GOVERNANCE** | | | | | | |
| Permanent Academic Staff | All | 52 | 58 | 46 | 47 | 49 |
| | Professors | 08 | 05 | 03 | 03 | 02 |
| | PhD | 29 | 29 | 28 | 27 | 26 |
| | Masters | 09 | 10 | 09 | 06 | 09 |

| | | | | | |
|---|---|---|---|---|---|
| Permanent Academic Support Staff | 14 | 15 | 06 | 06 | 07 |
| Temp Academic Staff (Instructors & Asst. Lect.) | 44 | 32 | 39 | 43 | 30 |
| Permanent Admin and Non-Ac Staff | 62 | 62 | 62 | 52 | 54 |
| Contract Staff (including casual & trainee) | 20 | 25 | 41 | 56 | 35 |
| Research/Project Staff | 36 | 23 | 17 | 16 | 26 |
| **FINANCE** | | | | | |
| Annual Recurrent Expenditure (Millions LKR) | 572 | 555 | 520 | 586 | 488 |
| Treasury Grant (Recurrent) (Millions LKR) | 405 | 392 | 358 | 337 | 199 |
| Treasury Grant (Capital) (Millions LKR) | 54 | 60 | 23 | 69 | 112 |
| Generated Income | 281 | 299 | 249 | 289 | 274 |
| UCSC Contribution to UG (Millions LKR) (Generated %) | 168 (27%) | 22 (5%) | 30 (7 %) | 91 (18%) | 126 (29%) |

| | | | | | |
|---|---|---|---|---|---|
| UCSC Budget (Millions LKR) | 756 | 917 | 903 | 679 | 498 |
| Research/Project (Millions LKR) | 27.71 | 12.8 | 9.3 | 9.8 | 9 |
| Cost per Employee (LKR '000s) per annum | 1,906 | 1,640 | 1,564 | 1,692 | 1,275 |
| Cost per Student (LKR '000s) – Recurrent | 427 | 386 | 507 | 450 | 356 |
| **INFRASTRUCTURE** | | | | | |
| Library Books | 8,758 | 8,780 | 8,825 | 9,073 | 8,948 |
| Computers: staff | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 |
| Computers: students (General students)<br>(Special students) | 1:4<br>1:1 | 1:4<br>1:1 | 1:4<br>1:1 | 1:4<br>1:1 | 1:4<br>1:1 |
| Space Utilization (employee) (sq. m.) | 10.84 | 11.09 | 11.1 | 10.9 | 11.70 |
| Space Utilization (student) (sq. m.) | 3.02 | 4.20 | 3.39 | 4.5 | 4.77 |

# SWOT Analysis

Detailed analysis of the Strengths, Weaknesses, Opportunities and Threats (SWOT) has been conducted based on the set goals prior to formulating the strategies of the organization. Accordingly, the internal factors supporting the organizational goals are considered as strengths, whereas, the factors that hinder its ability are considered as weaknesses. On the other hand, the external factors offering chances for organizational performance are opportunities and which hinder the performance are threats. Meanwhile, the political, economic, socio-cultural and technological environment were taken into account in assessing the external environment. The SWOT analysis is as given below.

## Strengths

**S1 -Historical Advantage**: Computing at the University of Colombo was started in 1967 and the evolution of Computing at the University of Colombo led to the establishment of UCSC. Hence, it is a well-known institute under the University of Colombo both locally and internationally.

**S2 - Location Advantage:** Since it is located in the heart of the City of Colombo, which is the metropolitan of the country, the University of Colombo School of Computing is easily accessible to all undergraduate and postgraduate students as well as other stakeholders. Location advantage has facilitated the UCSC to obtain support from the industry and other external specialists in the domain of Computing.

**S3 –Reputation of the Institute:** UCSC is a well-known brand among stakeholders for its domain of expertise and quality of the output, while the local industry has a high reputation for degrees offered by UCSC. The present employability of graduates and the demand for UCSC programmes are indicators of this reputation. UCSC currently offers internal Undergraduate Degree Programmes, an external Degree Programme, Masters Degree Programmes and Research Degree Programmes of MPhil and PhD levels in Computing.

**S4 -International and National Collaboration:** UCSC and its predecessors were established with direct funding support from several donor agencies. UCSC has conducted several international programmes and successfully completed several projects to obtain

international reputation as the best local University in computing studies. UCSC has several international collaborations in Research and Development with foreign Universities/agencies.

**S5-Research and Development Outcome:** The institute, in the presence of its research specialized academic environment, enhanced by research grants, groups, and centers, produces more than 50 research publications annually and also won several local and international awards for achievements in Research and Development.

