



GOVT. VICTORIA COLLEGE, PALAKKAD

**INSTITUTIONAL DEVELOPMENT
PLAN**



SUBMITTED TO

DEPARTMENT OF COLLEGIATE EDUCATION

GOVERNMENT OF KERALA

THIRUVANANTHAPURAM

2022

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I.INTRODUCTION

Government Victoria College is located in Palakkad, the largest semi urban district of the state of Kerala, with a vast expanse of socio-economically backward areas including tribal belts and some parts of the district deemed as Tamil linguistic minority areas. The institution is committed to provide education of a high order at a low cost.

The institution has set its quality policy at this backdrop and continuously strives for the comprehensive development of the faculty members and student community without considering their caste, creed or colour with a special focus on academic excellence, personality development and social orientation. The college catered to the educational needs of its first generation of students in the nineteenth century, with its establishment in 1888. It has continued to extend the same service to succeeding generations amalgamating advancements in technology but with standard and tradition associated with the college. Through its efficient functioning, the college has lived up to the expectations of its well wishers, the government and the other funding agencies. Ensuring academic excellence has always been a goal cherished by its management, despite the limitations that are inherent to such institutions in the government sector.

Academic merit is given priority in admissions, while reservation is maintained as per rules. The quality policy of the institution is driven home, right from the induction programme. Continuous appraisal of the performance of the students, teachers and administrative staff is done regularly. The quality policy is reviewed through the feedback of all stakeholders

II.VISION

To provide quality education to the youth from all sections of society, especially the deprived and disadvantaged, and to mould them into responsible citizens capable of contributing to the Nation's progress - Enlightening Education for a Broader and Brighter Tomorrow

III.MISSION

- To achieve overall development with a focus on knowledge, skills and the right social attitudes
- To equip the youth to lead the nation in its march towards self-sufficiency and progress in all areas of human endeavour
- To develop capable, well-educated and skilled citizens able to compete in a sustainable, diversified and knowledge-intensive international economy, and thus to meet the developmental goals of our country.
- To instil a sense of pride and a feeling of belonging in the mind of every individual
- Ensure women and the deprived find their feet in the mainstream

IV.PROFILE OF THE INSTITUTION

Sl. No.	Particulars	Details
1.	Name &Address of the College	Govt. Victoria College, Palakkad Kerala, India victoriapkd @gmail.com www.gvc.ac.in 0491-2576773 Mobile: 8281716773
2.	Year of Establishment	1888
3.	Type of Institution	Co-education
4.	Date of grant of Autonomy by UGC	NA
5.	University to which college is affiliated	University of Calicut, Malappuram
6.	Details of UGC recognition	2f, 12B
7.	NAAC accreditation status	Accredited (4th Cycle), 3.20 (A Grade)
8.	No. of UG programmes	16
9.	No. of PG programmes	11
10.	No. of Research programmes	7
11.	No. of students in UG programmes	2338
12.	No. of students in PG programmes	387
13.	No. of PhD students	60
14.	No. of permanent faculty members	126
15.	No. of research supervisors	34
16.	No. of Non-teaching staff	59

V.SWOC ANALYSIS

Institutional Strength

- Govt. Victoria College, Palakkad is one of the premier institutions of higher education in the state of Kerala with a long tradition of 135 years.
- Ideal Geographical location that helps easy accessibility to students
- Excellent academic support with accredited programmes under Science, Arts and Humanities streams
- The college is catering to the diverse needs of the society and the inclusive education is evidenced by larger enrolment of female students and underprivileged categories
- Eminent faculty with high academic qualifications and international exposure
- Library facilities with more than 1.3 lakh titles and INFLIBNET available for reference
- Excellent infrastructure and strengthened laboratory facilities with FIST sponsored facility for research activities
- Transparency in staff recruitment, which is done based purely on merit and social justice by the PSC Kerala and the institution has more than 95% permanent full-time faculty
- Transparent admission procedures purely based on merit and social justice, using digital platforms
- Subsidised fee structure that is affordable to the poorest of the poor
- Divyang Friendly campus with a wide range of services for students with special needs
- Seven Research Departments with 60 scholars and 34 research guides
- Focus on quality teaching with integrated ICT enabled classrooms and other digital facilities like LMS,
- EDUSAT and online platforms
- Dedicated and experienced supporting and administrative staff
- The college is having alumni organizations which support many of the academic and infrastructural needs of the institution.
- Eco Friendly campus and regular conduct of environmental sensitization programmes
- Highly committed and responsible PTA that supports all day-to-day activities of the institution
- Regular conduct of National seminars and workshops with the financial assistance from funding agencies of UGC, KSCSTE, Government of Kerala etc.
- Accredited Additional Skill Acquisition Programme (ASAP) of Kerala State Higher Education Department

- Proactive units of NSS, NCC, Women's Cell, Bhoomitra Sena and departmental associations.
- Student support systems with separate hostels for girls and boys

Institutional Weakness

- The heritage college with deteriorating infrastructure
- Inadequacy in funding for renovations and infrastructure development
- Constraints in land for campus expansion
- Absence of academic autonomy limits the freedom to design new courses
- Consultancy and industry linkage needs to be strengthened
- Lack of collaboration and MoUs with advanced professional institutions
- Lack of revenue generation due to government policies
- Inadequacy in academic audit
- Professional development of faculty through ICT is limited
- Lack of recognition of faculty members
- Limited avenues for administrative staff training

Institutional Opportunity

- Growing demand for new programmes attested by the high demand ratio for the available courses paves the way for the introduction of new integrated academic programmes along with enhancements in existing programmes
- The reputation of the institution as well as its geographic location provides opportunities for new integrated programmes, which combat the changing climate of the region and ensure environmental sustainability
- Opportunity for enhancing consultancy and extension services utilizing the infrastructure facilities
- Transformation of the college library into a knowledge hub for the community
- Opportunity for supplementing the core faculty with a system of visiting faculty
- Scope for improving academic management system by exploiting the e-learning resources and automation
- Opportunity for institutional tie-up with industry and leading research organizations for strengthening teaching learning and dissemination of knowledge generated
- The expertise of many faculty members provide opportunity for securing funding from different sources

Institutional Challenges

- Advanced courses with sufficient investments are not getting approved by the policy makers
- The introduction of diverse and new generation courses by nearby institutions
- Resource mobilization from different funding agencies and Non-Governmental organizations
- Attracting foreign students and students from other states
- Exploring avenues for international collaborations
- The interventions by local politics and external affairs divert student priorities
- Loss of academic sessions due to variety of unforeseen social reasons

VI. STRATEGIC VISION

- To become an institution of excellence in higher education and Research in North Kerala

To achieve this vision, Govt. Victoria College will formulate strategies around the following pillars:

LONG TERM STRATEGIC GOALS

- State of the Art Infrastructure with campus area expansion
- Research Excellence
- Academic Excellence
- Academic and Industry Collaborations
- Enhanced Placement and Progression
- Culture of Entrepreneurship and Innovation through incubation centres
- Strong Extension and Outreach Activities in association with alumni of the institution

CORE VALUES

- Inclusiveness
- Diversity
- Integrity
- Transparency
- Academic freedom
- Merit

VII. PRESENT INFRASTRUCTURE

Creation of state-of-the-art infrastructure in the college is one of the major plans of the college, so as to promote free and innovative thinking and the overall development of students.

MAIN CAMPUS

The main campus situated in Palakkad district extends over 21 acres of land. The main campus has a total built up of about 88000 sq.m. The total buildings include Administrative block (Administration wing, Mathematics, Sanskrit and Hindi) Social Science block (History and Economics), Science block (Botany, Chemistry, Physics and Statistics), Malayalam block, Computer Science block, Commerce block (B. Com and B. Com. Honours (construction works ongoing)), Seminar Hall and IQAC complex, English block, Zoology block, Tamil block, Physical Education block, General Library, Canteen and Men's Hostel, Student's Amenity Centre, NCC room, Pavilion associated with Department of Physical Education. Many of the department blocks have well-spaced class rooms, Head of the Department (HoD) room, staff room and wash room.

Details of the existing buildings

I. Heritage Buildings

1. Administrative Block – (Total area 1145.12 sq. m.)

This is a two-storey building. Administrative wing (Principal's chamber, Vice-Principals chamber and Office), Auditorium, EDUSAT room, Department of Mathematics (5 class rooms), Department of Hindi (2 class rooms) and Department of Sanskrit (2 class rooms) are functioning in this building.

2. Science Block – (Total area 7120 sq. m.)

This is a two-storey traditional architectural block in British style coupled with a Kerala model 4-sided building with a garden area at the centre. In this block, major science departments of Physics, Chemistry, Botany, Psychology and Statistics departments are working. This block hold classrooms for Sanskrit and Tamil also.

II. Other Buildings

a. Men's Hostel – (Total area 6760 sq. m.)

This is a larger construction within the campus near the entrance.

b. Social Science Block – (Total area 1200 sq. m.)

The old building of Department of Economics, History and Political Science has been

replaced with a new temporary block. This block accommodates Department of Economics (5 class rooms) and Department of History (5 class rooms) and two staff rooms.

c. English Block – (Total area 726 sq. m.)

This is a two-storey building and has 5 class rooms, 2 staff rooms and a washroom

d. Computer Science block – (Total area 626 sq. m.)

This block contains two buildings which include 3 classrooms, staff room and a washroom

e. Malayalam Block – (Total area 998 sq. m.)

This block is a two-storey building and has a seminar hall, 6 class rooms, a staff room, HoD room, a computer lab and a wash room.

f. Commerce Block – (Total area 1300 + 1300 = 2600 sq. m.)

Two buildings, one fully functional and another, construction works are on-going. B.Com. regular course is functioning in the existing fully functional building with 8 class rooms, a staff room, HoD room and a wash room. The new building under construction is allotted for B.Com. Honours course.

g. Zoology Block– (Total area 1030 sq. m.)

This two-storey building has four class rooms, a research lab, UG and PG labs, a museum, staff room, HoD room and a washroom.

h. General Library – (Total area 354 sq. m.)

This is also one of the oldest buildings of the college. This facility is not sufficient for the existing library resources and hence all the reference and stock of each department is being maintained by department libraries.

i. Physical Education and Pavilion – (Total area 494 sq. m.)

This is also an old building in dilapidated condition and need urgent replacement. In this block a Gymnasium and spaces for indoor games are operational.

j. Tamil Block – (Total area 348 sq. m.)

Tamil block has two 2 class rooms. Staff room, washroom and one class room is associated with Science block.

k. Canteen – (Total area 107 sq. m.)

This is a near recent construction of one-storey building and is not at all sufficient for an institution with a student strength of 2500 and staff strength of about 200. There is an urgent need of a new canteen at the campus premises.

l. Day Care Centre - (Total area 112 sq. m.)

This is a very small construction and is so old that the building is now in a dilapidated condition. Urgent attention is required to replace this building with a new one with modern amenities.

m. Student's Amenity Centre (Total built up area 189 sq. m)

This is building donated by an alumnus of the institution and host a mini seminar hall, rooms for NSS, NCC and ASAP.

n. Seminar Hall & IQAC Facility (Built up area 250 sq. m)

This is a two-storey building where, the upstairs seminar hall has been constructed with MP fund and ground IQAC facility has been donated by Botany Alumni Association (VIBA). This block has a seminar hall with seating capacity of 75 in first floor, IQAC office, IQAC conference hall, a guest room, a mini kitchen and a washroom facility in the ground floor.

o. Play Ground: (Total area 17000 sqm)

The college is having a very good play ground area, but the physical facilities available in the ground at present is minimal. The second phase construction by KITCo under KIFBI is expected to establish more facilities in the play -ground.

Campus II

Ladies Hostel: This is an old building with two floors. This building is not at all adequate enough to accommodate girls students coming from far off places due to centralized admission process.

Campus III

Staff Quarters: The accommodation facility of the staff of the college is near to college ground and is an old construction. It is high time that these facilities need to be upgraded with modern amenities

Academic Block under Construction

It consists of three floors with 26 classrooms to meet the increasing demand of class rooms and other facilities.

Knowledge Centre and Auditorium under construction: The central Library is to hold all departmental libraries, a common library, reprographic facilities, a digital library, special facility for research scholars, a special section for periodicals, journals, bound volumes, audio visual facilities, etc.

VIII. ACADEMIC PROGRAMMES UNDERTAKEN (2021-22)

At present the college is undertaking 7 research programmes, 11 PG programmes and 16 UG programmes. During 21-22, one certificate course has also been initiated. College undertake one course under continuing education and is acting as the nodal centre for ASAP under new initiatives.

Name of the Programme	Sanctioned Strength	Admitted students
BSc. Botany	24	23
BSc Chemistry	48	48
B Com.	60	67
BSc. Computer Science	24	26
B. Com Honors	30	27
B.A Economics	60	67
B.A English	24	29
B.A Hindi	24	27
B.A History	60	68
B.A, Malayalam	24	31
BSc, Mathematics	48	49
BSc, Physics	48	46
BSc Psychology	24	26
B.A Sanskrit	24	27
B.A Tamil	24	25
BSc Zoology	24	24
MSc Botany	12	13
MSc Chemistry	12	14
MSc Physics	12	12
MSc Zoology	12	14
MSc Mathematics	15	15
MSc Statistics	12	14
MA Economics	15	16
MA History	15	16
MA Malayalam	15	16
MA English	15	17
M Com	10	13
PhD Botany	24	12
PhD Chemistry	32	5
PhD Physics	30	10
PhD Zoology	10	5
PhD English	36	20
PhD Economics	14	0
PhD Commerce	18	5

IX. PROPOSAL FOR INFRASTRUCTURE STRENGTHENING – CONSTRUCTION AND LAND ACQUIRING

Acquiring of additional Land (2.25 acres)

The college campus of Govt. Victoria College is spread in an area of 27.84 Acres and the academic space along with play ground and residential area in the main campus consist of 23.66 acres. No further expansion of campus is possible in this area, as most of the spaces come under heritage status. The college require an additional land area for further construction. Hence the college proposes an acquisition of barren area just near to college ground with an area of 2.25acres owned by two private parties. This is the adjacent plot to the main campus and at present it doesn't have any access from other areas. This proposal require an estimate of 5 Crores with respect to the land value prevailing in the area.

At Main Campus

Considering the growing needs of the college, it is proposed to construct the following buildings in the main campus:

Academic Block –I (Life Science Block)

A new academic building is to be constructed, after demolishing the old Men's hostel, to meet the increasing demand of class rooms and other facilities. Due to limited land available in the main campus, the new building should have a minimum of four floors and each floor must be designed to have horse shoe shaped class rooms (with a seating capacity of 60) and laboratory facilities to aid life science research undertaken by Botany and Zoology Departments, staff rooms and toilets. Lift facility should be provided in the building. Provisions for one common class room in each floor must be provided along with one seminar hall. The parking facility is to be provided under ground and at the ground floor. (Detailed proposal Annexure 1 and Annexure 2) **(Apprx. Estimate 30 crore)**

Academic Block- II (Arts and Oriental Language Block)

A second academic building is to be constructed after demolishing the old Malayalam block (after providing alternate facility to conduct classes). This academic block is also to contain a minimum of four floors with horse shoe shaped class rooms, common class rooms, staff rooms, one seminar hall, adequate number of toilets and a lift. One floor shall be set aside for various clubs, statutory cells and societies along with an amphitheater that contains an ultra HD projector, 2000 watts RMS sound system and other peripherals. Theater must be

with a seating capacity of 250. Two floors shall be used for accommodating research centers of languages along with the proposed Post Graduate classes of language departments. **(Approx. Estimate 20 Crore)**

Toilet Blocks

There is severe shortage of toilets in the campus and therefor it is proposed to constructs two toilet blocks, one near the present Malayalam block where present toilets for boys operational and the other near the present heritage building of Science block. Toilet block for boys must include a minimum of 20 urinals, ten toilet rooms and at least one unit each for physically challenged and trans-gender persons. **(Approx. Estimate 50 Lakhs)**

Construction of an Examination Wing

By the introduction of semester system, most of the teaching days are engaged for the conduct of University examinations. This inturn disrupt the conduct of routine classes in many of the departments, as the classrooms are made use for the conduct of examinations. Inorder to overcome this, a permanent examination hall need to be constructed over the BCom Honors block which is under construction within the campus. **(Apprx. Estimate : 1 Crore)**

CAMPUS II

Construction of New Hostel along with Administration facility

The present boy's hostel within the academic space of the institution is posing many hindrances in the routine academic activities of the college, posing issues in security systems implemented inside the campus. A new hostel need to be constructed near the existing ladies hostel and the new building must be with adequate rooms to accommodate the girl students. The present Ladies Hostel may be strengthened for the boys as the strength of girl students opting the hostel are more compared to boys. The new construction must accommodate the office facilities of hostel including office of warden, hostel office, store rooms, toilet facilities and guest room facility. **(Approx. Estimate 20 Crore)**

Construction of Principal's Quarters

The old heritage Principal quarters has been converted for the setting up of a heritage Museum. At present, no accommodation facility is being provided for Principal of the college. Hence a new Principal's quarters need to be constructed within the Principal quarters campus along with parking facility and a guest room facility for those officials visiting the campus. **(Approx. Estimate 1 Crore)**

Construction of a flat system for staff accommodation

The present accommodation facility for the staff are inadequate and the Professor's quarters near the present hostel are old and are in a dilapidated condition. These must be demolished and a new flat system with a minimum of 25 flats in a vertical structure may be constructed. This system must accommodate researchers also, as most of the girls pursuing research need family accommodation at reduced rate. **(Approx. Estimate 20 Crore)**

X. MODERNIZATION AND UPGRADATION OF EXISTING INFRASTRUCTURE

As the institution is 135years old, most of the existing buildings and interiors are outdated and are in deteriorating conditions. Almost all classrooms, laboratories and office facilities require modernization with modern amenities.

1.Administrative

a. Principal's room renovation

The existing Principal room is very old and need renovation with modern seating facilities and other essential amenities. The proposed structure of Principal chamber is given in Fig. 1& 3. **Apprx. Cost = 8 Lakhs**



Fig. 1. Proposed Principal's Chamber

b. Conference room near Principal Chamber

The present conference facility in Principal's chamber does not provide any private space for the institution head and need to be upgraded with modern conferencing facility. The proposed conference hall is given in Fig.2& 3. **Apprx. Cost : 12 Lakhs**



Fig.2. Proposed Conference facility

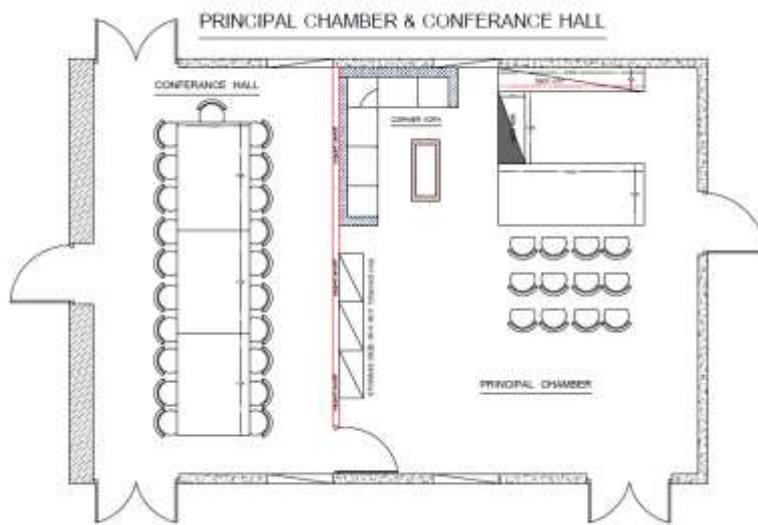


Fig. 3. Line drawing for Principal's room and Conference hall

c. Office room modernization

The present office with 39 staff members are working in a congested facility within office. Upgradation of the facility within office is an urgent need as the institution is moving towards excellence. Proposed plan is summarized in Fig.4& 5. **Apprx. Cost : 25 Lakhs**

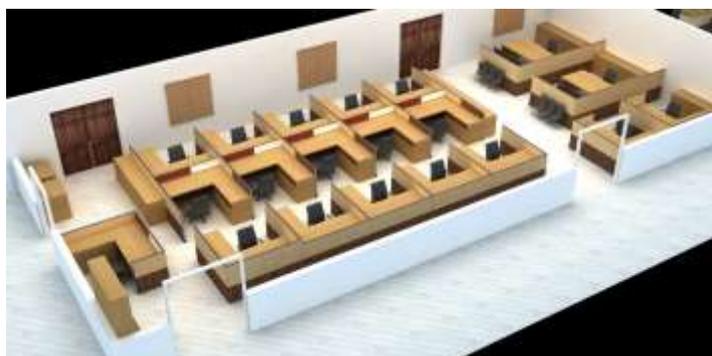


Fig.4. Proposed office room

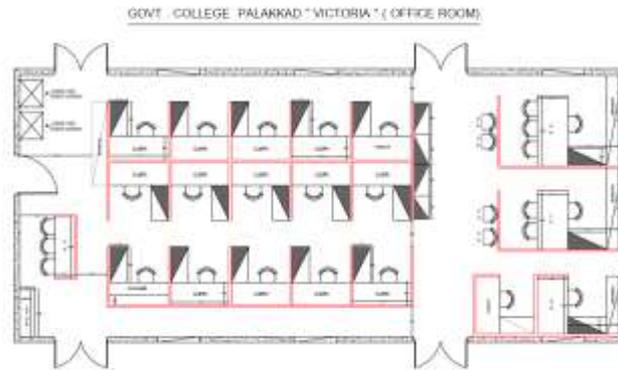


Fig. 5. Line Drawing for Office room

d. Vice Principal's room

At present, college do not have an organized facility for Vice Principal. One of the existing room in administrative block may be modified as Vice Principal's room. Proposed plan for Vice Principal room is given in Fig. 6.