**S7-Highly Qualified and expertise of Staff:** The University of Colombo School of Computing has around 50 permanent academic staff members and 37 young and enthusiastic temporary academic support staff members. More than 20 members have PhD level qualification and UCSC has the strongest academic force of Computing in the country. Most staff members have academic and professional training and experience in centers of excellence in overseas as well as in Sri Lanka. Accordingly, UCSC has the potential of conducting Undergraduate and Postgraduate Degree using internal staff without depending on outside resource persons.

**S8- State of the Art infrastructure and modern facilities**: The laboratories, auditorium, library, integrated software systems, blended learning methods and other equipment based on the latest technologies are available for facilitating teaching and learning, research and developmental requirements of the school.

**S9-Financial Strength:** Financial strength has been a significant advantage to maintain the services based on the changing requirements.

**S10-Inclusive Organizational Culture:** A culture of inclusiveness is rooted within the institute as the work environment welcomes and values with respect the diversity of employees. Accordingly, the employees feel they are included in the institute and leads to a healthy work environment.

## Weaknesses

**W1-Inadequate Physical Space:** The basic infrastructure for students and staff has been developed using available space which is inadequate compared to the actual population, which is over 1500. The existing cafeteria does not support the students and the staff population. Limited space for expansion negatively affects many activities as well as restricts starting new initiatives.

**W2-Insufficient Accommodation Facilities for Staff and Students:** Current hostel facilities for students are not adequate and there are no accommodation facilities for UCSC staff.

**W3-Inadequate Academic, Academic Support and non-Academic Staff**. It is very difficult to recruit the necessary staff due to the salary scale and their qualifications.

**W4-Limitation in the Mechanism to Retain and Motivate the Staff:** Inadequate HR reward management practices and processes

**W5-Unsupportive Ordinance:** The current organizational structure and many activities/services do not adequately support the operations of the institute since it was based on the Ordinance approved in 2002.

**W6-Issues in the Established Systems and Procedures:** The absence of established procedures and proper supervision has resulted in delay in many activities.

**W7-Lack of support for encouraging entrepreneurship among students:** Activities with respect to encouraging entrepreneurship among students and to facilitate incubation of new startup companies are poor compared to other universities and faculties.

**W8-Lack of an active alumni association:** UCSC currently lacks an active alumni association.

## Opportunities

**O1-High Demand for Computing skills:** The demand for the placement of both External and Postgraduate students is high.

**O2-National Policies on ICT:** There is an increase in recognition for the ICT sector in the society, which in turn leads to the increase in popularity of UCSC among its stakeholders.

**O3-Possibility of Expanding the UCSC Alumni:** More than 15,000 have graduated from UCSC during the last 30 years, which would pave the way for a formation of an active alumni.

**O4-Demand for Professional Certification in ICT:** UCSC has a very good reputation for short term courses and professional certification. There is a demand for short term courses with quality programs.

**O5-Expanding into new market segments –** With the experience of more than 20 years, UCSC can offer the external Degree Programme even outside the country to address the vacuum for higher education.

**O6-Monetizing research outcomes –** Collaborating with external parties for research outcomes that are value additions to the institute

## Threats

**T1-Difficulty of Attracting and Retaining Talented Staff**: Demand for qualified staff is high from foreign and local Universities and Institutions, especially in the ICT sector. Due to the high regulatory framework imposed for state Universities, there is a difficulty in attracting and retaining the best talents for the institute.

**T2-Affiliated Private Institutes with Foreign Universities:** There is a significant number of private institutes which provide computing degree programmes connected with international universities. Their duration for completion and marketing on accreditation adversely affect the demand for the programmes offered by UCSC.

**T3 - Competition from State Universities for External Degree Programme:** The external Degree programme offered by UCSC in the name of the University of Colombo is the most renowned external computing degree programme in Sri Lanka. However, it could be seen that similar degree programmes have been commenced by others which adversely affects the UCSC.

**T4-Inadequate Government Funding:** With the current economic crisis, UCSC faces an inadequacy of government funding even for essential activities. Hence, UCSC has to postpone some of its activities to the subsequent years.

**T5-Unstable Administrative and Financial Policies of the Government-** Due to the prevailing unstable situation of the country, the government issues regulations on the administrative and financial procedures of the state organizations, frequently, which are applicable for UCSC as well. Therefore, UCSC finds it difficult to initiate some of its activities vital for its development, as the future cannot be predicted.