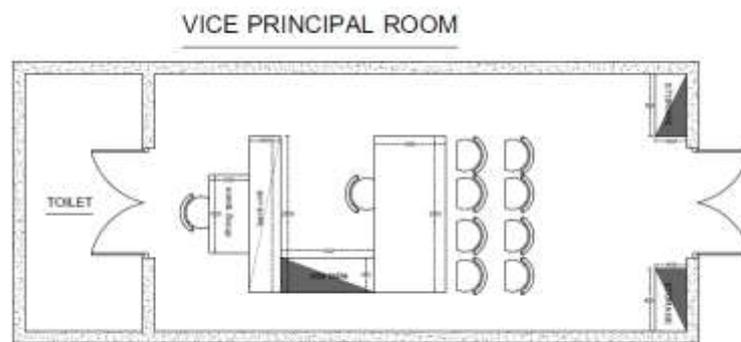


Fig. 6. Proposed Vice Principal's room

- e. Wash room renovation:** The existing wash room facility for administrative staff in administrative block is insufficient and construction of separate toilet facility in this block is proposed for construction and renovation.
- f. Office record room construction and renovation:** The record room for office require sufficient furnishing with storage facility. Wall mount racks need to be constructed in the records room for safe custody of office files. The existing facility is not sufficient with the growing demands and hence an additional construction parallel to existing office is also proposed.
- g. Modernization of Confidential room for Exam control:** The confidential room near to Principal chamber need to be modernized with sufficient storage facility to aid in exam related confidential activities.
- h. Construction of ramp/lift to administrative block**

At present differently abled student and faculty find it difficult to carry out activities in

relation to office, as the wing is operating in the first floor of the administrative building. So construction of a ramp or a lift is essential in this block. **(Apprx. Estimated Cost: 5 Lakhs)**

i. Rainwater Harvesting System for Existing Buildings

All existing buildings must be fitted with rain water harvesting facility in order to cope up with the water shortage inside the campus. Recharging of existing wells within the campus is an immediate solution for the same. **(Apprx. Estimated Cost: 25 Lakhs)**

j. Strengthening of natural pond inside the campus

The college campus is having a natural water source by way of a pond near the newly constructing academic block. Urgent attention is required to strengthen the boundary along with installation of proper security system for this pond as the students will be moving to this new academic block within one year. The rainwater harvested inside the campus can also be recharged to this pond which will in turn suffice the water requirements within the campus. **(Apprx. Estimated Cost: 1 Crore)**

k. Installation of Solar panel in all existing Flat roof tops and new constructions

All the flat roof topped building can be fitted with solar panels to make the campus energy independent. If the existing buildings are made energy efficient with solar panels, the energy requirement in future can also be satisfied to a greater extent. Along with this, all the newly constructed buildings within the campus must also be fitted with solar panels to utilize the maximum solar energy falling inside the campus. **(Apprx. Estimated Cost: 1 Crore)**

l. Construction of a Security Cabin near College Gate

At present College do not have a permanent security personal during day time and the person who have been employed by PTA do not have a proper space to sit or stand near the gate. Construction of a Security Cabin with minimum amenities is an urgent need for the campus. **(Apprx. Estimated Cost: 8 Lakhs)**

m. Construction of a Bus Parking area near College Ground Gate

Govt. Victoria College now owns two buses for the student transport supported from MLA fund. But there is no specific safe parking area has been built up inside the campus. The present proposal is for the construction of a safe sheet topped bus parking facility for minimum four buses in anticipation of two more buses in future. **(Apprx. Estimated Cost: 10 Lakhs)**

n. Installation of Separate Transformer and rewiring inside the Campus

As Govt. Victoria College is a heritage institution with old buildings, most of the buildings have old electrical wiring and fittings. This need to be upgraded and facilities by way of electrical instruments are increasing yearly, there is an urgent need of a separate transformer

inside the campus. Though sanction has been accorded for a separate transformer for new academic block construction, the old buildings require additional infrastructure strengthening in electrification (**Apprx. Estimate : 40 Lakhs**)

o. Open Stage renovation

College is having an old open stage in front of the campus. This is a space being utilized by most of the government agencies for conducting their common programmes. This require renovation with marble flooring and the frontage of the stage is in a damped condition. This area require interlock tiling, so that the rain water could be percolated into the ground. This area can also be utilized as parking space for vehicles, while massive examinations of PSC etc. as well as during campus placements. (**Apprx. Estimate : 25 Lakhs**)

2.Modernization of Classrooms and Laboratories of existing Departments

At present 7 of the PG departments are recognized as research centres and the remaining PG departments are planning to get recognition as research centres. In the coming five years, remaining four PG departments will also be recognized as research departments. Out of 16 departments, 5 departments are with only UG programmes and have proposed new courses under PG programmes. Proposals of individual departments are appended as **Annexure 1 to Annexure 18**. These proposals are envisaged to enhance the academic and research ecosystems inside the campus.

XI. STRENGTHENING OF IT INFRASTRUCTURE

a. Improvement of IT facility for recorded and online classes

The college has 16 undergraduate and 11 post graduate programs. College has also 7 research departments. Govt. Victoria college is running MOODLE learning management system actively since 2015. The increased interest in creating quality recorded video classes and live streaming of online classes has been geared in recent years in Higher education. This recorded videos can further integrate with our college learning management system and will enhance the level of teaching learning experience. For this strengthening of IT infrastructure is inevitable in all departments. For writing mathematical equations, Chemical structures, and to draw diagrams high quality electronic tablets with high precision and accuracy is required during online class. Recorded online classes requires high speed processor laptop and for recording and online streaming of Online classes requires high quality noise free wireless mike as well wireless type mouse.

Sl. No.	Item	Rate (Rs)	Quantity	Total Amount (Rs)
1	Electromagnetic Resonance Graphics Tablet with resolution 2540 (lines per inch)	6997.00	17	118949
2	Electromagnetic Resonance Graphics Tablet with resolution 5096 (lines per inch)	36359.00	17	618103
3	Wireless Neckband with BT v5.0	2500.00	17	42500
4	Wireless Computer Mouse	550.00	17	9350
5	Laptop, Display touch with stylus	80000.00	17	1360000
Total : 21,48,902/-				

b. Establishment of a Reprographic Center and Digital Library

Upgradation of infrastructure by way of a new knowledge centre is under construction and expected to be completed in January 2023. The system has a proposal of a reprographic centre and the college plans to initiate a publication wing attached to this centre in the coming years. The requirements of all types of printing which are outsourced at present can be done at this centre with a reduced cost. The printing and publication of College Magazine, ID cards of students along with academic publications of seminar proceedings and books can be taken by this publication wing in the coming years. The manuscripts available within the institution need to be digitized as part of the digital repository of the institution. Govt. Victoria College, at present holds a strength of 2800 students and the available digital facilities are not sufficient to meet the requirements of the student community. As more departments are getting recognized as research centres, requirements of accessibility to digital resources are increasing. Hence infrastructure strengthening with more facilities are essential and the proposed reprographic centre with more facilities and associated publication wing will widen the digital accessibility to the student community.

Access to digital resources by the research scholars, faculty and students require more infrastructure by way of Desktop/Laptop computers and scanning facilities as part of Digital Library. All the outsourced publications viz. student projects, thesis, college magazines, id cards etc. can be met by the institution at a reduced rate. The available old resources must be preserved in digital form and hence sufficient scanning facility must be implemented at the institution.

Essential Requirements

Sl. No	Item	Specification	Rate	Qty	Amount	Justification
1	Desktop	Acer Intel Core i3 10100 8 GB/ 1000 GB HDD/ Windows 10 Professional, Wireless Connectivity	39325	10	396250	For Digital Library : Accessing digital resources
2	Printer	hp Laser Mono Computer Printers for A4 paper size	9400	1	9400	Library official purposes
3	Colour Printer	Canon Laser Colour Computer Printer, A4, Wireless Connectivity, 3 years Warranty	35900	1	35900	Printing of Colour pages of Students Projects
4	Table Top Book Scanner (Czurtek - ET18 PRO)	AVISION CMOS 600 DPI Table top (without computer and display screen) book scanner	67500	1	67500	For scanning of Manuscripts and rare books available in the Library/Documents in the college
5	5 KVA online UPS	HYKON 5.0 KVA UPS HYKONR (AEB 5000) Minimum VAH : 16800	198000	1	198000	For providing back up support to Library digital services
6	Id Card Printer	Matica 100 Smart Card Printer MaticaR (MC310)	69000	1	69000	For printing Identity cards of the students
7	Flatbed Scanner	On-top Scan Flatbed Scanner, speed 12 sec 400 dpi,A3 Color (without calibration), Color Linear CCD, LED, Resolution 1600 DPI, OS Support Windows	300000	1	300000	For scanning the resources of herbarium, manuscripts etc available at the institution
Total					1076050/-	

c. Establishment of Online assessment Center/Computer Lab

In the present era of blended learning with online platforms and digital resources, the facilities available at the institution are inadequate for the conduct of training programmes using computers and the conduct of online examinations. The institution is planning to establish an online examination centre with 100 computers which will in turn satisfy the requirements for the conduct of training programmes and online participation of students in courses offered by other online platforms. This centralized facility can also be used as computer labs for Computer Science, Mathematics and Commerce students of the college. As the learning platforms are being shifted to blended ones combining online and offline modes, essential training is inevitable for the faculty and students. As the student strength of the institution reaches 3000, the existing computer labs and facility available are not sufficient for the effective conduct of assessments and trainings.

Sl. No	Item	Specification	Rate	Qty	Total
1	Desktop Computer	Processor: 10th Generation Intel® Core™ i3-10100 Processor (4 Cores / 8 Threads, 3.60 GHz, 6 MB Cache, 65W, DDR4-2666) Operating System: Windows 10 Pro 64 Memory: 4 GB UDIMM DDR4 2666MHz; Hard Drive: 1 TB 7200 HDD LED Monitor Warranty :5 Years Onsite	50000	100	5000000
2	Computer Table (Moveable)	8ft length * 1.5ft width *2.5ft height 4 Partitions with keyboard draw backside partially covered(1ft)- Material-multi wood panel with minimum 20 mm thickness (Drawings will be submitted later) Each units have separate electrical wirings to connect 4 computers (total 12 plug points,4 switches, 4 boxes, Elcb-1, mcb-1, and covered cabling to connect UPS to the unit)	25000	25	625000
3	UPS	10 KV UPS with isolation transformer technology + Sufficient number of 100 Ah or above LiFePO4 Batteries with covered stand. Minimum back up time with full load-2 hour+ 5 Year OEM Warranty (battery and UPS)	600000	3	1800000

4	Electrical wiring and Network cabling		400000	1	400000
5	Projector with Ceiling mount installation kit+installation	LED Projector+ Screen+ 6 * 4 Insta lock Wall mount Screen Suvira Sealing Mounting Kit for multimedia projector 4ft VGA Cable 15 meter HDMI Cable 15 meter Power Code 15 meter Electrical Wiring & Fittings + Installation	50000	1	50000
6	Air conditioner	2 ton Air conditioner with 3/5 BEE star rating with 3 year warranty + Installation (installation, cabling, switches and other electrical fittings required to install A/C)	50000	6	300000
Total					8175000/- -

d. Establishment of digital display systems at the campus for effective communication

The institution requires efficient and modern digital communication facilities within the campus. This include an efficient display unit for the Principal Chamber, as the existing facility lacks proper visual communication in the meetings held at the Principal's chamber like the NAAC presentations. Digital display Boards for all Departments for quick and paperless official communication also form part of this upgradation. Establishment of digital sign boards within the campus will increase the public utility of the facilities with ease in identifying the blocks and facilities available in the campus.

Sl. No.	Item Description	Rate	Qty	Total
1	50 inch smart LED TV with 3 year warranty	55000	1	55000
2	Digital Display Boards for 16 Departments	40000	17	80000
3	Digital sign boards inside campus	10000	30	300000
Total				435000/-

e. Proposal for Installation of campus WiFi

The main drawback/difficulty in implementing the online learning/course management system is our inability to provide enough computers with internet facility to students. Presently Govt. Victoria College Palakkad has a common computer center with limited computer facility. Only less than 100 computers are working now and which is very less than the required number, when compared to total student strength of 2238. In addition to this, students are also facing difficulty in using this computer room because of the working time of the computer center and the routine class time. This problem can be overcome by providing free wi-fi to students. The proposed places of wifi access are library, computer room, and all parent departments. Without the installation of wifi in the campus, MOODLE implementation is worthless.

SI No.	Item	Rate	Quantity
1	2 SFP ports, 1 expansion bay for optional Flexi Port module, SSD + Base License (incl. FW, VPN & Wireless) for unlimited users + power cable	98484	1
2	3 Year Enterprise Guard Subscription Includes: Network Protection, Web Protection and Enhanced Support	219180	1
3	Gigabit L2+ Managed Switch	57000	1
4	SFP Transceiver 1000BASE-LX Single Mode	9000	8
5	rack 12 U Network Wall mount Rack with Glass Door + 1x 6 Soc PDU + 2 x Cooler FAN + Cantilever Shelf + HW Pkt	7800	1
6	24 port LIU with 12 x Duplex Couplers + 24 x SM Pgtails + 8 x SM SC to LC 3 Mtr Patch Cord	17400	1
7	2 Mtr CAT6 Patch Cord	300	25
8	APX 320 Access Point (ETSI) plain, no power adapter/PoE Injector	21240	20
9	8-Port Gigabit Ethernet PoE+ Smart Managed Pro Switch with 2 SFP Ports (75W)	18120	6
10	rack 4 U Network Wall mount Rack with Glass Door + 1 x 3 Soc PDU + 1 x Cooler FAN + Cantilever Shelf + HW Pkt	4200	3
11	CAT 6 RJ45 Connector	24	50
12	CAT6 UTP Cable (Quantity Approximate)	24	4500 Mtr
13	Cable Laying through ISI Grade PVC Conduits with all accessories	72	4500Mtr
14	100X Controller Based Access point with following features Outdoor Enterprise-grade deployment / 1.3 Gbps + 450 Mbps Throughput / 8 per radio (16 in total) Multiple SSIDs / 1x10/100/1000 Base TX LAN interface / 802.11 a/b/g/n/ac 2.4 and 5 GHz WLAN Standards / DFS/TPC / Power over Ethernet / 6 internal antennas / 3x3:3 MIMO capabilities / CE, FCC, IC, RCM, CB, UL Certification	70836	5

15	PoE-Injector 802.3at (Gbit/30W) - with EU Power Cord	4855. 2	5
16	Cable Laying through ISI Grade PVC Conduits with all accessories (Including trenching ducting and backfilling) (Quantity Approximate)	300	400 Mtr
17	6 mtr GI Pole with All accessories (Concrete base for gi pole + AP Mounting Brackets + IP 66 Rating PVC Outdoor Box) (Quantity Approximate)	18600	2
TOTAL		19,94,340/-	

f. Establishment of E – LEARNING CENTRE

As the higher education system is moving towards blended learning with online platforms, establishment of a E-learning centre at Victoria College Campus will enable the students from unprivileged socio-economic background to utilize the facility to its maximum. The digital divide existing among the student community can be rectified to a greater extend by the establishment of such a centre at the campus. This facility can also be used by nearby schools and other government departments to provide training programmes in computer related data management in their offices.

Sl. No.	Item	Rate	Quantity	Rs.
1	Desktop computer/Laptop (2GB RAM)	65000	150	9750000
2.	Wifi router/Modem	7500	20	150000
3	Tables & Chair	4500	150	1350000
4	LCD Projector	130000	2	260000
5	Smart board	75000	2	150000
6	White board	10000	5	50000
7	Solar Panel , Battery & UPS (5KVA)	50000	5	250000
8	Electrical & Networking charge	100000	1	100000
9	Public addressing system (Mike, Amplifier & speakers)	25000	2	50000
10	CCTV monitoring in computer room	9000	10 Nos.	90000
11	Reprographic centre (Photocopying + Printing machine, Scanner)	190000	1 Nos. each	190000
12	Laptop, Display touch with stylus	80000	2	160000
13	Generator	120000	1	120000
	Total			12670000

XII. STUDENT AMENITIES /FACILITIES PROPOSED

Sl. No.	Amenities Proposed	Justification
1.	Proper washrooms/toilets to all genders	The college has to provide basic and extended facilities like proper washrooms/toilets to all genders.
2	Retrofit all the buildings/blocks with safe and spacious elevators.	It is necessary to ensure that students with limited mobility are having classrooms located on the ground floor. Since this measure may not be always possible, steps be initiated to retrofit all the buildings/blocks with safe and spacious elevators.
3.	Uninterrupted water supply in the College Campus/Departments/Hostels	At many points in the campus running water is non-existent or partially available, causing a lot of inconvenience to the student community.
4.	Rest room for women	Though nearly 70% of the student population is women, the number of restrooms is inadequate.
5.	Strengthening of Counseling Cell	Services of the counseling center are to be optimized in such a way that those students who face psychological stress and trauma can avail of them at any time and in relaxing ambience.
6.	Extend working hours of General Library	Though the working hours of the general library has been extended with internal rearrangements, that need to be extended by increasing the number of staff and tapping resources offered by modern technology. This will be helpful to students, especially researchers and postgraduate scholars.
7.	Separate rooms for clubs and associations	Each and every club/similar body should be allotted separate rooms so that the office-bearers can produce better results.
8.	Increase the usable area of Canteen	The carpet area of the canteen needs to be enlarged so that more students can use it comfortably. In addition it has to be ensured that the menu is more variegated and are affordable.
9.	Cafeteria	A modern Cafeteria to cope up with the new generation requirements may be implemented in the campus
10.	Wi- Fi internet connectivity at the campus	Weak internet/mobile signals are a major problem that everyone suffers in the campus and inside most buildings. The problem is to be scientifically probed and comprehensively solved.
11	New hostel building for girls students,	Girl's students constitute about 70 percent of total strength. The college, need to have more hostel buildings as the

	research scholars and ladies staff	admission procedure are centralized
12	Mini theatre	A mini theatre is necessary. It will equip students showcase their performative /artistic skills and to screen movies whenever necessary.
13	Add-on courses and certificate programmes	Along with their major programs, students should be offered the opportunity to pursue add-on or short-term courses like graphic design, craft making, GST filing, data analysis, etc.
14	Art gallery	An art gallery would be suitable for the campus. Students can exhibit their painting, drawings and other artefacts in it and sell the same to prospective buyers.
15	Safety and security of the campus	It is the need of the hour to fix functional CCTVs and appoint security guards at gates of the college.
16	Online resources at the library	Scale up online resources for students so that they can excel in their academic engagements and competitive examinations.
17	Set up first aid treatment center and sickrooms	A first aid treatment centre should be set up in the campus so that students can use it in the event of health emergency.
18	Cooperative store	The existing cooperative store needs to be strengthened in order to satisfy all the academic requirements of the students and staff inside campus

XIII. BEYOND ACADEMICS

COLLEGE CANTEEN & CAFETHERIA

The present college canteen is a one story building covering less than 150sq,m area. It is inadequate for a college with more than two thousand five hundred students pursuing their higher education. Therefore it is proposed to construct an additional floor above the present college canteen.

DAY CARE CENTRE

The available day care facility at the college campus is in a dilapidated condition. Inorder to support the wards of the employees and research scholars, a well-equipped day care center consisting of a fully furnished large hall with an adjacent open space for children to play is proposed at newly proposed ladies and staff hostel.

NCC/NSS/CLUBS

Separate office spaces are not available for NCC and NSS in the campus. For various clubs, no such spaces are available. Therefore separate space with adequate infrastructure for various clubs is proposed in new academic blocks planned in the present proposal.

MEDICAL ROOM

The college is depending on neighboring District Hospital, for meeting the urgent medical requirements of students and staff. Since no separate space available in the college for health care, we propose a separate medical room with adequate equipment and furniture at college campus.

STUDENTS' UNION ROOM

At present, college do not have a designated student's union room. A separate facility may be allotted in the new construction under strict monitoring of staff advisor and arts advisors of student's union. Proper furnishing of the room for official activities need to be done with proper periodical monitoring.

JEEVANI ROOM: The Jeevani Center is functioning at the college campus in a aseparate room. This too has to be properly furnished and air conditioned.

PLACEMENT CELL: An airconditioned office room, and a training hall with required furniture is proposed at the college campus for placement assistance and training. No separate space is available at present for placement cell.

OPEN AIR ART FLOOR: Renovation of open air stage in front of the campus as an art floor is proposed at college campus. This space can be utilized for debates and open discussions of student community to generate leadership qualities.

MUSIC CORNER

Without disturbances to the academic ambience within the campus, a corner may be set up for students for enjoying music performance in small groups. This can be clubbed with the music band Voice of Victoria.

RADIO VICTORIA

One of the garden area inside the campus may be fitted with a Radio as in the TVPM Museum and seating facilities may also be installed within the garden. The student community can listen to RADIO in break times and in evening.

INTERNET RADIO

College is planning to begin an internet radio 24 x 7, with recorded programmes by the students and alumni of the college.

XIV. KNOWLEDGE HUB

(i) LIBRARY

Newly Constructed Centralized Library Building: The newly constructed Central Library is to hold all departmental libraries, a common library, reprographic facilities, a digital library, a special section for periodicals, journals, bound volumes, etc. The central library has been designed to provide 1.5 lakh book space, covered in a single floor with an area of 1510 sq.m. Individual department libraries are to be shifted into the central library building and the additional space created is to be used for other purposes.

Though the construction of the building will be complete by the beginning of 2023, interior work and networking has to be completed for the full-fledged functioning of the library in the newbuilding by accommodating the general and department libraries. The following facilities are provided in the new library building as per the plan of the building.

Ground Floor: Reception Lounge, Reprographic Center, Property counter, New Arrivals Display, Librarians Room, Circulation Section, Toilet Area, Reading Room, Reference section, Periodical section and Book Stock Room. Even though we have decided to use the old furniture and equipment available with us, an additional amount of approximately **50 Lakhs** is required for the full-fledged functioning of the new central library building. Estimate for interior work and networking is being proposed for the effective functioning of Library.

Facilities required for knowledge centre under construction

Sl No	Item	Specification	Rate	Qty	Amount
1	Property Locker	6 ft L* 6.5 ft H *1.5 W with 20 compartments with doors, 18 g Sheet, Powder Coated,	30000	2	60000
2	Reading Table	7.5 ft L *2ft W*2.5 H, G I Square Pipe 1.5 inch 16g Frame, Granite top for newspaper reading	12000	2	24000
3	Reading Table	5 ft L *2ft W*2.5 H, G I Square Pipe 1.5 inch 16g Frame, Granite top for newspaper reading	10000	2	20000
4	Chairs	Wooden with Arm, Seat and Back wired	6000	25	150000
5	L Shape Counter	Wooden Frame, 5 x5 ft L * 2 Ft L * 2.5 ft H, Provision for accommodating one computer, one draw , Granite top	20000	1	20000
6	L Shape Counter	Wooden Frame, 5 x7 ft L * 2.5 Ft L * 2.5 ft H, Provision for accommodating one computer, one draw , Granite top	30000	1	30000
7	L Shape Counter Reference	Wooden Frame, 5 x10 ft L * 2.5 Ft L * 2.5 ft H, Provision for accommodating one computer, draws and Cupboards, Granite top	50000	1	50000
8	Circulation Counter (Square)	Wooden Frame, 9 ft L * 2.5 Ft L * 2.5 ft H (4 Sides), Provision for accommodating two computers, draws and Cupboards, Granite top	100000	1	100000
9	Office Table	Wooden 6 ft L * 3 Ft L * 2.5 ft H, Provision for accommodating one computer,	30000	1	30000
10	Office Chairs	Wooden , Seat and Back wired	5000	10	50000
11	Computer Tables	For Digital Library	6000	20	120000
12	Revolving Chairs	For Digital Library	5000	20	100000
13	Book Rack	6.5 ft H * 6 ft W * 2 D , 5Panel, Centre Partition, Leg using GL Square Pipe, Rack using CR Sheets 18g, Powder Coated, Side covering 17 mm Particle Board	30000	50	1500000
14	Slotted Angle Rack	8 ft H * 6 ft W * 1.5 ft D , 8Panel, Centre Partition, Sheets 18g,	12000	30	360000
15	New Arrival Display Rack	Wooden, 4 ft H* 6 Ft L for displaying 18 books, Leg 3 ft Height.	25000	1	25000
16	Aluminium Partition	Partition wall with Aluminium Frame with Particle Board, Glass and Aluminium Mesh, 800 Sqft with 2 doors 3 *7	300000	1	300000
17	Aluminium	Aluminium Frame with Particle Board,	10000	6	60000

	Door	Glass and Aluminium			
18	Furniture Modification	Conversion of Woden Almirah to Double sided rack and Polishing	5000	50	250000
19	Air Conditioner	1.5t for digital library	45000	2	90000
20	Security System	CCTV installation	20000	5	100000
21	Networking and Digitalization	Digitalization and Net working	-	-	1621000
			Total		5000000/-

(ii) Auditorium

The first floor of the proposed Knowledge hub is being constructed for an auditorium with modern amenities covers an area of 1510sqm. The furniture requirement within the auditorium for seating capacity of 775 require an additional support for meeting the furniture requirement. The functioning of the auditorium also require the furnishing of stage, installation of sound systems and stage lighting facilities along with student amenities required within the auditorium during performances.

Requirements

Sl. No.	Item	Number required	Apprx. Cost
1	Executive Auditorium Chairs	775	7750000
2	Sound system with mikes and amplifiers	10	2500000
3	Curtains and lighting for stage	1	5 Lakhs
4	Student amenities in Green room	2	5 Lakhs
5	Electronic podium	1	50000
6	Stage table with Chairs	10	10 Lakhs
Total			1,2300000/-

(iii) New Academic Block under Construction

Inorder to rectify the classroom shortage at the institution a new academic block in three tiers is in construction inside the campus with an area of 3484 sq.m. This building is expected to get completed by January 2023. For the functioning of the 23 classrooms and 3 staff rooms require furniture, digital boards, sealing mount projectors etc. Following is the summary of furniture and other amenities required for this block. Net working of the new academic block with WiFi connectivity is essential to facilitate online classes.

FURNITURE AND AMENITIES FOR NEW ACADEMIC BLOCK

Sl. No	Item	Quantity	Approx. Cost
1	Class Room furniture(4 seater high quality Modern Bench and Desk) for UG Classes with 60 seating capacity	225 Pairs	4500000
2	Class Room furniture (High quality Table and Chair) for PG Classes with 20 seating capacity	100 Pairs	1500000
3	Storage Cup-boards for Staff Rooms	15 Nos	375000
4	Table with Storage Shelves for Teachers	40	1000000
5	Modern Chairs for Teachers	40	800000
6	Black Boards	23	200000
7	Green Boards	23	400000
8	Digital boards	10	500000
9	Wall mount projectors	23	1150000
10	Projector Screen (Wall mount)	23	230000
	TOTAL		1,06,55000

XV. RESEARCH AUGMENTATION AND IMPROVEMENT OF RESEARCH ECOSYSTEM

Generation of knowledge and knowledge dissemination is the prime motto of an academic institution. The success of an institution is dependent on its ability to effectively undertake research and develop new technologies. This also assists students and faculty in comprehending the learning process and aid them in addressing real life situations they are exposed to. Faculty can integrate the learning outcomes from research in their classroom teaching as well as disseminate the knowledge generated in high-quality international/national publications, patents, and other forms of creative expression. For this, the proposal for improving research ecosystem in the college is being submitted.

XV.1. MATERIALIZATION OF CENTRALIZED INSTRUMENTATION FACILITY

At present Govt. Victoria College lack the facility of CIF and the equipment purchased by different departments are kept under the custody of each department, though interdepartmental collaborations and extension of facilities are operational. The utility of each instrument will enhance manifold an the facility can also be extended for research purpose for nearby academic institutions, if an organized facility is being set up at the institution. A proposal is being given to convert the present library building into a central instrumentation

facility with the equipment worth more than 5 lakhs purchased by different science departments.

Sl. No	Requirement	Apprx. cost
1	Re-electrification for CIF	5 Lakhs
2	Aluminium partitioning with Glass doors to keep sophisticated equipment	11 Lakhs
3	Air conditioners	6 Lakhs
4	Networking	5 Lakhs
5	Security system installation	3 Lakhs
6	Purchase of equipment	2 crore
Total		2 crore 30 Lakhs

Technical Assistant Post for Central Instrumentation Facility

The Central Instrumentation Facility houses a wide range of sophisticated scientific instruments and maintaining such a facility ensures a fair utilization among the research community. It also enables the labs with most recent equipment to conduct experiments that aid in developing scientific learning amongst students and in cultivating deeper and profound interest in their respective field of study. The facility must be well equipped with a wide range of instruments for various disciplines. In order to run the facility, temporary posting of Technical Assistant will be required for the smooth operation of these instruments.

Annual maintenance of Equipment

A separate head for fund allocation must be set up under annual plan for meeting the maintenance cost of the equipment for different laboratories and IT facilities. Though the purchase of instruments can be done by using different funds like plan fund, there is no enough fund for its maintenance or meeting AMC charges. So in order to do the same, the plan head should be inclusive of both purchase and repair.

Seed Money

Most of the faculty who are into the system after attaining doctoral degree require support to continue research in the form of initial financial assistance. This will facilitate in establishing research resources in their areas of expertise and will aid in developing innovative or interdisciplinary approaches in research. Such assistance by way of seed money can equip the faculty to approach different funding agencies with minor and major research proposals.

Research Fellowship for students

Govt. Victoria College is a research institution affiliated to University of Calicut and at present 62 Ph.D. scholars are pursuing research under seven different departments. Though many of them are with financial support from agencies of CSIR, UGC and KSCSTE, there are many who are devoid of fellowships where the university allots fellowships only at the university centres. There is an urgent need to increase the number of fellowships and the college proposes a fellowship scheme for research students of government colleges that might be directly under the control of department of higher education, taking in to consideration the socio-economic background of those who get qualified for research. Funding schemes may be implemented for women students with break and those from underprivileged categories.

Software to check plagiarism

Plagiarism software is one of the most important requirement for any institution's evaluation procedure in order to check plagiarism in the academic document. Government institutions find it very difficult to purchase Plagiarism software every year. Implementation of a consortium for availing soft wares including plagiarism among colleges under government may be considered for improving research system at the institution.

Training for students in the emerging methodologies and trends of research

The research is increasingly becoming competent with emerging techniques, technologies and methodologies. Special funds and programs has to be envisioned to update scholars and guides in areas of research in general and in their areas of specialization in particular to be competent as per international standards.

Access to Databases

Colleges in Kerala face several barriers in accessing electronic resources, particularly databases of prestigious journals, making it difficult to achieve the expected level of research quality. Apart from Information and Library Network (INFLIBNET) resources and open access journals, the colleges which are actively engaged in research must have access to prominent journal/abstracts/ reviews databases. Since the subscriptions to international journals are costly, if possible, access may be provided to the government college faculty through MoUs with institutions like, IISER, IIST, State Universities in Kerala etc.

Opportunities for international collaborations

Opportunities and funding to collaborate with international scholars and institutes are negligible and no avenues are being provided for faculty under government colleges. Department of higher education may extend the funding options and opportunities for international collaboration to the government colleges

Industrial and research centre linkage

The importance of academic -industry - research relationships has become the necessity of both academic institution and the industry nowadays. To promote the relationship and facilitate the transfer of knowledge between academic institution and industries, policies may be modified for effective collaborations with research institutions inside and outside the state and the industries associated with each discipline.

Reformation in transfer norms

Transfer of supervising teachers dislocates and disrupts continuity of the work of research scholars. A reasonable period of protection can be given so that we assure continuous and sustainable research.

Reformation in teaching hours of a supervising guide

It is proposed to allow relaxation in classroom teaching for research guides proportionate to the number of scholars they have. The responsibilities of regular teaching and those demanded by supervision of research are most of the time incompatible and cause considerable stress in teachers. One hour per week can be exempted for each research scholar.

Residential facility for research scholars and residential - research campus

The current hostel facilities and norms of the institutions leave provisions to only accommodate students of Undergraduate and postgraduate level. However, scholars from very distant districts and minority groups who enroll with the college to undertake research find it difficult to arrange affordable and safe accommodation in the city. Hence, there is an urgent need to address the same for which funds has to be allocated on a priority basis. Also, as a next step the college would also like to propose a plan for developing a residential - research campus as an extension to the college with upgraded laboratory and dedicated research facilities.

Renovation and modernization of laboratories

At present, the college has individual research labs in different departments and require augmentation to enable research activities. Modernization of labs can provide opportunities for cross-disciplinary learning and research involving multiple departments.

Following are the benefits from the proposed developments:

- The R&D facilities proposed will enhance product and process innovation.
- The advanced laboratory facilities will produce experts and scientists for the nation.
- The advanced lab facilities will improve the quality of research
- Helps diversify and stabilize the local economy
- Local industry will benefit from the facilities
- Mitigation with climate change factors and nature protection

XVI. PROPOSAL FOR ECOFRIENDLY, GREEN, ZERO WASTE CAMPUS

The college campus is green because of the shady trees planted during last few years. Social responsibility especially in the area of environmental awareness and biodiversity conservation has been the need of the hour. Our College has several strategic plans for this purpose and need to be executed.

Sl. No	Item	Amount
1	Cleaning & growing aquatic plants and ornamental fishes in the water ducts	50,000
2	Connect rain water harvesting unit with the Garden	1,00,000
3	Beautify front yard with ornamentals	1,00,000
4	Protect existing trees by cropping and basing with bricks	2,00,000
5	Make the campus "filament free" by the installation of LED & solar lamps instead of tube light	2,00,000
6	Revival of solar panels	2,00,000
7	Aerobic and anaerobic bio-composting unit using canteen waste and food waste	1,00,000
8	Revival of vermicomposting unit	50,000
9	Initiate ecofriendly startups in all Departments	2,00,000
10	Replacing existing taps with water saving Tap	1,00,000
11	Establish bicycle rental programme within the campus (6 Cycles)	30,000
12	Encourage outdoor save energy classrooms for discussions and debate	30,000
13	Install plastic bottle recycling machine	100000
14	Fee for green auditing	2,00,000
15	Conduction of environmental awareness training programme	1,00,000
16	Provision for categorization of degradable and non-degradable wastes	2,00,000
	TOTAL ESTIMATE	19,60000/-

XVII. INFRASTRUCTURE REQUIREMENTS FOR SPORTS

Physical Education Department is one of the major departments in the college. It is a department which can contribute enormously at the time of the peer team visit for NAAC accreditation. Our achievement has reached such a height that in the Olympics held in Tokyo we had a student of ours, Sreesankar, then a student of BSc Mathematics, participated in it.



The development vision envisaged for the next five years is given below in the order of preference.

STAGE 1

1. Cricket nets (near the library and behind the administrative building that is being built)
Concrete Turf
2. Multipurpose synthetic play field (parallel to the proposed cricket nets)
Courts for basketball, handball, netball and tennis
3. Court for ball badminton (parallel to the proposed synthetic play field)
4. Playground for Kho-kho (parallel to the ball badminton court proposed)

STAGE 2

1. Installing metal roofing sheets and proper fencing system for the courts proposed above.
2. Starting Under Graduate degree program in Physical Fitness Management.
3. Upgrading the PE department as a research department

4. A sports facilitation centre, that is, an office, a gymnasium hall, in the newly constructed academic cum administrative building or the present library when they shift to the new building.

5. An Olympic size swimming pool (length-50 meters, width-25 meters, depth-3 meters) having 10 lanes and international standards (on the north-western side of the ground).

EXISTING INFRASTRUCTURE MANAGEMENT

For maintaining the Ground and its field, a sum not less than Rs.1,50,000/- per month is required. This maintenance cost is met by renting out the Ground by fixing users fee from the clubs/ organizations/ for the conduct of their sports programmes and other activities like training and practice. However, the sum collected fails to suffice for maintaining the ground beautifully with international standards.

PROPOSED SPORTS INFRASTRUCTURE

Hockey hard court

Raising, leveling and drainage work is required with an amount of Rs. 50,00,000/-. Further it needs fencing around the field and drainage slabs to complete the work. It is also proposed to shift this hard surface court to an Astro turf Hockey Court, with international standards at its second stage of development.

Indoor Stadium

Though, college enjoys an enviable position with regard to the sports related events of the city, it lacks an Indoor Stadium for practicing indoor sports like Shuttle badminton, Table Tennis, Judo, wrestling, Taekwondo etc.. and for organizing tournaments of Indoor Games, in which the College teams winning championships continuously in the university level.

Lawn Tennis Court

College has a good tennis team which participated in the Intercollegiate Tennis Championship. We do not have a tennis court in the campus or nearby. A tennis court in the college will not only to help our students to practice but also aids to generate income by renting out the court to public for their practice purpose.

Sports Hostel Facility

Most of the college players are coming from distant and remote areas and from unprivileged backgrounds. So they are facing lot of problems and are not able to reach the college for training on correct time. It is also difficult for them to travel long distances and join in training every day and reach back home very late. So, it is highly necessary to have a sports hostel exclusive for the students attending the activities of sports and games in the college.

XVIII. HUMAN RESOURCES DEVELOPMENT

I. Annual Training Calendar For Teachers

Sl. No	Specification	Number of Courses	Number of Hours	Remarks
1.	Research Methodology	2 general and 1 stream wise	10 hrs for each	Science, Humanities Language Commerce Maths streams
2.	Subject specific developments	2 for each programmes	25 hrs for each approximately	Hours vary according to the content and subject
3.	Research Internship		2 months	
4.	Inter disciplinary	5	116 hrs	Number of courses may vary annually
5.	Skill training	2 general and 4 Specific	5 hours each	
6.	Mentoring	1	10 hrs	
7.	Life skills	2	5hrs each	Once in six months
8.	Interpersonal Relations	3	3HRS EACH	Once in six months
9.	Digital literacy	5	10 HRS EACH	
10.	Curriculum Development	5	15 HRS EACH	
11.	Physical and mental Wellness	5	10 HRS	
12.	Ethics and values, civic responsibilities	7	35 HRS	5 hours each
13.	Add on	10	30 HRS EACH	
14.	Service Rules	5	5HRS	Annually
15.	Residence Programme	1	25 hrs	Selected streams

II. Annual Training Calendar for Students

Serial Number	Specification	Number of Courses	Number of Hours	Remarks
1.	Language Skills	2	30 HRS	Offered to all students Department wise
2	Digital Literacy	2	30 HRS	Offered to all students department Wise
2.	Interpersonalrelations	1	25HRS	Offered to all students department Wise
3.	Life Skills	4	8 HRS	Offered to all students department Wise
4.	Physical and mental wellness	5	4HRS	3 courseseach for five Batches
5.	Ethics and values, civic responsibilities	5	25 HRS	Annually one each
6.	Job opportunities	21	45 HRS	Offered to all students department Wise
7.	Research awareness	5	10hrs	PG students
8.	Higher education	21	42 HRS	Offered to all students department Wise
9.	Entrepreneurship	10	15 HRS	Selected students
10.	Student Exchange Programme		2 months	Selected students

III. Annual Training Calendar for Non-Teaching Staff

Serial Number	Specification	Number of Courses	Number of Hours	Remarks
1.	Managerial training with digital data management	1	50 hrs	25hrs each once in six months
2.	Digital Literacy	1	25 hrs	
3.	Physical and mental Wellness	1	25 hrs	
4.	Interpersonal Skills	1	50 hrs	25hrs each once in six months
5.	Life Skills	1	25hrs	
6.	Total quality Management	1	25hrs	
7.	Language skills	1	25hrs	
8.	Ethics and values, civic responsibilities	1	25 hrs	
9.	Service Rules	1	25 hrs	

XIX. Action Plans – Next Five Years

1. New Courses Proposed

The following courses are proposed under this head:

Sl. No.	Name of the Courses proposed	Justification	Employability
1	M.Sc. Data Science	Data is an integral part of any modern business. Collating, understanding and analyzing data helps to win strategies.	Demand for datascience professionals is at an all time high
2	MA Sanskrit	Avenues for Post Graduate learning in Sanskrit is restricted only to university centre and one affiliated college under University of Calicut.	Teaching profession demands post Graduates in Sanskrit
3	MA Hindi	Avenues for Post Graduate learning in Hindi is restricted only to university centre	Teaching profession demands post Graduates in Hindi. Many central organizations employ Hindi post graduates
4	MA Tamil	Avenues for Post Graduate learning in Tamil is restricted only to one of the government colleges in Calicut University	Teaching profession demands post Graduates in Tamil. Many organizations employ Tamil post graduates

2. Introduction of Add on / Certificate courses

College proposes to conduct add on/ certificate courses in the next five years. Each department will undertake at least one programme which will be continued for five years. Department of Botany already initiated one course in 21-22 in Basic Gardening and Plant Propagation. Maximum student strength will be 40/batch. If student preferences are more for a course, more batches will be engaged simultaneously.

3. Village Adoption

As a centre of higher education and learning, college intends to adopt one village by way of support to schools, panchayat for road construction, hospitals as man power support, palliative care, activities by NSS and NCC etc. All the clubs in the college will intervene in the overall development of the selected village and is expected to make a change in the educational and socio-economic background of the village. This will act as a model system by which the student community will closely monitor the problems persist in society and will equip them to

phase the challenges after they come out of the institution. The activities will be accounted as the social service activities of the students.