# Vision Statement

Be a Global Leader in Computing, Advancing the Frontiers of new knowledge through Learning and Research.

# Mission Statement

To advance and enhance computing knowledge, fostering global strategic alliances, promoting cross disciplinary research, producing socially responsible professionals with entrepreneurial skills, leadership qualities and integrity contributing to position the country as a knowledge hub in the region.

# Our values

| | |
|---|---|
| **Academic freedom** | Subject to the norms and standards of the University, there is freedom to |
| **Learner Centeredness and Lifelong Learning and Critical thinking** | The University promotes the learner centeredness and inculcates lifelong |
| **Critical Thinking** | Critical thinking of staff and students. |
| **Creativity, Innovativeness & Exploration** | The University is always ready to find new ventures for development. |
| **Good Governance, Integrity & Ethical Behavior** | Achievements of the University are based on the transparency of its actions |
| **Responsibility & Accountability** | The University operates with a sense of responsibility and accountability. |
| **Diversity & Inclusiveness** | The University continues to operate across a broad spectrum and |
| **Commitment & Competency** | The University staff is highly committed to develop and deliver knowledge |
| **Team Spirit** | The University has a reputation of working as a team and, therefore, |
| **Equal Opportunity** | The University recognizes that its strength and unity comes from providing |
| **Professionalism** | The University expects all students and staff to demonstrate honesty, |

# Goals

Goal No. 01 [Education]: To be a center of excellence in teaching and learning in computing

Goal No. 02 [Research]: Promote research and development in computing

Goal No. 03 [Quality]: Improve the qualities and responsibilities and professionalism of the students and staff

Goal No. 04 [Development]: Enhancement of infrastructure facilities for higher productivity through Development of resource

Goal No. 05 [Good Governance]: Enhance the institutional image through good governance

Goal No. 06 [Social Responsibility]: Contribute to promote the use of ICT in the society

# Proposed Strategic Plan 2024-2028

The Strategic Plan for the period of five years from **2024 to 2028** with performance targets for each year is illustrated as follows. The achievement of the targeted values will depend on the availability of financial, human and other resources.