4. Industry Collaboration

Sl. No.	Industry Collaboration	Process	Remarks
1	Identification	Entrust each department to identify companies/institutions suitable for collaboration	Private, Central and State Government Institutions
2	Incubation centers	Set up an incubation center in collaboration with IEDC of Kerala Startup Mission.	Outsource mentors if necessary
3	MoU's	At least five per department in a period of five years.	In conformation with NAAC specifications
4	Internship	Internship for all PG and UG Students	Minimum 10 days duration
5	Collaborative projects	At least two per Dept in five years	Benefit both teachers and students, individually or collectively
6	Teachers orientation	Industrial Training opportunities for Teachers Orientation and Workshops for Teacher Mentors	Update Teachers' knowledge of industry needs

5. Research

Sl. No.		Next five Years
1	Research Projects	
	Action Research	10 projects
	Academic Research	At least two per dept.
2	Journal	3 (Science/Social Science/Language)
3	Publication Output	One publication per teacher per year One per teacher per Year
	Scopus Indexed Journals/ UGC CARE Books/Conference proceedings	
4	Presentation of Research Papers	
	Faculty members/Research scholars	At least 2 presentation per year per teacher
	Research scholars/students	At least 2 per scholar
5	Organizing conferences/seminar	At least one national conference/seminar per department/per Year
6	Patents	5 (next 5 years)

6.Consultancy

Sl. No.	Consultancy	Number
1	Govt.	1 per year
2	Private	5 per year
3	NGO	5 per year
4	Resource Mobilization	Rs.2 lakhs per year

7. Alumni Engagement

Sl. No.	Mode of Engagement	No. of engagement	Remarks
1	As Experts		
	Orientation (New comers)	At least 1 per year for eachdept. At least 2 per year at college level	Engaging dept. alumni College level alumni
	Career Guidance	At least 1 per year for eachdept. At least 2 per year at College level	Engaging dept. alumni College level alumni
2	Best Practices		
	Knowledge sharing:Invited lectures Erudite lectures	At least 2 per year for eachdept. At least 2 per year at college level At least 1 per year at dept.level	Dept. alumni College level alumni Dept. level alumni
3	Support		
	Internship	Facilitate students to get internship	Sharing internship opportunities in alumniportal
	Job placement	Facilitate students to get job opportunities	Sharing job offers in alumni portal
	Infrastructure	Encourage alumni to fund theme based projects like smart class room, green initiatives, etc. Raise Corpus fund from alumni for the developmentof college, staff and students	Fund raiser campaign through the alumni portal
	Student specific	Institute endowment for students out of Corpus fund. Fund support to Arts festival and specific requirement of students.	Fundraiser campaign through alumni portal

PG & RESEARCH DEPARTMENT OF BOTANY

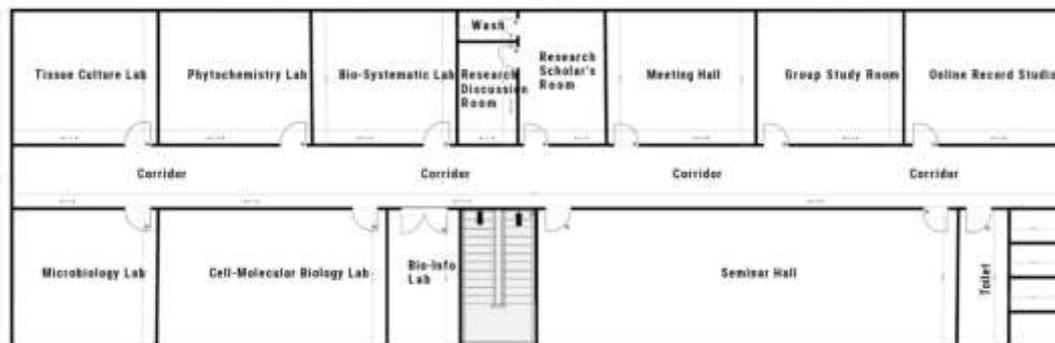
Background

The Department of Botany, Government Victoria College, Palakkad, one of the Center of Excellence in Botany under Govt. of Kerala, focuses on teaching and research services offering Bachelors to Doctoral programs in the field of Botany with a harmonious multiculturalism and hosting students from pan Kerala. The department is indeed a nurturing ground for creative excellence, engages itself as a rewarding and supportive pole to the students and alumni alike. The department aims in providing a professional atmosphere that is unique in the sense that it is fast-paced and exciting with the faculty deemed to facilitate a motivating, comfortable and positive academic impression. Since its establishment, the department had taken strenuous attempts to nurture and develop young minds to love and master the discipline of Botany. The undergraduate programme in Botany took its initiation in the year 1950 and Masters in 1970. The department has been recognized as a research center under the University of Calicut in 2013. Department is functioning in the old heritage building with roof tiles. During monsoon season leakage of roof create problems in the functioning of class rooms and research labs. The plumbing and electrification in this building is also in a pathetic condition. Presently we have only two classrooms and one laboratory for the UG programme. There is no separate lab for complementary subjects. Presently we have 16 research scholars in the departments under various teachers of the department. The subjects like phytochemistry, cell biology, microbiology, anatomy, physiology, molecular biology etc. are having a single research lab. This single lab is shared by the research scholars and PG/ UG students. Tissue culture and bioinformatics labs are not initiated due to spatial constraints. One solution for this is shifting the department into a new academic block. In this proposal we are envisioning the development of the department in the new academic building proposed as Life Science Block.

The proposal for a separate life science block is also justified by the performance index of Botany and Zoology departments by way of academic achievements, research publications in international indexed journals with high impact factor and number research scholars preferring the departments and PhDs getting produced from the departments.



FIRST FLOOR OF PROPOSED LIFE SCIENCE BLOCK



RESEARCH FLOOR PROPOSED FOR BOTANY

Consolidated Statement of Proposal

Sl. No	Item	Amount in Cr
1	Academic block/Life science block	30
2	Facilities Needed in The Academic Block For The Department	
	a) UG and PG Classes	5
	b) Online studio	2
	c) Laboratories for UG and PG Classes	5
	d) Research Laboratories and other Facilities	13.45
	e) Knowledge Hub	4
6	Campus beautification	0.5
7	Human resource development for teachers non -teaching staff and students	0.27
8	Performance indicators	0.33
9	Research	2.4
10	Special initiatives	0.65
11	Equipment purchase for different Laboratories	13.82
	Total	77.42

Total seventy seven core and forty two Lakh rupees only

1. Infrastructure Development (Academic)

Presently the Department of Botany is functioning with insufficient classrooms and laboratories. We are expecting a life science block in this 5 year plan for solving this problem

Sl. No.	Item	Specification (Area, number, seating capacity etc.)	Approx. cost
1	Academic block/Life science block	3 storied with lift facility for functioning of 2 departments	30 crore
FACILITIES NEEDED IN THE ACADEMIC BLOCK FOR THE DEPARTMENT			
a)	UG and PG Classes	a) Digitally equipped soundproof smart UG classes - seating capacity 50 (10 classes), with interactive white board, LCD projector, project screen and smart TV. With tables with plug points and chairs, desks	5Cr

		<p>and benches. Black and white board, Book storage space, speaker Podium and dias. With Working table and specimen racks, wash basins Hanging/ceiling light ; Wifi connection</p> <p>b) Digitally equipped PG classes Seating capacity-30 (4 classes) with interactive white board, LCD projector, project screen and smart TV.</p> <p>With tables and chairs, desks and benches . Balck and white board, Book storage space Podium, speaker and dias.</p> <p>With Working table and specimen racks, wash basins; Hanging/ceiling light; Wifi connection</p>	
b)	Online studio	With recording facilities and for streaming live classes. With Well lit Sound proof room and Tracking Camera	2 cr
c)	Laboratories for UG and PG Classes	<p>a) UG Core lab With table (having storage facility) and chairs With Work table having Storage facility with granite top sink and chemical rack Work tables around inner periphery with granite top ; Interactive White board, black board Storing cupboard for microscope Individual racks and shelves for chemicals, glasswares, charts and apparatus</p> <p>b) UG complementary lab With table (having storage facility) and chairs With Work table having Storage facility with granite top sink and chemical rack Work tables around inner periphery with granite top ; Interactive White board, black board Storing cupboard for microscope Individual racks and shelves for chemicals, glassware, charts and apparatus</p> <p>c) PG Lab for first year and second year students With table (having storage facility) and chairs With Work table having Storage facility with granite top sink and chemical rack Work tables around inner periphery with granite top Interactive White board and black board Storing cupboard for microscope Individual racks and shelves for chemicals,</p>	5Cr

		glassware, apparatus	
d)	Research Laboratories and other Facilities: Totals 13.45 Cr		
1	Cell and Molecular biology lab	AC rooms with false ceiling Uninterrupted power and water supply and fire safety devices. With storage rack, work table with storage facility and sink, Chemical rack and Uninterrupted power and water supply and fire safety devices. Table top gas burners. Microscope cupboards	1 Cr
2	Tissue culture lab	With 3 separate cabins - Working area, inoculation room, incubation room With storage rack, work table with storage and water facility, Uninterrupted power and water supply and fire safety devices, safe waste disposal system	1 Cr
3	Microbiology lab	With 3 separate cabins-Working area, inoculation room, incubation room With storage rack, work table with storage and water facility, Uninterrupted power and water supply and fire safety devices, safe waste disposal system	1 cr
4	Bioinformatics lab	High Speed Workstation Computer –15 nos. Computer tables; Printer ; Scanner	50 Lakhs
5	Biosystematics lab	With storage rack, work table with storage and water facility, Uninterrupted power and water supply and fire safety devices Dedicated herbarium with Automated Herbarium racks; Herbarium dryer ; Poisoning room; Microscope table ; Racks for pickled materials	1 Cr
6	Phytochemistry lab	With a storage rack, work table with chemical storage and sink. Uninterrupted power and water supply and fire safety devices	1 Cr
7	Seminar halls	500 seating capacity	2 Cr
8	Meeting hall	100 seating capacity	50 Lakhs
9	HOD room with adjacent record room	Table and chairs ; Round Table and chairs for discussion ; Attached toilet Record room with racks and storing cabinet	20 Lakhs
10	Staff room	With separate cabins, tables and chairs with adjacent dining and sick room. Storage facility	50 Lakhs

		Digital board Uninterrupted power and water supply	
11	Students toilet	Separate for girls and boys (5 each) Special toilet for physically handicaped and third gender	50 Lakhs
12	Students resting room	With storage rack and water facility With attached toilet	50 Lakhs
13	Research scholars room	With Table and chairs With attached toilet	50 lakhs
14	Storage room	racks with enough storing facility.	20 lakhs
15	Net house	Racks for potted p; ants, water sprinkling facility	50 lakhs
16	Polyhouse	Racks for potted plants, water sprinkling facility	20 lakhs
17	Botanic garden	Pavement paths, ponds for aquatic plants and more planting facilities with uninterrupted water supply.	50 lakhs
18	Mushroom cultivation unit	3 separate cabins for Work area, sterilization room, culture room ; Incubation room	10 lakhs
19	Digital museum room	Racks for keeping QR Coded specimens All in one interactive PC with QR code scanner Working table with Sink Glass cabinet with racks, well lited room and with Display facility With drying and poisoning and pickling room	25 lakhs
20	Digital herbarium room	AC room with dehumidifier ; Sliding herbarium cabinets with vents; Computers; Scanners Microscope ; Type specimen cabinet	1 cr
21	Lab Attenders/ Supporting staff	Table and chairs ; Attached toilet	50 lakhs

2. Knowledge Hub in Life Science Block

In the life science block we need all the facilities for the students and teachers to make it as a knowledge hub

Item	Specification (Area, number, seating capacity etc.)	Approx. cost
Research discussion room	100	1Cr
Meeting and presentation space	250	1.5Cr
Group study room	100	1 Cr
Reading room with bookshelf	50	50 Lakhs

2. Campus beautification

Item	Specification (Area, number, seating capacity etc.)	Approx. cost
Increasing ground cover	All suitable places inside the campus	10 lakhs
Specimen gardens	For maintaining live botanical specimens of practical interest	10 lakhs
Cryptogam garden	For maintaining live cryptogams- pteridophytes and bryophytes	10 lakhs
Butterfly garden	Setting up with butterfly resources to make the campus more green and productive	10 lakhs
Medicinal plant garden		10 lakhs

4. Human resource development for teachers non teaching staff and students

Sl. No.	Item	Number of courses / No. of hours	Approximate cost (Lakhs)
1	Workshop for Higher Secondary and college teachers	1	5 lakhs
2	Research methodology workshop	1	5 lakhs
3	Skill training for teachers on Identification of plants	1	5 lakhs
4	Training on Digital literacy and record keeping training for non teaching staff	1	5 lakhs
5	Training on Botanical Laboratory and field techniques for non teaching staff	1	5 lakhs
6	Competitive exam training for UG and PG students	5	2 lakhs

5. Performance indicators

Sl. No.	Item	Programme	Approximate cost
1.	-Identification -MoU	Forest department ; IRTC Mundur Local academic and industrial institutions like Green Ahalia group	1 lakh
2.	Collaborative projects	With premier and leading institutes across the state and outside the state	10 lakh
3.	Alumni engagement	Classes and training to students by eminent alumni of the department Catering scholarship and financial support to the needy students with the help of alumni	10 lakh
4.	Incubation center	For Placement trainings and placements	10 lakh
5.	Industry collaboration	Collaboration with Ayurvedic industries as facilitators for medicinal plant supply	1 lakh
6.	Career Guidance	Guidance with alumni and other stake holders	1 lakh

6. Research

Sl. No.	Item	Programme	Approx. cost
1	Consultancy	Plant identification, herbarium authentication, plant propagation techniques	10 lakh
2	Presentations/Conferences (Department wise) – Participating and Hosting	Participating and Hosting in national and international conference/ seminar and workshop	10 lakh
3	Research projects	Major and minor projects will be taken by faculties in their specialized areas	2 Cr
4	Academic research	Though UG/PG/Doctoral research	10 lakh
5	Resource mobilization	Summer training programmes for school/ college students Promoting usage of laboratory usage of department to the outside students Exhibition of garden and museum	10 lakh

7. Special initiatives

Sl. No.	Item	Programme	Approx. cost
1.	Rain Water harvesting from department building		25 lakhs
2.	Building of ramp/ lift		10 lakhs
3.	Outreach programme	1.QR Coding of trees in public places 2.Barcoding and Campus flora identification of nearby colleges and schools 3.Giving expertise in concept garden making 4. Facilitating academic support to eligible nearby school students and tribal hostels with the help of students from department	10 lakhs
4.	Waste disposal	Practice and perpetuate different waste disposal systems inside and outside campus	10 lakhs
5.	Green campus	Waste free, plastic free, energy neutral carbon negative campus	10 lakhs

Add on course	Gardening and propagation	15,000/year
Study tour	For PG and UG students	50,000/ year

Instruments to be purchased under 5 years IDP			
Sl No	Name	Specification	Approximate Amount
UG/PG class and Lab			
1	Compound Microscope	Olympus	₹200,000.00
2	Dissection microscope		₹150,000.00
3	pH meter		₹500,000.00
4	Colorimeter		₹50,000.00
5	Spectrophotometer		₹100,000.00
6	Distillation units	Automatic - quarts- 5 L/hr	₹300,000.00
7	Digital microscope,	Projecting type, trilocular set with attached display, USB, HDMI.	₹1,000,000.00
8	Projectors with screen		₹2,500,000.00
9	Hot air Oven		₹100,000.00
10	Weighing balance	Schimadzu	₹80,000.00
Phytochemistry Lab			
1	HPLC	Automatic detector, Natural Products Colum" • Mass range-m/z 10- 15000, Scan speed-2500 u/s., • SIM sensitivity ESI at 400µL/min or APCI at 1000µL/min"	₹1,500,000.00
2	GC-MS	Temperature range: ambient +4 °C to 450 °C • Temperature-programmed ramps: 25 temperature ramps per method • Maximum temperature ramp rate: 120 °C/min for all voltages • Rapid column oven cool-down rate: 400 °C to 50 °C in 4.5 min • Time-programmable detectors with metering, on/off gas controls; up to 3 data channels • Temperature range: 50 °C to 450 °C isothermal 1079 PTV Injector • Maximum temperature ramp rate: 200 °C min • Temperature ramps: 4 Injector EFC • Pressure range: 0 to 100 psi • Total flow: 500 mL/min at 10 psi • Injectors: CP-1177 Split/ Splitless or 1079 PTV (Programmable Temperature Vaporizing) ChromatoProbe™: probe device for solids, large volumes of liquids, or slurries; with 1079 PTV injector. • Source temperature: independent control, 20 °C to 325 °C • Filament: single, 50 to 500 µA • Electron energy: 20 eV, 70 eV or 150 eV • Mass range: Up to 2000 Da	₹5,000,000.00

		<ul style="list-style-type: none"> • Scan rate: Up to 6000 Da/sec • Resolution: 0.7 Da at 1250 Da/sec or 0.6 Da at 500 Da/sec • EI dynamic range: >10⁵ (compound dependent) • Mass axis stability: ±0.1 Da over 24 hours • Transfer line temperature: independent control; 50 °C to 325 °C • Manifold temperature: independent control; 30 °C to 50 °C • Ion detector: positive or negative ions, constant 5 kV post acceleration voltage • MS/MS: triple quadrupole system • Direct Injection Port with 1079 PTV injector: introduce solids or liquids without chromatographic separation. 	
3	HPTLC	Unit With Automatic Loading and Developing Unit. UV and Visible Scanner	₹1,000,000.00
4	Flash Chromatography Equipment	Automatic mixing and developer, UV and Visible Detector, Automatic Fraction Collector	₹1,000,000.00
5	Invertor AC, 2 Tone	Should be rated 5 Star	₹100,000.00
6	-20 Lab deep Freezer	200L Vertical automatic with alarm	₹300,000.00
7	-80 lab deep Freezer	300L Automatic Alarm	₹5,000,000.00
8	Compound microscope With Camera and image visualization system	Trinocular with Built in Camera	₹1,500,000.00
9	Table Top Cold Centrifuge	Should have quick spin, fixed rotors having different tube sizes, timer and temperature function	₹500,000.00
10	Spectrophotometer UV/VIS	250 to 900 Nm, Dual beam, Quartz cuvette, Time drive and Wave length scan function	₹500,000.00
11	LC MS	High performance liquid, chromatography (HPLC), • Mass range-m/z 10- 15000, Scan speed-2500 u/s., • SIM sensitivity ESI at 400µL/min or APCI at 1000µL/min	₹6,000,000.00
12	Rotary vacuum evaporator	with attached Heating bath, Automatic	₹600,000.00
13	Micropipettes (Variable volumes)	.1microlitre to 5 ml	₹1,000,000.00
14	pH Meter	Calibration: Up to 3 points push-button calibration with auto-buffer, Display Type: 3 Digit LED display	₹15,000.00
15	Sophisticated Microscope with camera	Brightfield, darkfield > Phase contrast > Polarization contrast > Differential interference contrast (DIC) > Fluorescence microscopy	15,00,000

16	FPLC	Purification of biomolecules with accurate gradients and high-resolution separations.; Single-Wavelength (UV) Detector for the detection of standard proteins (280 nm) or nucleic acids (255 nm); • Multi-Wavelength (UV/Vis) Detector for greater sensitivity and flexible detection of any biomolecules and chromophores (190-800 nm). Simultaneous multi-wavelength (UV/Vis) detection of up to four wavelengths.	₹50,000,000.00
17	Distillation unit	automatic - quarts/ 5 L / Hr	₹300,000.00
18.	Mixer and grinder		₹15,000.00
Molecular Biology			
1	Gradient PCR	96 Well gradient PCR with Peltier cooling	₹500,000.00
2	Real time PCR	96 Well, With Analysis software • Automated analysis of comprehensive gene expression studies., • Five target Multiplexing, • Multiple data acquisition	₹200,000.00
3	Gel Documentation Unit	Epi and Hypo illumination, Analysis Software	₹400,000.00
4	Ion Torrent next-generation sequencing system	sequencing throughput range of 2M to 130M reads per run.	₹10,000,000.00
5	Ultra Centrifuge	Specifications; Max Speed -100,000 rpm; Max RCF -802,000x g (T-8100); • Clinical Applications; Research Applications ; Cell Therapy; • Temperature range 0°C-40°C; • Thermo-module cooling (CFC/HCFC/HFC-free)	₹5,000,000.00
6	Inverted Phase contrast Microscope	Inverted Microscopes with Camera	₹150,000.00
7	Vertical and Horizontal Gel Electrophoresis	Slab Gel and PAGE	₹300,000.00
Biosystematics lab			
1	Stereo Digital Microscope with 20MP Camera (3 Nos)	Trinocular with Built in camera	₹360,000.00
2	S8 APO Leica Stereo Zoom Research Microscope	Trinocular with Built in camera and software	₹900,000.00
3	Herbarium Dryer	Capable oof Drying 500 Sheets	₹500,000.00
4	Environmental Scanning Electron Microscope	Source of electron, W-Filament,Operational voltage,200 V-30 KV,Source of electron,W-	₹20,000,000.00

		Filament, Operational voltage,200 V-30 KV,Source of electron,W- Filament,Operational voltage,200 V-30 , Resolution, @30KV@High vacuum conditions,2.4 nm,@30KV@Low vacuum conditions, 3.0 nm,@30KV@E-Sem conditions, 5.4 nm, Beam current, 100 µA	
5	Refrigerator	Having temperature range of 2-7 Degree and 300L capacity	₹100,000.00
Mycology & Microbiology			
1	BOD Incubator	Vertical, 300L	₹200,000.00
2	-80 Refrigerator	300L Automatic Alarm	₹5,000,000.00
3	Compound Microscope With Camera	Trinocular with Built in Camera	₹500,000.00
4	Fully Automatic Vertical Autoclave	150L	₹100,000.00
5	Cooling Ultra centrifuge	RPM 16,000	₹200,000.00
6	U V - Vis- Spectrophotometer		₹1,000,000.00
7	Incubator shaker	Automatic temperature/RPM control	₹2,000,000.00
8	Microwave oven	20L	₹40,000.00
9	Double door refrigerator	300L	₹50,000.00
10	Bench top fermentor	Temperature range 0 - 40 degree C, 22 x 40 x 38 cm (W x D x H),Automatic,7.5 kg	₹300,000.00
11	Micropipettes (Variable volumes)	.1microlitre to 5 ml	₹1,000,000.00
12	pH Metre	Calibration: Up to 3 points push-button calibration with auto-buffer,Display Type: 3 Digit LED display	₹15,000.00
13	Pressure cooker	10L	₹20,000.00
14	Induction cooker		₹5,000.00
15	Distillation unit	automatic – quarts	₹300,000.00
16	-20 Lab deep Freezer	200L Vertical automatic with alarm	₹300,000.00
17	Weighing balance	Schimidzu	₹80,000.00
Cryptogamic Botany			
1	Stereo Digital Microscope with 20MP Camera (2 Nos)	Trinocular with Built in camera (For Bryology and Pteridology each)	₹240,000.00
2	Herbarium Storage Rack	Standard Herbarium Cabinets	₹100,000.00
3	Refrigerator double door (2 Nos)	300 L	₹160,000.00

4	Leica Compound Microscope DM 3000	Trinocular Compound microscope with built in Camera and software (For Phycology)	₹500,000.00
Tissue culture			
1	-20 Refrigerator	200L Vertical	₹300,000.00
2	-80 Refrigerator	300L Automatic Alarm	₹5,000,000.00
3	Table Top Cold Centrifuge	Should have quick spin, fixed rotors having different tube sizes, timer and temperature function	₹500,000.00
4	Labline LSC-11 Fully Automatic Vertical Autoclave	automatic, vertical, 22-200l, fr. 50Hz 230V, power 2-6Kw, single phase	₹30,000.00
5	Tissue culture steel rack (Square with light and automatic timer)	PLT-272, 220/230VAC, POWDER COATED	₹240,000.00
6	A/C 2 Ton (with inverter)		₹50,000.00
7	pH meter		₹75,000.00
8	Weighing balance	Schimadzu	₹80,000.00
9	Induction cooker		₹5,000.00
10	Double distillation portable unit (5L/Hr)		₹200,000.00
11	Pressure cooker 30L (with induction base)	30L	₹8,000.00
12	Microwave oven 32L	32L	₹17,000.00
13	Micropipettes	variable volumes 1microlitre to 5 ml	₹360,000.00
		Total	₹13,81,95000.00
Rupees Thirteen Crore Eighty one Lakh Ninety five thousand Only			

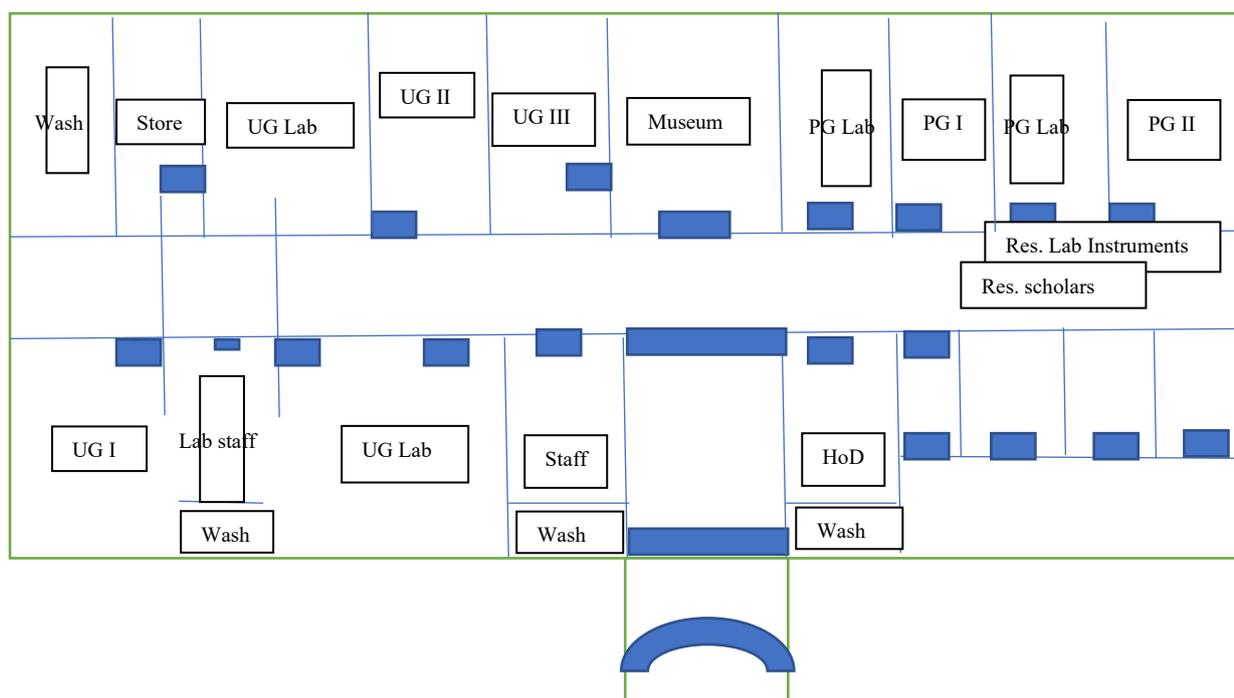
Recurring expenditure for Laboratories

Chemicals Required	
PG and UG lab	100000/year
Phytochemistry lab	100000/ year
Molecular Biology	50,00,000/ year
Cryptogamic Botany Lab	25,00,0/ year
Microbiology	20, 00,00/ year
Tissue Culture	20,00,00/ year
Biosystematics	10,000/ year

POST GRADUATE AND RESEARCH DEPARTMENT OF ZOOLOGY

The second Department that is to be accommodated in the proposed Life Science Block is Department of Zoology. The present building where the department is functioning now will be demolished in the second phase of campus development by KIFBI as per the master plan. Hence this department need to be accommodated along with Department of Botany in the proposed block.

PROPOSED PLAN FOR P G AND RESEARCH DEPARTMENT OF ZOOLOGY



As the department of Zoology is an approved Research centre of Calicut University, in addition to the Class rooms, Labs (2 UG Labs and 2 PG labs), Museum, Chemical store, Staff room, HoD room and Lab Attenders room with attached wash rooms in staff room, HoD room and Attenders room, we need sufficient space for Research activities. It includes the space for discussion, instrumentation room and research labs (Biochemistry, Molecular Biology, Microbiology and Cell culture labs). A common seminar hall is also a basic requirement for research departments. UG classroom (3Nos) should be spacious for accommodating 36 students and PG (2 rooms) for 18 students each.

**Proposal for establishment of Cell and Molecular Biology and Genomics lab in the
Department of Zoology**

Sl. No.	Equipment	Approximate amount	Justification
1	Automated DNA sequencer with microprocessor	250000.00	Basic instrument for research lab
2	Trans illuminator	25000.00	Basic apparatus
3	Microfuge	25000.00	Basic instrument used for centrifugation of low volume extracts
4	Refrigerated centrifuge	500000.00	Low temperature centrifugation of tissue extracts
5	Water bath	50000.00	Basic apparatus required
6	Vertical slab gel electrophoresis equipment with dual casting and loading unit, 16 cm plate along with power pack and vacuum pump	350000.00	Routine requirement for research activities

Sl. No.	Item	Amount	Justification
1	False ceiling of the cell culture lab, Biochemistry lab and Preparation room and Aluminum fabrication	50000.00	Maintenance and renovation of the lab with modern facilities
	Installation of Air conditioner	50000.00	
	UV light for room sterilisation including wiring	25000.00	
	Basic plumbing requirements	25000.00	
	Maintenance of equipment	50000.00	

Routine Consumable requirement of Molecular Biology Facility: 2 Lakhs

Sl. No.	Items	Amount (~)	Justification
1	Nucleotides (dNTPs)	50000.00	Minimal requirement for Mol. Biology expts.
2	Extraction and analytical reagents (Sigma grade)	250000.00	
3	General and Bio-chemicals	200000.00	
4	Glass -wares (pipettes, test-tubes, centrifuge tubes, conical flasks, beakers..etc)	100000.00	

PG and Research Department Chemistry

Among the departments of Govt. Victoria College, Chemistry department is one of the oldest departments. The department is having 11 permanent teaching faculties and among them, 8 are having doctoral degree. The Chemistry department of Government Victoria College is offering bachelors and masters programs in Chemistry. Every year, 150 BSc. and 30 MSc. Chemistry students require laboratory facilities. Apart from this, the department is offering complementary courses for BSc. Physics, BSc. Botany and BSc. Zoology programs (every year 130 students). As per the curriculum of the University, laboratory experiments are essential for these courses. Approximately 280 students are using the laboratory facilities of the Chemistry department. The department is also offering Ph. D programs in Chemistry. The total number of students enrolled for Ph. D program is 5.

We strive to:

Develop a team of competent and qualified faculty

Explore training and development opportunities

Involve in projects leading to high-quality research

Continuously evaluate our performance against suitable benchmarks

Continuously develop new programmes, tie-up with other institutions in and around to meet stakeholder requirements

Leverage on multiple disciplines available across the college leading to consultancy projects

Be cost-effective in operations by performing micro-scale and green chemistry experiments.

Our Vision

To become a center of excellence in chemistry education, training & research

Mission

To impart holistic chemistry education using state of the art technology and infrastructure leading to the development of qualified professionals.

Summary

Sl. No	Item	Approximate cost in Rs
1	Instruments for chemistry research lab	456.7 lakh
2	Modification of the UG, PG and Research laboratories	77.46 lakh
3	Construction and Renovation of Research lab (instrumentation) and Sitting places for Research Scholars.	78.5 lakh
	Total	612.66 lakh

Six crore twelve lakh and sixty six thousand

Sl. No	Equipment	Specification	Price	Justification
1	DYNAMIC LIGHT SCATTERING and ZETASIZER	Software controlled, DLS instrument with the resolution of 6 nm. For zeta measurements resolution should be ± 1 mV. necessary accessories should be provided system for the measurement of particle size in the range of 0.3 nm to 100micrometer, using multi angle dynamic light scattering method, laser sources, - working in Multi-Angle mode, compatible software and system and computer interface. , which can measure minimum samples of 3-5microliters, mobility range ± 15 mS/Vs, maximum conductivity 300mS/cm, with five percent (5%)accuracy, able to work at 50Hz 220-240V supply Accessories :1) viscosity measurement system to calculate diffusion constants for zeta potential. 2) high concentration probes /kit. 3) quartz and glass cuvettes of low volume	40 lakh	Required for PG & research work .Light scattering is a fundamental analytical technique for the characterization of particulate materials, and is most commonly applied to colloidal systems, to determine stability, through the detection of aggregates or agglomerates. This is a prime measuring technique for characterization of nanoparticles and macromolecules in solution or dispersion, to determine [We have published a manuscript using DLS and zeta potential measurements. –“ M. Shanthil, K. Sandeep and P. K. Sajith Cooperative effects of Na ⁺ and citrates on the dissolution of calcium oxalate crystals <i>Phys. Chem. Chem. Phys.</i> , 2020,22, 4788-4792”. (The availability of the instrument in an another institute delayed the publication for one year)

2	Emission and Emission lifetime instrument	<p>With holder for solid state and liquid state, NanoLEDs PPD-850 detector, Time domain monochromator, should measure from few picoseconds to milliseconds. Five excitation sources 300,340 370, 400, 440 and 530 should be provided. Fully software controlled</p> <p>Fluorescence also can be measurable.</p> <p>Fluorescence Spectrometer To measure Fluorescence, phosphorescence and chemi bioluminescence, excitation wavelength 250 nm to 750 nm, Xenon flash lamp with capture time 12.5 ms, scan rate 24000 nm/min. Peltier temperature controlled (20 to 70 deg C)</p>	70 lakh	<p>Fluorescence lifetime spectrometer required for solar cell, photocatalysis and photochemistry-based research. It's a fundamental characterization for emissive molecules and materials. Such sophisticated equipment are not available in neighboring colleges in Palakkad district. It is highly useful for MSc and BSc projects and research purposes.</p> <p>Required for measuring the optical properties of organic molecules, carbon dots, nanomaterials</p> <p>[We have published a manuscript using emission and emission lifetime measurements. – " K. Sandeep and C. P. Reshmi Modulating the emission of CsPbBr₃ perovskite nanocrystals via thermally varying magnetic field of La_{0.67}Sr_{0.33}Mn_{0.9}(Ni/Co)_{0.103}AIP <i>Advances</i>, 2020, 10, 035302". The availability of the instrument in an institute delayed the publication for six months.</p>
3.	Confocal Raman Microscopes	<p>Compatibility with a wide range of laser wavelengths, three excitation source ~ 450 nm, ~ 632, ~ 750 nm. Possibility of mounting up to three detectors enables the measurement wavelength range to be extended from 200 nm to 2200nm. fully automated intelligent design, ensures ultimate performance coupled with ease of use software enabled.</p> <p>Simple access to very low frequencies down to 5cm⁻¹with a high throughput single stage spectrometer. The notch and bandpass filters should allow additional sample characterization</p>	55 lakh	<p>Required to determine the association constant of molecule-molecule, molecule-metal interaction and also important in biological studies. Also, It is a characterization tool for materials. It is a research equipment.</p>

		of solution and solid, thin film measuring accessories.		
4.	UV Reactor	Compact 16" high, 12" square. Reactor Barrel is 10" in diameter, 15" deep. The unit weighs approximately 35 lbs. Ultraviolet lamps, convenience outlet, and fans are controlled by switches on control panel. The reactor comes supplied with (16) 14 watt lamps. Wavelength 250, 340, 380 nm o water cooling required. Normal operating temperature is approximately 35°C with fan in operation. Without the fan the temperature is approximately 60-70°C. This unit plugs into convenient 110/120 AC current, 50/60 cycle.	1 lakh	Photocatalysis is one of the major green synthetic protocols in Chemistry. For that purpose, UV reactor is essential for conducting the experiments. It is highly useful for MSc and BSc projects and research purposes.
5.	FTIR Spectrometer	7,800 to 350 cm ⁻¹ measurement range Accuracy 0.01 cm ⁻¹ , single beam source 45° Michelson interferometer Corner cube mirror interferometer, with auto-alignment mechanism, sealed structure, two detectors (low-temperature possibility), ATR, Pellet measurement possibilities should be provided, pelletizer should be provided as an accessory. Should provide with DRS for near IR region.	20 lakh	IR spectrometer is one of the basic characterization tools in chemistry.. It is highly useful for MSc and BSc projects and research purposes.
6.	X-Ray Diffractometer (XRD)	Cu anode X-ray tube Cu anode X-ray tube Full set of interchangeable aperture slits Computer with original software (Windows based) 2700 W Medium frequency high voltage generator Integrated measuring electronics with scintillation detector Fully Interlocked radiation housing Manuals and schematics 5-year warranty against component failure under normal use Diffracted beam monochromator Digital phi stage (rotation controlled by stepper motor) Grazing incidence attachment (for thin films) 9 position sample changer Theta/Theta goniometer or	50 lakh	XRD is a common characterization tool for materials. X-ray diffractometer is helpful for the researchers from chemistry and physics. In the Chemistry department, we are synthesizing lead halide perovskites, carbon dots, silver phosphate, graphene, magnetic materials etc. For the characterization of the materials now we are using the XRD instrument of STIC-CUSAT. Travelling and the availability of instruments delay the research works. It is a

		<p>Theta/2Theta goniometer conversion Closed loop water chillers Automatic variable slits High Temperature stage KSA Energy dispersive detector Operate as an EDXRF detector for elemental analysis (optional software required) Pattern analysis software Whole Pattern Fitting (WPF) (Rietveld) analysis Search/Match qualitative phase analysis (requires pattern database) Calibrated quantification</p>		research equipment.
7.	Bench Top FTNMR	<p>Operating frequency 80 MHz (1H) Operating frequency 80 MHz (1H) Nuclei: 1H, 13C Resolution: 0.5 Hz @ 50% peak height < 20 Hz @ 0.55% peak height. Sample size : standard 5mm diameter, 7''-long NMR tubes No infrastructure required external, (no deuterated solvents needed) 18-28°C, typical temperature variations < +/- 1.5°C Fully automatic and software-controlled</p>	50 lakh	Required for the analysis and estimation of optically active molecules and materials. NMR is a fundamental tool to characterize organic molecules. It's a necessary instrument for doing research in synthetic organic chemistry. FT-NMR is useful for PhD research and MSc project students. Now such equipment is not available in Palakkad district. It is a research equipment.
8.	UV-Vis Spectrometer	<p>Double beam spectrometer Working range 190 to 3000 nm, 3 detectors (preferably PMT, InGaS, and PbS), 0.01 nm resolution. DRS facility should be included for solid samples Software-controlled operation.</p>	20 lakhs	UV vis spectrometer is one of the basic toll for characterization of materials and molecules/natural materials. It is highly useful for MSc and BSc experiments/ projects and research purposes.
9.	GC/MS	<p>Advanced gas chromatograph with mass spectrometer. Two narrow coloumn compatible with various solvents Easy injection inlet</p>	40 lakh	Very important to analyze the molar mass of the synthesized organic compounds and natural products. Mass spectrometry is one of the basic characterization tools in chemistry. It is research equipment.

10.	Autoclave	SS Autoclave Hydrothermal Synthesis Reactor Kettle PTFE Chamber 100 mL, 300 mL & 500 mL	1 Lakh	Required for the synthesis of nanomaterials.
11.	Microwave Oven	Convection Microwave Oven (Capacity 20-30 litres, Voltage 230 Volts Wattage 800-1500 Watts, Maximum Item Weight 18 kg	0.20 Lakh	Required for the synthesis of nanomaterials.
12.	Fluorescence Spectrometer	Singlet and triplet measuring facility (200 to 3000 nm) resolution 0.1, two detectors (PMT and NIR detector). Should support solid and liquid samples. Xe arc lamp excitation double monochromator should be available in the excitation and emission chambers. Software-controlled operation.	60 Lakh	Helpful for studying the photophysical properties of a molecule. Essential for the characterization of direct band gap semiconducting materials. It is highly useful for MSc and BSc experiments/ projects and research purposes.
13.	UV lamp with cabinet	TLC UV Cabinet, Power: 220 V, Size/Dimension: 15"x12"x10 UV Chromatography inspection cabinet useable for viewing and detecting separate substances on TLC Layers. Features Compact Lightweight, Transportable, Economical cabinet. Separate long UV (365 nm), Short UV (254 nm) & visible sources Long and short wave UV sources All-metal epoxy powder fused housing for rugged dependability. UV absorbing matt black finish inside gives high sensitivity.	0.20 Lakh	Required for the detection of newly synthesized compounds and molecules.
14	TGA/DSC Thermogravimetric Analyzer with small furnace	Temperature range RT to 1100 °C. Heating rate 0.02 to 250 K/min. Crucible volume Up to 100 µL Dynamic weighing range 1/5 g (depending on balance model) Balance resolution 0.1/1 µg (depending on balance model) Weighing accuracy 0.005% Weighing precision 0.0025%	6.00 Lakh	Required for studying the phase transformation of newly synthesized compounds and materials.
15	Hot Air Oven Stainless Steel Chamber	Hot Air Oven Stainless Steel Chamber Double-walled Suitable For Laboratory Inside Stainless Steel and outside Mild steel Sheet Powder Coated Temperature +5° ambient to 200° C	0.30 Lakh	Required for drying of glassware.

16	Flame photometer for Na ⁺ , K ⁺ , Ca ²⁺ , Li ⁺ and Ba ²⁺	Na ⁺ , K ⁺ , Ca ²⁺ , Li ⁺ and Ba ²⁺ filter is needed and should be operated using LPG	2 lakh	Required for the water and soil analysis and estimation of Na ⁺ , K ⁺ , Ca ²⁺ etc.
17	Impedence measurement Setup for CH-electrochemical workstation with appropriate electrode	It should be attached with our CH instrument could be operate in the presence of light and ambient conditions	3 lakh	Currently we have a CH instrument, and it doesn't include the Impedence measurement Setup. It is required for solar cell fabrication studies.
18	Rotavapor full setup (heating tub, vaccum and chiller)	Rotavapor condenser vertical type, angle 50 degree., electronically maintaining, rpm upto 280, heating tub 2kg boiling temperature range rt to 100 degree. Capacity 4 to 5 litres. Vacuum upto 760 mmHg. With vaccum control and still. Chiller temperature range-10 degee to rt capacity 5litre.	8 lakhs	It's needed for the isolation and purification of organic compounds from reaction mixture or from crude material. Very much essential when considering synthetic organic labs and therefore students can't work in this area without this instrument.
19	Two nos of UPS 10 KV with required tubular batteries	we have 3 KVUPS and it is insufficient	10 lakh	It is required for such sophisticated equipments and need for smooth running.
20	Microwave-Ultraviolet-Ultrasonic Synthesis/Extraction with Pressurised Reactor	Microwave Frequency - 2450 MHz Installed Microwave Power - 1800 Watt External Structure - Stainless Steel Internal Microwave Chamber - 45 L, Corrosion Resistant, Industrial Grade 316 Stainless Steel Chamber Maximum Output Power - 1000 W, Non-Pulsed Continuous Automatic. Variable Frequency Control with an increment of 10 Watt. Temperature Measurement - High Precision German Engineered IR and Control System sensor operating from 0°C to 300°C, Precision : +/- 1°C (Threshold temperature-Ambient to 350°C). Platinum (Pt) Resistance Temperature Monitoring- HD Camera with external 4.3'' TFT Display: Main-Display-Large (7'') Wide-Format, High- Resolution (800 x 480). Ultra-Violet irradiation of -300 and 365nm. UV Light Power - 300W. Ultrasonic Setup -Ultrasonic Working Frequency : 26 to 28	20 lakh	Green synthesis of heterocyclic/medicinal compounds, nanoparticles, synthetically important polymers, etc. (One of our latest work published "Expeditious synthesis of highly substituted 3(2H)-furanone and quinoline by microwave assisted reaction between aldonitrones and dibenzoylacetylene" John P R et.al. New J. Chem., 2022. DOI: 10.1039/d2nj00991a)

		KHz; Power Regulation range 0 to 800 W. Memory- 32 GB Expandable Memory Safety - Intelligent Overheat Cut-Off. System cooling, malfunction warning. Door ajar warning. Magnetic Stirring - High Speed Magnetic Stirring, Stirring speed is adjustable and displayed on the screen. Stirring speed- 2400RPM. Inert Gas Purging facility, Reflux and Vacuum. Volume of glass or flask - 25 ml, 50 ml, 100 ml, 250 ml, 500 ml. Volume of Quartz- 100ml, 250ml Operating Voltage 220/240 VAC. 50/60 Hz, 15 Amp Dimensions - 655 mm x 510 mm x 455 mm (WxDxH) Net Weight - 56Kgs Attachment for High Pressure Vessel with Software integration on the instrument Vessel Volume – 100ml Inner Vessel - TFM Outer Jacket – Composite Aerospace Material		
		TOTAL	456.7 lakh	Four crore fifty six lakh and seventy thousand only

Proposal for the Modernization of the Chemistry laboratory

The present condition of the UG and PG laboratories are not in good condition to carry out the routine wet laboratory experiments for UG and PG students. The worktable and the sink are to be replaced and new ones are to be installed. Also we need to construct the side cupboard and slabs for arranging the reagents and chemicals. Very recently the university has increased the number of seats in UG programmes of Botany and Zoology, for which chemistry is a subsidiary subject. The present condition of the research laboratory is also not good. This needs modification with work benches and sinks. Hence we propose the following things.