## Goal No.01 : To be a center of excellence in teaching and learning in computing

**Objective 1.1 : To ensure smooth functioning of the existing undergraduate programs**

**Strategy 1.1.1 : Carrying out the smooth operations of the ongoing undergraduate programs**

| Actions | Responsibilities | Key Performance Indicators (KPI) 2024 | Performance Target | | | | | SDG |
|---|---|---|---|---|---|---|---|---|
| | | | 2024 | 2025 | 2026 | 2027 | 2028 | |
| 1.1.1.1 Conducting academic activities according to the academic calendar and time table | Head/IUD & Coordinators, APW, Exam | % of lectures postponed | <5% | <5% | <5% | <5% | <5% | SDG target – 4.4 |
| 1.1.1.2 Reducing students' absence in examinations | | % of students' absence: % of absence students directed for counselling | 10%:10% | 10%:10% | 10%:10% | 10%:10% | 10%:10% | |
| 1.1.1.3 Providing financial assistance for needy students above government assistance | | No. of students receiving UCSC scholarships & donations: UCSC hostel accommodation | 38:70 | 40:70 | 40:70 | 45:70 | 45:70 | SDG target – 4.9 |
| 1.1.1.4 Implement technological solutions to improve undergraduate programme management processes | | No. of processes automated | 2 | 2 | 3 | 3 | 3 | SDG target – 9.C |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1.1.2.1 Revision of the Curricula and Syllabus considering ACM-IEEE guidelines, industry and R&D trends periodically | Head/IUD & Coordinators, APW, Exam | No. of Curriculum Development and Evaluation meetings | 4 | 4 | 4 | 4 | 4 | SDG targets – 8.3 and 9.5 |
| **Strategy 1.1.3 : Carrying out a systematic review and quality assurance process** | | | | | | | | |
| 1.1.3.1 Reviewing the quality of graduates for the industrial requirements through industry-academia consultative body (IACB) and the IQAC | Head/IUD & Coordinators, QAC | No. of meetings with the internal and external parties | 12 | 12 | 12 | 12 | 12 | SDG target – 16.7 |
| **Objective 1.2 : To ensure smooth functioning of the existing postgraduate programs**<br>**Strategy 1.2.1: Carrying out the smooth operations of the ongoing postgraduate programs** | | | | | | | | |
| 1.2.1.1. Conducting academic activities according to the academic calendar and time table | Head/PRP & Coordinators, PRP, Exam | % of lectures or postponed | <5% | <5% | <5% | <5% | <5% | SDG target – 9.5 |
| 1.2.1.2 Implement technological solutions to improve postgraduate programme management processes | | No. of processes automated | 1 | 1 | 2 | 2 | 2 | SDG target – 9.C |
| **Strategy 1.2.2 : To develop postgraduate degrees according to international guidelines for Computing degrees and national requirements** | | | | | | | | |
| 1.2.2.1 Revision of the Curricula and Syllabus considering ACM-IEEE guidelines, industry and R&D trends periodically | Head/PRP& Coordinators, PRP, Exam | No. of Curriculum Development and Evaluation meetings | 1 | 1 | 1 | 1 | 1 | SDG targets – 8.3 and 9.5 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Strategy 1.2.3 : Carrying out a systematic review and quality assurance process** | | | | | | | | |
| 1.2.3.1 Reviewing the quality of graduates for the industrial requirements through industry-academia consultative body (IACB) and the IQAC | Head/PRP & Coordinators, IQAC | No. of meetings with the relevant internal and external parties | 12 | 12 | 12 | 12 | 12 | SDG target – 16.7 |
| **Objective 1.3 : To enhance the strength and quality of the external degree programme in IT**<br>**Strategy 1.3.1 : Carrying out the smooth operations of the ongoing undergraduate external degree programs** | | | | | | | | |
| 1.3.1.1 Conducting academic activities according to the academic calendar and time table | Head/EEP & Coordinators, EDC, Exam | No. of changes to exam time schedule after publishing | 1 | 1 | 1 | 1 | 1 | SDG target – 4.4 |
| 1.3.1.2 Implement technological solutions to improve the external degreeprogramme management processes | | No. of processes automated | 2 | 2 | 2 | 1 | 1 | SDG target – 9.C |
| **Strategy 1.3.3 Establishing a systematic review and quality assurance process** | | | | | | | | |
| 1.3.3.1 Reviewing the quality of graduates for the industrial requirements through recognized institutes of the BIT programme, IACB and IQAC | Head/EEP & Coordinators, IQAC | No. of meetings with the relevant internal and external parties | 12 | 12 | 12 | 12 | 12 | SDG target – 16.7 |
| **Objective 1.4 : To introduce new programmes to cater to current demands in Computing**<br>**Strategy 1.4.1 : Developing new undergraduate (internal/external) and postgraduate degrees to cater the Government/Industry and global requirements** | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1.4.1.1 Commencing new degree programmes | Heads of IUD, PRP, EEP & Coordinators | No. of new degree programmes commenced | 5 | N/A | N/A | N/A | 2 | SDG targets – 8.3 and 9.5 |
| **Goal No.02 : Promote research and development in computing**<br>**Objective 2.1 : To strengthen existing Research and Development Environment**<br>**Strategy 2.1.1 : Encourage research and development activities** | | | | | | | | |
| 2.1.1.1. Enhance dissemination of research findings | Head/PRP & Coordinators, PRP | Total No. of Publications; (papers published at International/local conferences, symposia, Journals, book chapters and books) | 75 | 80 | 80 | 90 | 100 | SDG targets – 8.3 and 9.5 |
| **Objective 2.2 : To establish and enhance collaborative research interactions**<br>**Strategy 2.2.1 : Facilitate staff and students to collaborate with external parties** | | | | | | | | |