Modification of the UG, PG and Research laboratories - 77.46 lakh

(Modular labs are proposed, Sketch and individual item price mentioned below)

S. No.	Description	Dimension	Qty.	Unit Price	Total Price(Rs.)
1	CENTRAL WORK BENCHES	3500L x 1200W x 900H mm	20	192,000.00	3840000
2	SIDE WALL WORK STATION	7350L x 750W x 900H mm	6	174,000.00	1044000
3	3 SIDE WALL WORK	STATION 3000L x 750W x 900H mm	6	60,000.00	360000
4	SIDE WALL WORK STATION	8800L x 750W x 900H mm	6	210,000.00	1260000
5	FUME HOOD	1500L x 750W x 2400H mm	4	180,000.00	720000
6	WALL STORAGE CUPBOARD	900L x 300W x 600H mm	25	10,800.00	270000
7	EMERGENCY SHOWER UNIT		3	18,000.00	54000
8	Plumbing, Electrical & Flooring work		3	66,000.00	198000
TOTAL					7746000



Construction and Renovation of Research lab (instrumentation) and Sitting places for Research Scholars

Sl. No.	Item	Amount in lakhs (Rs)	Existing Facilities	Justification		
1	Renovation of Research Lab, Renovation of Research Lab, Reinforcing the walls, concreting and false ceiling, painting etc Renovation and Fixation Island table with aluminium fabrication rack. Plumping and Joinery works, with all safety features for a chemistry lab.	15 lakh 10 lakh	The present condition of the laboratory is not in good condition to carry out the routine wet laboratory experiments for research	Urgently need to renovate the present research lab. furnishing the lab for research and sitting place (High Priority) We need to construct the side cupboard arranging the regents and chemicals.		
2	Research scholars sitting room/ rest room with toilet for Research Scholars and PG students of chemistry department Fixing Racks, glass doors and partitioning (Aluminium fabrication)	25 lakh	No facility available or insufficient facility	Rest room and sitting places for research scholars are necessary		
3	Annual Maintenance and repairing of equipments and UPS, UV-Vis Spectrometer, Table top FTIR spectrometer, Cyclic Voltametry and Fluorescence Spectrometer	7 lakh		AMC is required to manage such sophisticated instruments and possible replacement of the parts for one year 2021-22. Kindly note that altogether these instruments cost 30 lakhs.		

4	Rain water harvesting system for distilled water purpose in Chemistry dept.	1.5 Lakh	No facility available	Distilled water is needed for lab purpose.		
5	Three phase wiring in the department of chemistry including BSc, MSc, Research labs and other rooms. Fixing of ELCB, MCB, distribution boards and exhaust fans and necessary lighting facility with 5 Amps, 15 Amps, 32 Amps, Plug sockets and switches, wherever it is necessary.	20 Lakh	At present, no proper earthing and power fluctuations etc	Justification: The present wiring does NOT meet the power requirements of the laboratory and it causes frequent fluctuations which results in the damage of various equipment. The laboratory has highly power consuming instruments like furnaces, ovens, vacuum pumps etc. Uninterrupted power supply is very essential for the smooth functioning of many of the sophisticated instruments and this will increase the lifetime of the instruments.		
	Total	78.5 lakh				

POSTGRADUATE DEPARTMENT OF MATHEMATICS

Up gradation as research department and enhancement of computational facility

At present the Department has 4 faculty members with PhD and one with MPhil. The others are pursuing research leading to PhD. The Department proposes to apply for recognition as a Research Centre affiliated to University of Calicut. The students in the Department are very enthusiastic and have done well both at undergraduate level and post graduate level. Moreover many students who seek admission for PhD in Mathematics are not getting research supervisors. So if the department of Mathematics of this college is upgraded as a research department it will be an enormous step towards helping these research aspirants. The branch of numerical computation techniques, algorithms and related studies, data analysis, numerical linear algebra computational Biology etc are the important areas which have gained prominence in the recent years. Hence it is imperative that the department set up a good computer lab. Besides this will help the UG and PG students to opt these topics for their project. Moreover this will encourage the department to offer computer programming papers as electives at the UG and PG level.

Anticipated estimate of fund required with specification is given below.

University affiliation fee and other expenses related the up gradation to a research department: **Rs. 30000**

	Item	Rate per unit	Specifications	Justification	Estimated Cost
1	10 (Ten) Desktop PC	Rs. 30000	Dual core 8 th gen M/b gigabyte 4 gb ram 1 tb hdd ATX cabinet Mm keyboard mouse 18.5 led monitor	As explained above	Rs. 300000
2	One 5.2 KVA inverter with 6 RC 18000 batteries	Rs150000	Type: Pure Sine Wave Inverter Voltage: 72V x 72V Frequency: 50amp x 50amp Battery Included W x H: 35 x 45 cm	Given above	Rs 150000
Rs four Lakhs Fifty thousand only					Rs.450000

2. Setting up smart class rooms

Getting along with the new trends in education the department wishes to make all its class rooms ICT enabled and with interactive white boards.

Two interactive boards and related equipment with approximate cost: **Rs 3Lakhs**

3. Annual interactive programme/ Lecture series

The Department wishes to conduct interactive programme/ Lecture series with eminent Mathematicians all over India. It also proposes to send its faculty members for summer schools, Refresher courses and workshops held in prestigious institutes and Research Labs. It also proposes to conduct Mathematics training and nurture programme for undergraduate and post graduate students. Besides we wish to send the students of our Department for summer schools, winter schools and other training programmes to be held in institutes such as IITs, IISc, TIFR, ISIs, ISERs etc. The Department may require financial assistance to bear the TA, DA and registration fee and other expenses for all these programs.

SI No	Head	Approximate amount expected
	TA/ DA/ Remuneration for Resource persons visting the college for Lecture series and training programmes	Rs. 2 Lakhs
	Travel/ Accommodation expense of students attending Training programmes and summer schools	Rs 1Lakh
	TA/ DA/ Registration fee for teachers attending refresher courses and training programmes	Rs 2.25 Lakhs
	Contingency	Rs. 50000
	Total	575000

POSTGRADUATE AND RESEARCH DEPARTMENT OF PHYSICS

The Department of Physics at the Government Victoria College was founded in 1939 and has a long and illustrious history. The department functions on the first floor of a quadrangle structure that boasts heritage status. The department offers three different degree programmes: BSc, MSc, and Ph.D. The BSc program in Physics was introduced in the college in 1939 and the MSc program in Physics in 1960. In 2012, the department was recognized as a research center of the University of Calicut.

The department has eleven highly qualified faculty to assist students in their quest to learn science. The current faculty include Associate and Assistant Professors. Most of the faculty members of the department are PhD holders and the rest are pursuing PhD. Five teachers in the department are research guides of the University of Calicut and 10 students pursue doctoral research in the department. There are 5 non-teaching staff in the department for assistance. There are five classrooms, four laboratories (one of which is a computer lab), and two research laboratories in the department. The faculty are skilled in using ICT in handling class room sessions. Faculty in the department use LMS portal in order to provide a digitalized method of teaching-learning experience. UG and PG programs offered by the department are one of the most sought after in the University of Calicut among aspiring students and the course demand ratio is increasing every year.

The department gives students from all walks of life a great chance to succeed in their careers and become socially responsible citizens. The majority of the department's students come from rural areas and receive government scholarships under various programmes. Our students secure university ranks for UG and PG programs every year. More than 60% of the students pursuing BSc in Physics go for higher studies.

Table 1: Courses offered by the department

Course	Subject	Duration	Sanctioned Strength
BSc	Physics	3 Years (6 Semesters)	48 (Statutory), 55 (During Covid pandemic)
MSc	Physics	2 Years (4 Semesters)	12 (Statutory), 15 (During Covid pandemic)
PhD	<ul style="list-style-type: none"> ● Novel materials, functionalities and their potential applications in the field of optical, electrical, semiconducting, magnetic, bio-sensors etc. ● Applied Electromagnetics 		

The thrust area of research at the dept. of Physics are material science and applied electromagnetics. The department has carried out several major and minor research projects with funding from KSCSTE, UGC, DST and SERB. The department maintains high standards

in research publications and the majority of the department's articles appear in journals with high impact factors. It conducts National seminars/ Workshops every year to disseminate recent trends in science research. Research laboratories of the department are equipped with modern sophisticated instruments, and are funded with DST-FIST programme for augmenting facilities for science research.

Students from the department consistently perform well in competitive exams like NET, GATE, JAM, and others and the numbers are seen to be increasing by year. Over the course of years, a reasonable number of UG students from our department have been placed in reputable organizations. Others are in their pursuit to qualify for competitive examinations. Most of the PG students are working in public or private sector institutions; some of them have received prestigious positions in research institutes as doctoral fellows, faculty etc.

Table 2: Research infrastructure at the department

S. No.	Name of Equipment	Price in Lakh	Year
1	Physical Vapour Deposition (PVD) Unit	4.25	2018-19
2	Chemical Vapour deposition (CVD) Unit	9.18	2018-19
3	Spin Coater	1.25	2018-19
4	Compact Hi-Sensitive Spectrometer, Wavelength range: 200nm to 1100nm, for transmission, absorption and reflection.	8.16	2018-19
5	Monochromator, Wavelength: 300 nm to 700 nm, FWHM less than 8 nm with xenon Lamp (Power 100W)	2.62	2018-19
6	Red Blue and Green lasers (635nm+520nm+445nm) with variable power upto 1 W	1.94	2018-19
7	Network Analyzer with Spectrum Analyzer (Anritsu MS2038C)	24	2018-19
8	Probe Sonicator	2.16	2018-19
9	LCR Meter and probes	3.5	2015
10	Source Measuring Unit	4.75	2016

A few of the alumni of the department work at reputed organizations like DRDO, VSSC, ISRO, IITs, TIFR, IISERs, and other international universities. The department is continuously striving to popularize science in society and conducts various outreach activities. The department plan to focus its developments in the following three aspects:

- Teaching and learning/ Student support:** We plan to introduce skill-based programs, add-on/ certificate courses etc. for our students. Bridge courses will be introduced for UG and PG students to help them sharpen their professional competency. We also plan to

conduct remedial coaching for weak students. MoUs will be initiated with leading institutes for student projects, academic programs and research. Alumni engagement will be strengthened to support students from the department.

2. **Research:** We will work on introducing outreach programs, industry tie-ups in research etc. Research infrastructure will be expanded and the facilities will be extended for research scholars/ UG, PG students from nearby institutions. We will seek to raise funding through major and minor research projects, with a focus on producing high-quality research output.
3. **Social:** The department will conduct workshops/ seminars for popularizing science in society. For school going students, we will organize science popularization programs and open laboratories for visits and demonstrations. Awareness on energy conservation will be promoted by introducing energy auditing to students.

To achieve these goals, the infrastructure facilities in the department have to be strengthened. At present, the department is functioning in a building that has heritage value. The structure as well as its electrical wiring needs serious upgrading. During rain, there is severe leakage in various places in the building, especially in the BSc general lab. The department lacks toilet facilities for exclusive use by women. Other urgent civil repair works include floor tiling of the MSc Electronics lab and staff room where the old tiles have broken. The electrical wiring in the department is as old as the department and has been done using Aluminum wires. These are not energy efficient and the circuits have already been broken here and there. Circuit failure is regular in our BSc final year class where we perform ICT enabled classes and organize departmental functions and seminars etc. Old electric wiring is also an impediment to connect equipment like Digital Storage Oscilloscopes (DSO) for UG and PG labs and advanced research equipment. Hence we submit this proposal for funding to build necessary upgradation of the departmental facilities.

Proposal Summary

Sl. No.	Head	Amount
1	Information and communication technology and modernization	5019562
2	Infrastructure upgradation, development and maintenance	
	(a) Electrical and civil works	3460000
	(b) Infrastructure (Furniture and other items)	490000
	(c) Sophisticated Instruments	32000000
3	Students support, welfare and outreach	1000000
4	Academic Excellence in learning, teaching and research	625000
	Total	42594562

1. Information and communication technology and modernization

Sl.	Item	Quantity	Amount	Total	Justification
1	Desktop Computers for Computer Lab - Core I5, 6 GB Ram, 1 TB Hybrid SSD and HDD, Liscenced Win 10 Os, 19.5 " Monitor, DVD RW, 3 Year Warranty, Leading brands may be quoted	30	55000	1650000	7 systems for research scholars to interface computer-controlled instruments and to install and run softwares related to research. 3 systems to install at staff room. 20 systems at Physics computer lab for MSc and BSc Project works and computational Lab
2	Workstation With Intel Core i7 10700 Processor 64 GB - Intel Core i7 10700, Number of Cores per Processor 8, Cache (MB) 16, Graphic Card Description: nVIDIA Quadro P400 2GB, Operating System (Factory Pre-Loaded) Windows 10 Professional 64 bit, DDR4 64 GB, RAM Expandability upto using spare DIMM Slots (GB) 128, SATA 2000 GB, 7200 RPM, RAID level 0,1, Number of RAID Controller Ports 4, Speed of RAID Controller Ports (Gbps) 6, Display Size (cm) 68- 71, Display Resolution (Pixels): 1920x1080, Keyboard, Mouse, On Site OEM Warranty (Year) 5	2	277983	555966	For doing Computation Physics Simulation in Density Functional Theory for modelling smart materials for nano science applications and for the simulations in Applied Electromagnetics Lab
3	IPS Digital interactive Flat Panel (white board) with pen - IPS, 65" 360 nits, 20 point touch, slim IR, RAM: 3GB DDR4, Storage: 16GB, Dual pen, Android 8.0, Interactive Flat Panel, UFT (Ultra Fine Touch) Technology, digital whiteboard software, Dual-pen writing with 3mm/8mm diameter, pen tips, Ambient Light Sensor, SPEAKERS: 15WX2, ENERGY STAR® certified, with	2	185000	370000	One of the panel will be installed in the proposed seminar hall at the III BSc class room at the department. The other one will be installed in the PG class room. This display panel will help teachers to take online classes also.

	Installation and Wall Mount				
4	<p>WUXGA projector with suitable wall mount and accessories- Projection Technology: 3LCD Technology, RGB liquid crystal shutter, LCD Screen: 0.67 inch with MLA (D10), Colour Light Output: 3,800 Lumen- 2,440 Lumen (economy), White Light Output: 3,800 Lumen - 2,440 Lumen (economy) in accordance with ISO 21118:2012, Interface: USB 2.0 Type A, USB 2.0 Type B, RS-232C, Wireless LAN IEEE 802.11b/g/n (WiFi 4) (optional), VGA in (2x), VGA out, HDMI in (2x), Composite in, Component in (2x), RGB in (2x), Stereo mini jack audio out, Stereo mini jack audio in (2x), Wired Network, MHL, Microphone input, Focal Length: 20.42 mm - 24.5 mm, F-number: 1.5 - 1.71, Screen Size: 30 inches - 300 inches, Zoom: Manual, Factor: 1.2, Contrast Ratio: 15,000:1, Sound Output: 2 Watt, Aspect Ratio: 16:10, Lamp Type: UHE, 210 W, 6,000 h durability, 12,000 h durability (economy mode), Accessories: VGA Cable - 25 Meters, HDMI cable supporting sound (HDMI 2.0) - 25 Meters, Power cable - 10 Meters, Ceiling and wall mount with bracket for projector, Remote controller, Installation required</p>	2	70000	140000	The number of working projectors in the department is less than the actual requirement. New projectors are required specially to the proposed seminar hall.
5	<p>Short Throw Projector and accessories for wall attachment - Resolution 1280 x800 (WXGA), Brightness 3600</p>	4	115700	462800	These will be installed in all UG, PG class rooms for ICT enabled lectures

	Lumens, Shortthrow (0.41 to 0.9) Light Source type (UHP/UHE/UHM), Light Source Life minimum 6000 Hrs, HDMI Port 2, Audio in/out, video in/out, USB ports, LAN connectivity, inbuilt speaker, Light source warranty 1 year, OEM onsite warranty 2 years, Wall accessories and installation required.				
6	Wall Spring Action Projector Screen - 6ft. x 8ft 120-inch Diagonal in 4:03 Aspect Ratio, Spring Action Mechanism (No Autolock/Instalock Mechanism) to hook the screen at the bottom to stop, High quality matte white fabric, preferably Compatible with Ultra HD 3D 4K Technology, Make in India	5	4500	22500	These will be installed in all UG, PG class rooms and research laboratory.
7	Analog Mixer PA Amplifier - Number of Channels-2, 6 Mic & 2 Aux Inputs., Treble (at 10 kHz) 10 decibel, Frequency Response 10000 Hertz, Signal to Noise Ratio 66 decibel, Impedance 4 Ohm, Power Output 1200 Watt, Input Channels Mono 6 × Mic 0.6mV/4.7kΩ, 2 × Aux 100mV/470kΩ, Stereo L/R 250mV/47kΩ, Warranty 1 year	3	18400	55200	PA system is required to conduct departmental events
8	Laptop computer - Latest Generation Intel®Core™ i5 (8MB Cache, 2.4 GHz to up to 4.5 GHz, 4 cores), NVIDIA® GeForce GTX® 1650 Ti 4GB GDDR6, 3-Cell Battery, 56Whr (Integrated), 15.6-inch FHD (1920 x 1080) Anti-glare LED Backlight Non-touch Wide Viewing Angle Display, 8GB, onboard, DDR4, 2933MHz, 512GB M.2 PCIe NVMe Solid State Drive, Microsoft®Office Home and Student 2019 (Included in price), 1Y In-Home Hardware Service, Windows 10 Home original	10	95000	950000	For online content creation, use in the proposed seminar hall etc.

9	Full HD Camcorder with Stabilized Optical Zoom and Memory Card - 90x Intelligent Zoom / 50 x Optical zoom, 1080p HD Video, Level Shot Function And 5-axis hand-shake detection, Wi-Fi Function with NFC, Live MOS Sensor Microphone Input, Image Sensor Size: 1/5.8" BSI MOS Sensor, 35 mm Film Camera Equivalent (Motion Image) 28.0 - 1740 mm [16:9](O.I.S. Standard Mode, Level Shot Function: OFF)), Effective Pixels (Motion Image) 2.20 megapixels [16:9] (O.I.S. Standard Mode, Level Shot Function OFF), Image Sensor 1/5.8-type BSI MOS Sensor, Total Pixels 2.51 megapixels, Intelligent Zoom ON 90 x (O.I.S. Standard Mode, Level Shot Function: OFF), Recording Media SD/SDHC/SDXC Memory Card, Digital Zoom 150 x / 3000 x (The maximum value of zoom magnification can be set in two patterns), Recording Format [AVCHD] AVCHD Progressive/[iFrame / MP4] MP4, Optical Zoom 50 x, Intelligent Zoom OFF 62 x (O.I.S. Standard Mode, Level Shot Function: OFF)	1	45000	45000	For online content creation, recording of invited lectures in the department, recording of events etc.
10	Multifunction Printer machine - LASER multifunction machine, mono, dual component, A3 flatbed size, Developer Unit, scanning, duplexing, LAN and wifi, wifi direct, yield of cartridge 5000, life of drum 75000, OEM warranty 1 year	1	79896	79896	For the proposed reprographic facility in the department of Physics
11	Digital Lectern (Lecture Podium) with UHF wireless Mic - Connection: 1 aux input, 2 MIC inputs, 1 line output and 1 REC output, 60W rated power output, 60W column speaker with one tweeter and three woofers, One gooseneck MIC and one	1	45000	45000	For the proposed seminar cum lecture facility at the III BSc class room.

	lamp, Black finish, wooden top and steel bottom, steel body, Wireless Mic, High quality make of any Leading brands				
12	PA Amplifier with built-in player - Power output: 300W max, 250W RMS, AC and 24V DC operation, Input Channels: 6 Mic and 2 Aux inputs, 1 Line, Speaker out: 4 ohms,8 ohms, 70V and 100V, Digital player: MP3 player with USB, SD and MMC card reader, Resettable circuit breaker for protection against overload and short circuit	1	25000	25000	For the proposed seminar cum lecture facility at the III BSc class room.
13	Mike stand - Iron base universal microphone suspension boom scissor arm stand (Type 2), Die iron casted powder coated hub for royal look and better adjustment of upper pipes, heavy duty iron pipes, Solid base with rugged and durable foot pad	1	1200	1200	For organizing departmental activities
14	Wired mic with cable	2	5000	10000	For organizing departmental activities
15	Wall Mount Bracket Speaker Stand - Complete setup to install box speakers on wall	6	2000	12000	For the proposed seminar cum lecture facility at the III BSc class room.
16	Battery charger for 10 KVA Generator: Installation of auto charging unit near generator to recharge generator battery	1	20000	20000	For the 10kV A generator, the battery is required to start the system. When not used for a long time, the charge in the battery drains. An automated system is required to charge the battery.
17	Air Conditioner and Stabilizer - Split AC, 3 tons , Rating 3 star or above	7	75000	525000	For the computational lab, research labs etc.

18	Pen tab: 9x5 inches/11X6 inches. - Integrated with advanced Bluetooth v5.0 chips for reliable wireless connections With large-capacity battery. Battery-free stylus, 60-degree tilt function and more than 8000 levels of pressure sensitivity. Supported OS-Windows, Mac OS, Android, Chrome OS and Linux systems.	5	10000	50000	For online content creation, conducting online classes
TOTAL				5019562	

2(a). Electrical, civil and other works

Sl.	Work	Estimated Amount	Justification
1	Rewiring the electrical installation in the Department of Physics- • Replacement of the old wiring • Installation of new switch boards • Installation of new LED tube lights and fans in the UG and PG labs and classrooms and staff room	2000000	Electrical work in the entire department is old. Present wiring is with Aluminium wires which results in circuits breaking. Also, this is less efficient compared to Copper cables in terms of losses. Present electrical system cannot support the new sophisticated equipment in UG/ PG/ Research Labs. In UG, PG class rooms and labs and in the staff room, there are insufficient plug points. Hence multiple extension cables are used, causing cable cluttering. Light and fans in all the rooms are below the requirement.
2	Aluminium Fabrication Cup board for staff room and Research Lab - Cabins for keeping personal stuff, books, material related to class works	500000	This is absolutely necessary to safely keep files, teaching materials, university answer sheets etc.
3	Partition with Aluminium Fabrication for (1) BSc lab (2) Staff room and (3) Applied Electromagnetics lab	100000	Partition in the BSc lab is needed for hosting spectrometers and experiments in optics. Partition in the staff room is necessary to seal the toilet from the staff room. Partition in the Applied Electromagnetics lab is necessary to separate it from the MSc final year class room. Presently, the partition is with low cost wooden panels that have deteriorated due to age.

4	Repair and renovation of common toilet in the department, creation of additional toilet for women staff - • Installation of new partition • Installation of new closet, wash basin, health faucet, taps, exhaust fan • Plumping works • Wall and floor tiling	150000	The staff toilet in the department is in a dilapidated condition with leaks and faulty installations. During valuation camps of the University of Calicut or during seminars attended by guests, the condition of the toilet is a serious issue. A separate toilet for women is also an urgent need.
5	Demolition of the unused toilet inside the II PG class room	25000	This old toilet is not in use for a long time. There is a stinky smell causing difficulty for the students. There are no usable items in this space.
6	Tiling of MSc Lab and Staff room and II PG class room (where the toilet is demolished)	250000	The old tiles in both these rooms have been damaged. Re-tiling is necessary in these spaces.
7	Plumbing work in the material science research lab	10000	Water tank with capacity 1000 L is mounted on top of the bathroom within the research lab. Necessary plumbing work needs to be done to meet the requirements of uninterrupted water supply to the equipment like Chemical Vapour Deposition Unit, Deionizer etc.
8	Passage to connect consecutive three rooms adjacent to the research lab which is to host costly and sophisticated equipments like XRD	50000	It is required to isolate highly sensitive instruments like sensitive spectrometers, from furnaces and other fabrication instruments to have good and stable results and long life. It also requires maintaining the ambient temperature. Need a dust free separate room for each instrument.
9	Seating arrangement for research scholars - • Electrical wiring to connect lights, Fans and Plug points for research scholars	150000	Even though a recognized research center of the University of Calicut, because of various reasons that include the unavailability of rooms, we could not provide seating arrangement to the research scholars. The veranda of the research lab can be utilized to create a new facility for the research scholars.
10	Carpentry works to repair research lab furniture	50000	Efficiently use the available furniture and to avoid write off. Many of the furniture in the research labs are old and need repairing works by carpenters
11	Installation of Laboratory Fume Hood	75000	The fume hood has been purchased, but not installed due to insufficient funds.
12	Construction of work table for chemical synthesis	50000	Currently only wood table is available which is not suitable for doing

			chemical synthesis
13	Cement plastering along the periphery of the department quadrangle	50000	This is required to seal holes near to the research lab to ward off the entry of reptiles. Also, the drainages in the quadrangle need to be repaired to allow the flow of water discharges.
Total		3460000	

2(b). Infrastructure (Furniture and other items)

Sl. No.	Item	Quantity	Rate	Estimated Amount	Justification
1	Computer table - size: 120 cm * 60 cm* 75 cm, prelaminated particle board and edge banding with same PVC tape, One drawer of 40 * 50 * 18 cm size, CPU Stand, Foot Rest, keyboard tray	15	4000	60000	Computer tables for research scholars and student doing UG, PG projects
2	Chairs with writing pad - Adjustable writing board attached to the armrest, breathable mesh back, sturdy steel frame	50	5500	275000	The Department of Physics does not have its own facility to organize small lectures and functions. We propose to create this facility in the present III BSc class room.
3	Office chairs with rollers for staff room and research scholars room - Thick padded seat for long hours comfort, Pneumatic Hydraulic seat Height adjustment, sturdy internal frame material with upholstery cover of synthetic Leatherette / fabric, heavy duty steel/	20	3000	60000	All the chairs in the department for staff are in a bad condition. Also, there are no seating facilities for research scholars.

	chrome base				
4	Wooden podium	3	5000	15000	For lecture rooms
5	Steel Almirah	5	10000	50000	To store delicate accessories and expensive compact instruments in the research lab
6	External notice board	1	15000	15000	For student information
7	Notice boards with cover and lock	3	5000	15000	For displaying announcements, achievements and results
TOTAL				490000	

2(c). Sophisticated Equipment

Sl.	Item	Quantity	Amount	Total
1	Advanced benchtop X-ray diffractometer - Maximum power -600 W, Tube voltage - 40 kV, Tube current - 15 mA, Shutter - Rotary shutter linked to interlock, X-ray tube - Cu, Co, Fe, or Cr, Divergence slit - Fixed or Variable, Scattering slit - Fixed, Receiving slit -Fixed, Filter K β Foil filter, Monochromator , Graphite for D/teX Ultra, Goniometer Type - Vertical, Radius - 150 mm, Scanning range -3 to 145° (θ -2 θ), Scanning speed 0.01 to 100°/min (2 θ), Minimum step width - 0.005° (2 θ), supporting software, data analysis instrument.	1	5500000	5500000
2	FTIR spectrometer with computer and software - Spectral range: 4000 to 350 cm ⁻¹ , resolution 4 cm ⁻¹ or more, KBr beam splitter, DTGS detector, solid or liquid samples with minimum 2 mg	1	1000000	1000000

3	Astronomical Telescope - Astronomical Computerized goto telescope suitable for deep sky observations (nebulae, galaxies, star clusters etc) with accessories for astrophotography. Specification - Aperture 11 inches , focal length 2800 mm, Focal Ratio - f/10, Finderscope 50mm , Mount - Dual fork arm, Optical tube -aluminium construction, Eyepiece 23 mm , Mount type - Azimuth, Optical Coatings - Starbright XLT coatings, Limiting stellar magnitude 14.7 , Lowest useful magnification 40X, Highest useful magnification 661X, Light gathering power 1600X, Motor Type - DC Servo, Tracking Modes - Alt -Az, EQ- North, EQ - South, Tracking rates - sideral,solar,lunar Mount slew speeds - 9 slew speeds max speed5deg/sec , should have periodic error correction , GPS and Wifi module to be provided, Aux ports , USb and autoguider, should have handcontroller, Should provide AC adapter. Software to be provided, database should have more than 40000 objects, Warranty 2 years.	1	500000	500000
4	Glove box - Few material processing need inert atmosphere and hence need to work in the glove box	1	500000	500000
5	Particle size analyser - To determine the size of nanomaterials and micro materials. Required for the preliminary characterization of nanomaterials.	1	1500000	1500000
6	Lock in Amplifier - Lock in amplifier extracts signal from a noisy environment, useful in analysing emission signals	1	200000	200000
7	High Temperature furnace - For material preparation and heat treatments	1	2500000	2500000
8	Stylus profiler to measure the thickness of films - Of the order of angstrom units. Film thickness is an important parameter without the knowledge of which electrical and other properties of thin films cannot be completely studied. Its measurement therefore becomes critical.	1	2500000	2500000
9	Electron beam deposition system for the deposition of metals, selected polymers and oxides	1	2500000	2500000

10	Electromagnet with power supply - variable polegaps and variable current which can give 1.5 T at a pole gap of 1 cm, pole diameter 2cm, This is a primary requirement for all measurements in magnetism. The one in the dept's PG lab is very old, huge and not portable. It will facilitate Hall measurements and other experiments in the PG/research labs.	1	500000	500000
11	Optical accessories: Lens, lenses, lens mounts, mirrors, mirror mounts, xyz adjustment mounts, stages (translational and rotational), necessary screws, objectives, optical fibres and necessary mounts. Power meter - Necessary for all optical experiments including reflection experiments, surface Plasmon studies, photoluminescence studies.	1	1000000	1000000
12	Power meter: Capable to measure power upto 10W With optical power head and wavelength head Wavelength region - 200 nm 2000 nm For solar cell performance studies, for optical studies	1	500000	500000
13	Vibration free table - These are required for setting up the optical and electrical characterization apparatus mentioned above.	1	1000000	1000000
14	Electromagnetic simulation software (CST Microwave Studio) - To conduct the simulation studies in electromagnetics	1	600000	600000
15	Raman spectrometer: A large focal length (250 mm or more) achromatic spectrograph equipped with research grade confocal microscope and reflective optics capable of producing Raman Spectra in the spectral range of 50 cm ⁻¹ (or less) to 4000 cm ⁻¹ (or higher) using necessary optics for 325 nm, 532 nm and 785 nm laser excitation sources. Spectral resolution: ~ 0.5 cm ⁻¹ (or better) with suitable optics for excitation wavelengths 325nm, 532 nm and 785 nm. Laser sources with wavelengths 325 nm, 532 nm and 785 nm.	1	4000000	4000000
16	Electrochemical workstation: Multi-channel Potentiostat/Galvanostat-simultaneous measurements for up to 4 channels. For each channel, current control range $\pm 500\text{mA}$, potential control range $\pm 10\text{V}$. Need to support floating mode, Ethernet connection. Independent channels.	1	1500000	1500000

17	Time-resolved Spectrofluorometer: Hi sensitive with wavelength resolution 0.5 nm, Excitation wavelength range 200nm 800nm, Emission wavelength range 300 nm 1000 nm	1	2000000	2000000
18	DLS -Dynamic light scattering for hydrodynamic size of Nano colloids	1	2500000	2500000
19	PCB Fabrication and Simulation Lab - PCB Manufacturing with Associated Software which is capable of doing Schematic Capture, Circuit Simulation, PCB Layout and PCB Prototyping. <ul style="list-style-type: none"> • The PCB prototyping machine should be capable of drilling, Milling and routing Bare PC Boards. • OrCAD Software with PSpice for Circuit Simulation, Schematic capture and OrCAD PCB Layout design. • The Machine Software should be capable of accepting the OrCAD software layout design and directly draw the pattern. • The system should supply with fiducial positioning camera for board alignment, quality inspection, and overlay. • The Machine should have USB plug-and -Play connection. • Machine should be able to do Step Milling and Incremental Milling • The machine should have the facility of tool depth adjustment The machine should be capable of making analog / Digital circuits precisely • The minimum track width that the machine should be capable of routing should be 4 Mils or less. • Maximum drilling cycle (cycles/min.) = 50 or more • Maximum thickness of processed material (mm) = 10 (0.4") or more • The minimum isolation between 2 tracks should be 4 Mils or less. • The minimum Drill Hole diameter [mm]= 0.2 - 3.175 (8 - 125 mil) • The working X-Y area should be 229 x 320 x 10 (9.0" x 12.6" x 0.4") • The resolution of the machine [Um] = 0.625 (0.0246 mil) • The milling machine motor speed should be 5000-41,000 RPM • The travelling speed should be 55mm/sec • The machine should be supplied with dust extraction unit • The minimum required tool bits and accessories should be provided for quality circuit board fabrication. • The system should support substrates like Teflon, RT/Duroid, Arlon, FR4 etc. 	1	1600000	1600000

	<p>GM Counter - Radiation counting system with alpha/beta and gamma probes. Should provide alpha,beta and gama sources. Also absorber kit and necessary accessories for carrying out a number of Nuclear Physics experiments such as Characteristics curve of a G.M. Counter, to verify the inverse square law for Gamma Radiation, Absorption of Beta Radiations, efficiency of G.M.Counter for Beta Radiation, determination of the back scattering factor of a material for beta rays etc,. Shouls also provide lead storage container.</p> <p>Specifications - G.M. Input (From G.M.Counter) (a) Polarity : Negative (b) Amplitude : 250 mV (min) Resolving Time 6 micro sec (approx) HV Output Variable HV using tenturn pot upto a maximum of 1500 volts at 1 mA. Line and load regulation better than 0.05%. Ripple less than 10mV (rms). Display 20 x 2 LCD dotmatrix display has been provided to indicate data counts, Elapsed Time and HV. Counts Capacity 999999 counts Preset time (0-9999) sec. Command Buttons START, STOP, PROG, STORE, INC & DEC command buttons have been provided on the front panel key pad. Programmability Includes selection of Preset Time, Storing / Recalling of data, starting and stopping of acquisition etc,. G.M. Socket MHV connector for connecting to G.M. Detector. Power Unit is powered works on 230V, AC, 50Hz through power / adapter which delivers +12V input to unit. Mechanical Dimensions 236mm(W)X133mm(H)X246mm(D) Approx.</p>	2	50000	100000
Total				32000000

3. Students Support, Welfare and Outreach

Sl.	Purpose	Details	Total	Justification
1	Study Tour	For 50 students	500000	As part of the syllabus of Calicut University, Students are required to visit institutes/Labs. (Amount shown is for 5 years)

2	Science exhibition for school students	For school students	75000	To conduct exhibition cum experimenting sessions for high school kids, so that they can have a flavor of experiencing the practical side of basic physical phenomena according to their levels. The college students can reinforce their knowledge by conducting such workshops/ exhibitions. (Amount shown is for 5 years)
3	Ameture Astronomy club	With participation from students in the department	175000	The department conducts night sky watches to the general public every year. Celestial bodies will be shown and explained to the general public through telescopes. (Amount shown is for 5 years)
4	Study material for remedial coaching		250000	Study material in terms of notes and copied books will be made available to the students as part of remedial coaching (Amount shown is for 5 years)
TOTAL			1000000	

4. Academic Excellence in Learning, Teaching and Research

Sl.	Purpose	Details	Total	Justification
1	National Seminar and Workshop for faculty development	For Faculties of Govt and Aided Colleges	625000	For conducting faculty development programs
TOTAL			625000	

POSTGRADUATE DEPARTMENT OF STATISTICS

1. Computer Lab

Setting up of new computer lab. The current lab is not sufficient to cater the requirement of fulfilling the laboratory classes. Moreover, the computers are installed and maintained by external agency namely ASAP, the department is not able to manage the systems. In order to make smooth functioning of laboratory classes, it is required to set up a separate new lab.

Approximate cost for setting new lab is furnished below.

Sl. No.	Item	Specification	Amount	Number	Total
1	Desktop Computer for setting up Computer Lab	Form Factor Desktop; Processor Make Intel; Processor Generation 11; Number of Cores per Processor 4; Processor Base Frequency (GHz) 3, Processor Description Intel Core i7, rocessor Number Intel Core i7-9700; Number of Sockets populated with the Processors 1; Cache (MB) 12; Chipset Number Intel C246; Graphics Type Dedicated/Discrete; Number of Graphic Cards 1; Graphic Card Description AMD Radeon Pro WX3100; Operating System (Factory Pre-Loaded) DOS; RAM Size (GB) 32; RAM Expandability upto using spare DIMM Slots (GB) 128; Type of Drives used to populate the internal Bays PCIe; RAID for	₹64,000.00	25	16,00,000/-

		Operating System NA; Capacity of each Drive (GB) 512;			
2	Laptop Computer	Processor Make Intel; Processor Generation 11; Number of Cores per Processor 4; Processor Description Intel Core i7; Processor Number Intel Core i7 1165G7; Size of Memory in Case of Dedicated Graphic ; ard (GB) 0; Operating System (Factory Pre-Loaded) Linux; RAM Size (GB) 16; Type of Drives used to populate the Internal Bays SSD; Total HDD Capacity (GB) 0; Capacity of each SSD (GB) 1024; Total ; SD Capacity (GB) 1024; Capacity of each SSHD (GB) NA; Total SSHD Capacity in addition to 8 GB Flash (GB) 0;	₹79,990.00	10	7,99,900/-
3	Online UPS	Rating in KVA (KVA) 10.0 KVA Technology IGBT- PWM with inbuilt isolation transformer Input Power Three phase 300 V - 450V sinewave,50Hz Output power Single phase 230V +/-1% sinewave 50 Hz Backup time (Minutes) 240 Minimum VAH (VAH) 64000 Warranty for UPS (Years)1 Movable trolley for Batteries Without trolley but with rack Warranty for battery 2	₹940000	1	94,000/-

4	Printer	Cartridge Technology Composite Cartridge Printing Technology Laser Type of Printing Mono Paper Size A4 Print Speed per minute as per ISO/IEC 24734 in (A4) Size - Mono 40 Print Speed per minute as per ISO/IEC 24734 in (A4) - Color 0 Resolution (Dpi) 1200x1200 Memory (MB) 1024 Hard Disk Capacity (GB) 0 Processor Speed 800 MHz	₹59324.00	1	59,324/-
5	Computer Cubicles	3 (length)x1 (breadth)meters	20000/-	8	1,60,000/-
6	Cushion Chair		10000/-	25	2,50,000/-
7	A/C			2	80,000/-
8	False ceiling				1,00,000/-
Total					31,43,224/-

2. Software Purchase

Currently, the department has no licensed version of any of the important Statistical and mathematical software. The following list includes some of the important and necessary software.

SI NO	Name	Cost(Estimate)	No	Total
1	IBM SPSS(Statistical package for social science)	2,00,000/-	1	2,00,000/-
2	MATHEMATICA	5,00,000/-	1	5,00,000/-
3	SAS	10,00,000/-	1	10,00,000/-
Total				17,00,000/-

3. Infra structure

As the department is planning to conduct most advanced courses in Data analytics, Data science and related fields, we require the following infrastructure facility

Class room : 2 Nos

Desk: 20 Nos

Bench: 20 Nos

White board: 2 Nos

Projector:2 Nos

Projector screen: 2Nos

Steel almirah : 4 Nos

Approximate total cost: 15,00,000/-

4. New Course

The department plans to start new post graduate courses in **Data Analytics/Data Science**. The approximate cost for starting the courses are furnished below.

Year	First year				Second year			
Teaching Post	Teaching hours	No of faculty	No of days in week	Expenditure	Teaching hours	No of faculty	No of days in week	Expenditure
Statistics	25	2	5	1262976	50	3	5	25,25,952/-

5. Seminars/workshops

Approximate total cost for conducting national/international seminar/workshop:
10,00,000/-

6. Faculty development programmes:

Approximate cost for conducting faculty development programmes like Short term courses, refresher courses, induction programme, certificate programmes etc.:
10,00,000/-

Grand total : 1,08,69,176/-

DEPARTMENT OF COMPUTER SCIENCE

Background

The B.Sc. Computer science course has started in the year 2012. The present Computer lab available at the institution is shared by Statistics department, ASAP, Commerce department and Computer Science department. As the BSc Computer Science course is designed more practical oriented with a total of 8 programming lab and 1 project, the lack of dedicated Computer lab greatly affects the skill development of students. Even with these constraints, our department is in a position to recruit 10 students out of a complete of 30 in MNCs per annum. The present proposal is being submitted to satisfy the requirements of dedicated computer lab by altering existing final year class room to Computer lab

Name of Course: BSc Computer Science

Total = 99 students

Number of teachers: 4

Lab assistant: 0

Requirements for converting Room number converting 3r year class room (5/6 semester BSc computer Science Class room) as Computer Lab and converting first year and second year class rooms as smart class rooms

Room measurements Length 20 feet : width 30 feet , total 600 Sq feet

Sl.no.	Item Description	Rate	Qty	Total
1	Computer Lab furniture for 36 desktop Computer Table (Moveable) 8ft length * 1.5ft width *2.5ft height 4 Partitions with keyboard draw backside partially covered(1ft)- Material-multiwood panel with minimum 20 mm thickness (Drawings will be submitted later) Each units have separate electrical wirings to connect 4 computers(total 12 plug points,4 switches , 4 boxes,Elcb-1,mcb-1, and covered cabling to connect UPS to the unit)	40,000	9	360000
2	Window frame with sliding door with glass (4 door)- Material UPVC	9000	4	36000
3	UPS - 10 KV UPS with isolation transformer technology+ Sufficient number of 100 Ah or above LiFePO4 Batteries with covered stand. Minimum back up time with full load-2 hour+	500000	1	500000

	5 Year OEM Warranty (battery and UPS)			
4	Electrical Wiring & Fittings for connecting 9 computer tables and projector from UPS	100000	1	100000
5	Network Cable for connecting 36 desktop + Switch+ Network Cable Laying cost	100000	1	100000
6	Projector + Projector fitting Accessories + installation charge	80000	1	80000
7	AC 2 tone 5 Star + installation charge	50000	2	100000
8	Desktop all in one computers with 5 year onsite warranty 8 GB RAM , 500 GB HDD, core i7,windows,	60000	37	2220000
Total 34,96000 (Thirty Four Lakh and Ninety Six Thousand)				

Upgradation of existing facilities

Converting first year and second year class rooms as smart class rooms

Class room 1 first year

Room measurements Length 30 feet : width 30 feet , total 900 Sq feet

Class room 2 second year

Room measurements Length 30 feet : width 30 feet , total 900 Sq feet

Sl.no.	Item Description	Rate	Qty	Total
1	Class room 1 and 2 Room measurements Length 30 feet : width 30 feet , total 900 Sq feet Floor tile paving work	100000	2	200000
2	Class room 1 and 2 Room measurements Length 30 feet : width 30 feet , total 900 Sq feet False sealing work with steel pipe and mutli wood	300000	2	600000
3	Electrical Wiring & Fittings	20000	2	40000
4	Projector + Projector fitting Accessories + installation charge	80000	2	160000
Total 1000000 (Ten Lakh)				

Justification

Lack of dedicated Computer lab is a major issue faced by students of the Computer Science department. The final year syllabus of the programme comprises of more practically oriented papers with 4 programming labs and one project. Students need more practical sessions due to this. A dedicated Computer lab will help students increase their potential which can help them in job markets.

DEPARTMENT OF PSYCHOLOGY

BSc Psychology is a newly introduced course in Govt. Victoria College and the first batch of students have reached their final semesters in 22-23. The infrastructure facilities for the department have not yet been materialized and need new classrooms are laboratories.