| 2.2.1.1 Establish research links with the industry, universities and research institutions | Head IUD/PRP, Coordinators | No. of MOUs signed | 4 | 4 | 4 | 4 | 4 | SDG target – 17.7 |
| **Goal No.03 : Improve the qualities and responsibilities and professionalism of the students and staff**<br>**Objective 3.1 : To improve the professionalism and entrepreneurship of the students**<br>**Strategy 3.1.1 : Improving professional skills, soft skills and social harmony** | | | | | | | | |
| 3.1.1.1. Conduct Enhancement Lectures and Tech talks | Coordinator/PDC, APW, Student Counsellors | No. of Enhancement LECTURES, Tech talks, events and orientations conducted by UCSC | 40 | 40 | 40 | 40 | 40 | SDG targets – 4.1 and 10.2 |
| 3.1.1.2 Promote students' participation in competitions / activities of | | No. of activities/ events/ competitions organized | 15 | 15 | 20 | 20 | 20 | SDG targets – |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| students' societies /clubs /union | | by UCSC student societies. | | | | | | 3.4 and 10.2 |
| 3.1.1.3 Conduct industrial placement programs and industry visits | | Number of industry visits: online interactions | 200 | 210 | 220 | 230 | 230 | SDG target – 4.4 |
| **Strategy 3.1.2 : Strengthening mechanism to improve entrepreneurship** | | | | | | | | |
| 3.1.2.1 Conduct Courses/ Workshops to promote entrepreneurship | Coordinator PDC, APW | No. of courses/ workshops conducted. | 1 | 1 | 2 | 2 | 3 | SDG - 17 |
| | | No. of competitions/ events conducted and average student participation. | 1:80 | 2:100 | 2:100 | 2:120 | 2:120 | SDG targets – 8.3 and 9.5 |
| **Objective 3.3 : To improve the professionalism of the staff**<br>**Strategy 3.3.1 : Professional skills development of the staff** | | | | | | | | |
| 3.3.1.1 Facilitate Continuing Professional Development of the Staff | DR/Est, Coordinator CSC | No. of events attended by the staff for conferences/ workshops for professional development | 15 | 18 | 18 | 20 | 20 | SDG target - 4.C |
| **Goal No.04 : Enhancement of infrastructure facilities for higher productivity through Development of resource**<br>**Objective 4.1 : To maintain and develop infrastructure facilities**<br>**Strategy 4.1.1 : Maintain and continue existing ICT Infrastructure & facilities for a conducive environment** | | | | | | | | |
| 4.1.1.1 Evaluate the maintenance activities and identify | Coordinator NOC, Engineer | No of meetings on infrastructure development and | 10 | 10 | 10 | 10 | 10 | SDG target – 9.1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| issues in the infrastructure facilities | | monitoring maintenance activities | | | | | | |
| **Strategy 4.1.2 : Upgrading and acquisition of resources** | | | | | | | | |
| 4.1.2.1 Refurbishment of labs/lecture halls | Engineer, DB & AB/Proc | No. of labs/lecture halls refurbished | 1 | 1 | 1 | 1 | 1 | SDG targets – 4.A and 16.6 |
| 4.1.2.2 Acquisition and donation of library resources | AL | No. of resources (e.g. books, e-books etc.) acquired and donated | 15 | 15 | 15 | 15 | 15 | |
| 4.1.2.3 Implementation of library automation system | | No. of processes automated | 4 | 2 | 2 | 1 | 1 | |
| **Goal No.05 : Enhance the institutional image through good governance**<br>**Objective 5.1 : To improve administrative and financial functions of the institute**<br>**Strategy 5.1.1. : Ensure the compatibility with prevailing rules and regulation** | | | | | | | | |
| 5.1.1.1 Working towards an unqualified audit opinion | Director, DR/Admin, DB | Obtaining an unqualified audit opinion | Yes | Yes | Yes | Yes | Yes | SDG target – 16.6 |
| **Objective 5.2 : To strengthen the systems to enhance the performance of the institute** | | | | | | | | |
| 5.2.1.1. Introduce paperless financial and admin control procedures Systems | DD, Coordinator/NOC, DR/Admin | % of financial and admin procedures converted to paperless | 3 | 4 | 4 | 5 | 5 | SDG target – 11.7 |
| **Goal No.06 : Contribute to promote the use of ICT in the society**<br>**Objective 6.1 : To contribute to the ICT based social project** | | | | | | | | |
| 6.1.1.1. Organizing the ICTer conference | Director, Chairman/ICT | No. of conferences held | 1 | 1 | 1 | 1 | 1 | SDG target – 17.7 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 6.1.1.2 Publishing ICTer journals | er, ICTer Journal Steering Committee, AR/DO | No. of journal issues published | 2 | 2 | 2 | 2 | 2 | SDG target – 9.5 |
| 6.1.1.3 Offering services to external parties | | No. of services (school outreach programmes, teacher-training programmes, forensics, software audits, consultancies, etc.) rendered to external parties | 4 | 5 | 5 | 5 | 5 | SDG targets – 8.2 and 8.3 |
| 6.1.1.4 Contributing for national level programmes | | No. of national level programmes contributed (national curricula development, national examinations, steering committees on digitalization, contributions for Technical Evaluation Committees, etc.) | 12 | 15 | 20 | 20 | 20 | |
| **Objective 6.2 : To enhance ICT awareness and competencies of the community**<br>**Strategy 6.2.1 : Conduct educational programmes to improve ICT awareness and competencies** | | | | | | | | |
| 6.2.1.1. Develop and conduct short term training programmes | Coordinator CSC/ADMTC | No. of short - term courses conducted | 12 | 15 | 18 | 20 | 20 | SDG targets – 4.4. and 17 |

# University of Colombo School of Computing – Organizational Structure