3 THEORY CLASS ROOMS -EACH WITH 60 SQ MTR

LABORATORY -150 SQ MTR

Interior setting and electrification

READING CUM REFERENCE BOOK HALL - 100 SQ MTR

STAFF ROOM 60 SQ MTR

Chair -4

Table 4

Shelf 2

Desk top computer system 1

HOD ROOM 60 SQ MTR

Chair 1

Table 1

Shelf 1

Desk top computer system 1

Toilets- 4 nos

Urinal boys 1

Wash room girls 1

SMART CLASS ROOM

PROJECTOR - 1NOS

TV MONITOR - 1NOS

LAPTOP - 1NOS

SOUND SYSTEM - 1NOS

CHAIR /BENCH AND DESK/TABLE FOR ACCOMODATING 120 STUDENTS

GREEN BOARD 4 NOS

WHITE BOARD 4 NOS

Books psychology reference books (around 3 lakhs)

Apprx. Cost = Rs. 30Lakhs

Requirements for seminar hall

Particulars		Qty.
1	Wooden stage	1
2	Dias table	1
3	Royal type wooden chairs	8
4	Single wooden chairs	100
5	Digital podium	1
6	Microphone	3
7	Amplifier and audio mixture	1
8	Speaker	4
9	Projector	1+
10	Inverter	1
11	Air conditioner 210	3
12	Projection screen	2
The total amount required for seminar hall		20,00,000

2 Knowledge hub

2.1 Proposal for Digitalizing Research Scholars' Classroom for conducting data analysis of research projects

Sl.NO	Items	NUMBER	SPECIFICATIONS	AMOUNT
1	Interactive board with projector	2	15 m HDMI cable with electrical connection	180000 (2*90000)
2	Desktop/laptop computers	12	windows license, headphone, mic, 5-year OEM warranty	540000 (12*45000)
3	Ups	1	3kv with isolation transformer technology	150000
4	PHOTOCOPIER CUM SCANNER	1	20ppm,a3 print, duplex printing, wired LAN, dadf, canon ir2006n	138000
5	Computer tables	12	The seat & back is made up of 1.2 cm thick hot-pressed plywood are upholstered with contoured lumbar support for extra comfort. back size :39.0 cm (w) x 24.0 cm (h)., seat size: 44.0 cm (w) x 41.0 cm (d)	66000 (12*5500)
6	Computer chairs	12	Matrix 110 508*482*1021mm Material cloth	40500 (12*3375)
7	Wooden tables and chairs	10	Width x Height: 24 inch x 31 inch	8090 (10*809)

Total Rupees eleven lakh twenty two thousand five hundred and ninety only

2.2 Digital hub for faculty: To conduct academic discussion among faculties

Particulars		Qty.	Estimated Cost	Total Cost
1	Executive Cabinet Table	10	15000 x 10	150000
2	Arm Chairs	10	5000 x 10	50000
3	Desktop PCs	5	40000 x 5	200000
4	Laser Printer – Multifunction (Duplex)	1	25000 x 1	25000
Total				425000

3 Human Resource Development : To impart knowledge, sharpen analytical skills, and create awareness among the faculties, research scholars, and students on relevant social and economic issues and research methodology.

Subject-specific development	number of course	number of hours
Expected amount		
National seminar - 500000	5	120
Research Methodology - 400000	5	80
Add on course		
(Data analysis for social science research)	5	80
80000		
Total = 980000		

3.2 Add on course on statistical packages in social science research

The proposed add-on course on ‘statistical packages in social science research’ aims at the deep knowledge and understanding of various statistical methods and econometric tools for social science research.

Major Head(s)	Description
Course Objective	To impart hands-on experience on different statistical methods
Course Contents	Theoretical and practical sessions on various statistical packages.
Duration	80 Hours
Intake	60
Estimated Cost	Rs. 100000/Year (Rs. 5 lakh for 5 years)

4 Performance indicators

Coaching for competitive exams like UGC, NET, JRF, UPSC, and PSC exams

SL.NO	ITEMS	AMOUNT
1	PURCHASE OF BOOKS/JOURNALS	100000
2	Remuneration for experts @2500 per day for 40 classes for 5 years	500000
3	TOTAL	600000

5 Research Projects

5.1 Academic research : A major research project on “Rehabilitation of the Return Migrants: A study of Gulf Returnees

The growth of the Kerala economy depends heavily on the remittances of Keralites working in foreign countries, especially the Gulf countries. For some years, Kerala has witnessed an unprecedented return of migrants from abroad following the nationalization drive viz. Nitaqat. This is having an impact on the labour market of Kerala.

Budget

SI.NO	ITEMS	AMOUNT
1	Fieldwork/Data collection	100000
2	Journals and books	30000
3	Hiring charge	35000
4	Contingency	35000
5	TOTAL	200000

Fund required: **Rs 2, 00,000 (Rupees Two Lakhs only)**

Requirements for seminar hall

Particulars		Qty.
1	Wooden stage	1
2	Dias table	1
3	Royal type wooden chairs	8
4	Single wooden chairs	120
5	Digital podium	1
6	Microphone	4
7	Amplifier and audio mixture	1
8	Speaker	6
9	Projector	1
10	Inverter	1
11	Air conditioner 210	3
12	Projection screen	2
Total amount required for seminar hall		30,00,000

Furniture Requirement in New Building

Particulars		Qty.	Estimated Cost	Total Cost
1	Rub wood Desks and Benches for 3 degree classrooms	60x3 each	(5000x360)	1800000
2	Jefferson Chair for PG Classes	50	[5000 x 50]	250000
3	Teachers Wooden Table for classes	5	[10000x 5]	50000
4	Teachers Chair for Classes	5	[5000 x 5]	25000
5	Teachers Table for Staffroom	10	10000x10	100000
6	Teachers Chair for Staffroom	10	8000x10	800000
7	Shelves for classrooms	5	5000x5	250000
8	Shelves for Staffroom	3	6000x3	18000
9	Notice Board with adjusting glass	1	10000x1	10000
10	Podium for classes	5	10000x5	50000
11	Water purifier	1	75000x1	75000
12	Revolving Chair for staffroom	2	6000x2	12000
13	Computer Table	3	5000x3	15000
14	Hycon inverter/ generator	1	300000x1	300000
15	L.P A System	1	150000x1	150000
Total				3905000

2 Knowledge hub

2.2 Digital hub for faculties

To conduct academic discussion among faculties

Particulars		Qty.	Estimated Cost	Total Cost
1	Executive Cabinet Table	10	[15000 x 10]	150000
2	Arm Chairs	10	[5000 x 10]	50000
3	Desktop PCs	5	[50000 x 5]	250000
4	Laser Printer – Multifunction (Duplex)	1	[25000 x 1]	25000
Total				475000

2.3 Setting up of Heritage Museum

Sl.NO	ITEMS	NUMBER	Expected cost	AMOUNT
1	Wooden Ceiling	Whole building	2000000	2000000
2	Glass showcase	10	20000x10	2000000
3	Adjusted shelves	12	20000x10	2000000
4	Rub wood desks	12	10000x12	120000
5	Glass Templars	12	10000x12	120000
6	Reception desks	2	8000x2	18000
7	Bamboo curtains	20	5000x20	100000
8	Wooden tables and chairs	10	1000x10	100000

Total 6458000/- (Rupees sixty four lakh fifty eight thousand only)

3 Human Resource Development

To impart knowledge, sharpen analytical skills, and create awareness among the faculties, research scholars and students on relevant social and economic issues and research methodology.

Subject specific development amount	Number of course	Number of hours	Expected amount
National seminar	5	120	600000
Research Methodology	5	80	500000
Total			1100000

4 Performance indicators

Coaching for competitive exams like UGC,NET,JRF, UPSC and PSC exams

Sl.NO	ITEMS	AMOUNT
1	PURCHASE OF BOOKS/JOURNALS	200000
2	Remuneration for experts @2500 per day for 40 classes for 5 years	800000
3	TOTAL	1000000

Grand Total RS. 11838000 (Rupees one crore eighteen lakh and Thirty Eight Thousand only)

ANNEXURE 11**DEPARTMENT OF TAMIL**

As Palakkad District borders, the state of Tamil Nadu, there are linguistic minority group opting the institution for higher studies. At present Department runs UG programme in Tamil and is operating in an old building in a dilapidated condition. Hence classrooms are getting allotted in new academic block. This require seating facility and computer infrastructure along with projectors and digital boards. Requirement is summarized below;

Furniture and smart classroom Requirement in New Building

Particulars		Qty.	Estimated Cost	Total Cost
1	Rub wood Desks and Benches for 3 degree classrooms	10x3 each	(5000x30)	150000
2	Teachers Wooden Table for classes	5	[10000x 3]	30000
3	Teachers Chair for Classes	5	[5000 x 3]	15000
4	Teachers Table for Staffroom	5	10000x5	50000
5	Teachers Chair for Staffroom	5	8000x5	40000
6	Shelves for classrooms	3	5000x3	15000
7	Shelves for Staffroom	2	6000x2	12000
8	Notice Board with adjusting glass	1	10000x1	10000
9	Podium for classes	3	10000x3	30000
10	Water purifier	1	75000x1	75000
11	Revolving Chair for staffroom	2	6000x2	12000
12	Computer Table	1	5000x1	5000
13	Wall mount projectors	3	50000x3	150000
14	Laptop	2	50000x2	100000
Total				694000/-

POSTGRADUATE AND RESEARCH DEPARTMENT OF ENGLISH

The department that had offered both UG and PG courses right from its inception in 1956 was upgraded to a Research Department with focus on Language, Literature and Cultural studies in 2017. The department is the only Government College to offer research in English under Calicut University and has seven Research Guides and 20 Research Scholars enrolled at present. The total amount expected under the institutional development plan of the English department is **Rs.1,74,31,000/- final total (Rupees One Crore Seventy Four Lakh Thirty One Thousand only)**.

1 INFRASTRUCTURE

1.1 Smart classrooms

Justification

Digital upgradation of teaching-learning facilities

Particulars		Qty.	Estimated Cost	Total Cost
1	LED Projectors (In-built) with interactive white board & Installation (with electrical fitting)	6	100000 x 6	600000
Total				6,00,000

Rs 6,00,000/- (Rupees Six Lakh only)

1.2 Mini theatre

Justification

Film studies is offered as a course in UG and PG. Film studies is also a research area that comes under cultural studies and some of the research comes in this domain. A mini theatre would supplement discussion of academic topics through documentary, visual media, and film screening even for common courses.

Proposal for a department seminar hall in the New Block which can also be convertible to mini theatre if needed.

3D cinema hall - screen cost _ 350 per square feet. Other costs include chairs, acoustics, step lights, blinds etc - total estimate around **Rs 30,00,000/- .(Rupees Thirty Lakh only)**

2 Knowledge hub

2.1 Proposal for Digitalizing Research Scholars Room

Justification

Research Scholars to be provided with a space for research

SL.NO	ITEMS	NUMBER	SPECIFICATIONS	AMOUNT
1	DESKTOP	2	Core i7 with licensed Windows and 3 year warranty	160000 (2*80000)
2.	Laptop	10	Core i7 with licensed Windows and 3 year warranty	800000 (10*80000)
3	UPS	1	2kv	200000
4	Printer	1	Laser Printer	15000
5	TABLES AND CHAIRS	10	Wooden	150000 (10*15000)

Rs 13,25,000/- (Rupees Thirteen lakh twenty five thousand only)

2.2 Furniture / Digital support for Teaching staff

Justification

Promotes academic ambience

Particulars		Qty.	Estimated Cost	Total Cost
1	Table	17	15000 x 17	255000
2	Chairs	17	5000 x 17	85000
3.	Water Filter	1	100000	100000
4	Locker cabinet (multiple)	2	13000 x 2	26000
5	Desktop PCs	2	80000 x 2	160000
6	Laser Printer – Multifunction (Duplex)	2	15000 x 1	30000
Total				Rs 6,56,000/-

(Rupees Six Lakh Fifty Six Thousand only)

3 Human Resource Development

Justification

To share knowledge, to develop research aptitude, and to inculcate the latest trends in literature and cultural studies among the faculty members, research scholars, and students.

Subject-specific development
Expected amount

Number

- | | |
|--|---|
| a) 2-3 day International/ National seminar | 5 |
| 400000 | |
| b) 3 - 5 day Workshops/ theatre festival /carnival | 5 |
| 700000 | |

**Total (Rupees Eleven lakh only)
Rs 11,00,000/-**

3.2 Add on course

Add-on course as 30 hour certificate courses proposed as per demand

Major Head(s)	Description
Course	Academic/ language skill based course based on student need
Methodology	Theoretical and Practical sessions
Duration	30 Hours
Intake	30 students/ batch
Estimated Cost	Rs.40000/Year (Rs. 2,00,000/-)

(Rupees Two lakhs only)

4 Performance indicators

Justification

Student progression:- Coaching for competitive exams like UGC, NET, JRF, UPSC, and PSC exams

SI.NO	ITEMS	AMOUNT
1	PURCHASE OF BOOKS/JOURNALS/	100000
2.	Remuneration for Subject Experts@Rs 3000/ session 30 claasses/tear 3000 x 150	450000
	TOTAL	Rs 5,50,000,-

5 Research Projects

5.1 Community Outreach Program

In 2019, a field study of college dropouts in remote areas of the district was conducted by the department. As a sequel to the study, the 2nd phase proposes a constructive intervention.

The outreach project is an attempt to promote higher education amongst the students at select areas in Attapadi, border areas having linguistic minority and SC colonies in the district. by coordinating with other governmental agencies and the District Administration. A five year phased plan of action is proposed where in setting up of model learning and career advancement centres can facilitate our support mechanism through inclusive community learning and career counselling. This is envisaged with a view to be replicated / improved upon by the Government departments in such marginalized communities all over India.

Budget

SI.NO	ITEMS	AMOUNT
1.	Field visit/counselling/ support	2500000
2	Setting up of Model Learning centres / Library/ etc.	7500000
	TOTAL	Rs. 1,00,00,000/-

Fund required: **(Rupees One Crore only)**

DEPARTMENT OF HINDI

The UG department of Hindi has been functioning since 1957 and a proposal is under consideration to upgrade it to a PG department. The total amount expected under the institutional development plan of the Hindi department is **Rs.47,13,000/- (Rupees Forty Seven Lakh Thirteen Thousand only).**

1 INFRASTRUCTURE**1.1 Smart classrooms**

Particulars	Qty.	Estimated Cost	Total Cost
LED Projectors (In-built) with interactive white board & Installation (with electrical fitting)	3	100000 x 3	300000
Total			RS. 3,00,000/-

(Rupees Three Lakh only)

1.2 Academic**Seminar hall**

To conduct academic discussions and presentation of research findings

Seminar hall (100 capacity) 2500*10

Requirements for seminar hall

Particulars	Qty.
1 Wooden stage	1
2 Dias table	1
3 Royal type wooden chairs	8
4 Single wooden chairs	100
5 Digital podium	1
6 Microphone	3
7 Amplifier and audio mixture	1
8 Speaker	4
9 Projector	1+
10 Inverter	1
11 Air conditioner 210	3
12 Projection screen	2

Rs. 20,00,000/- (Rupees Twenty lakh only)

2 Knowledge hub

2.1 Digital hub for faculties

Promotes academic ambience

Particulars		Qty.	Estimated Cost	Total Cost
1	Table	6	15000 x 6	90000
2	Chairs	6	5000 x 6	30000
3.	Water Filter	1	100000 x 1	100000
4	Locker cabinet (multiple)	1	13000 x 1	13000
6	Laser Printer – Multifunction (Duplex)	2	15000 x 2	30000
			Total	Rs. 2,63,000/-

3 Human Resource Development

Justification

To share knowledge, to develop research aptitude, and to inculcate the latest trends in literature and cultural studies among the faculty members and students.

Subject-specific development amount		number of course	Expected
National seminar	2 day	5	
500000			
Workshop	3 day	5	
750000			
Total			
Rs 12,50,000/-			

3.2 Add on course on statistical packages in social science research

Add on course in Hindi computing certificate course

Major Head(s)	Description
Course Objective	Hindi computing
Course Contents	Theoretical and practical sessions
Duration	30 Hours
Intake	30
Estimated Cost	Rs. 60000/Year Total Rs. 3,00,000/-

(Rupees Three lakh only)

4 Performance indicators

Coaching for competitive exams like UGC, NET, JRF, UPSC, and PSC exams

SLNO	ITEMS	AMOUNT
1	PURCHASE OF BOOKS/JOURNALS	1000000
2	Remuneration for experts @2500 per day for 40 classes for 5 years	500000
3	TOTAL	Rs 6,00,000/-

(Rupees Six lakh only)

DEPARTMENT OF SANSKRIT

The UG department of Sanskrit has been functioning since 1957 and a proposal is under consideration to upgrade it to a PG department. The total amount expected under the institutional development plan of the Sanskrit department is **Rs.47,13,000/- (Rupees Forty Seven Lakh Thirteen Thousand only).**

1 INFRASTRUCTURE**1.1 Smart classrooms**

Particulars	Qty.	Estimated Cost	Total Cost
LED Projectors (In-built) with interactive white board & Installation (with electrical fitting)	3	100000 x 3	300000
Total			RS. 3,00,000/-

(Rupees Three Lakh only)

1.2 Academic**Seminar hall**

To conduct academic discussions and presentation of research findings

Seminar hall (100 capacity) 2500*10

Requirements for seminar hall

Particulars	Qty.
1 Wooden stage	1
2 Dias table	1
3 Royal type wooden chairs	8
4 Single wooden chairs	100
5 Digital podium	1
6 Microphone	3
7 Amplifier and audio mixture	1
8 Speaker	4
9 Projector	1+
10 Inverter	1
11 Air conditioner 210	3
12 Projection screen	2

(Rupees Twenty lakh only)

2 Knowledge hub

2.1 Digital hub for faculties

Promotes academic ambience

Particulars		Qty.	Estimated Cost	Total Cost
1	Table	6	15000 x 6	90000
2	Chairs	6	5000 x 6	30000
3.	Water Filter	1	100000 x 1	100000
4	Locker cabinet (multiple)	1	13000 x 1	13000
6	Laser Printer – Multifunction (Duplex)	2	15000 x 2	30000
			Total	Rs. 2,63,000/-

(Total Rupees Two Lakh Sixty Three Thousand only)

3 Human Resource Development

Justification

To share knowledge, to develop research aptitude, and to inculcate the latest trends in literature and cultural studies among the faculty members and students.

Subject-specific development amount		number of course	Expected
National seminar	2 day	5	
500000			
Workshop	3 day	5	
750000			
Total			
Rs 12,50,000/-			

3.2 Add on course on statistical packages in social science research

Add on course in Sanskrit computing certificate course

Major Head(s)	Description
Course Objective	Sanskrit computing
Course Contents	Theoretical and practical sessions
Duration	30 Hours
Intake	30
Estimated Cost	Rs. 60000/Year Total Rs. 3,00,000/-

4 Performance indicators

Coaching for competitive exams like UGC, NET, JRF, UPSC, and PSC exams

SLNO	ITEMS	AMOUNT
1	PURCHASE OF BOOKS/JOURNALS	1000000
2	Remuneration for experts @2500 per day for 40 classes for 5 years	500000
3	TOTAL	Rs 6,00,000/-

Proposal for MA Sanskrit

B.A Sanskrit degree course was started in the department in 1957. After the successful completion of 62 years of the UG programme, PG Course in Sanskrit has not yet been sanctioned. All the facilities are available in this college to start the M.A programme including the library having more than 5000 useful and relevant books in various Sanskrit related subjects.

Additional Posts to be Created	Additional Annual Expenses	Job Opportunities
First Year – 02	First Year - 12 Lakhs	After completing M.A Course in Sanskrit the students will get job opportunities in translation, teaching, research and in manuscript libraries
Second Year – 02	Second Year - 12 Lakhs	
Total - 04	Total - 24 Lakhs	

Details of Workload

No. of Hours/Week	:	83 Hrs
No. of Sanctioned posts	:	05
No. of Hours / Week for M.A		
First Year	:	25 X 1 = 25Hrs
Second Year	:	25 X 1 = 25 Hrs
Total Hours/ Week after sanctioning		
M.A .Programme	:	133
<u>No. of Posts to be created</u>		
First Year	:	01
Second year	:	02

POSTGRADUATE DEPARTMENT OF MALAYALAM

Department of Malayalam run courses in UG and PG and expected to raise into the status of a research centre in coming years. The requirements for the department is summarized as follows;

Faculty Development Programme

1. International and National Seminar - 1/year – 10Lakhs
2. Lecture Series - 8/year - 2Lakhs
3. Documentation of cultural forms and art forms of the region under various Panchayats of Palakkad - 10 Lakhs
4. Journals & Weekly - 10000/year - 50000/-
5. Books - 5 Lakhs
6. Study Materials for PG and UG - 50000/-

Furniture Required

1. Jefferson Chair for PG - 40 Nos – 2 Lakhs
2. Research Scholars sitting facility Table and Chair - 2 Lakhs
3. Office Table - 8 Nos. – 2 Lakhs
4. Office Chair - 8 Nos. 50000

Study Tour

Field study for UG and PG - 2 Lakhs/year – 10 Lakhs

Electronic Equipment

1. Photostat Machine – 1 – 60000/-
2. Electronic podium - 1 – 50000/-
3. Desktop Computer – 1 – 100000/-
4. Codeless Mike - 3 - 10000/-
5. Camera (Movie) - 300000/-
6. Water Purifier - 2 – 150000/-
7. Ceiling Fan - 5 – 15000/-

Maintenance

Tiling of class rooms and Verandah - 10 Lakhs

Maintenance of Washroom - 3 Lakhs

Repairing of windows - 50000/-

Total Estimate: 6215000/-

2 Knowledge hub

2.1 Proposal for Digitalizing Research Scholars' Class Room

For conducting data analysis of research projects

SL.NO	ITEMS	No	SPECIFICATIONS	AMOUNT
1	INTERACTIVE BOARD WITH PROJECTOR	2	15 m HDMI cable with electrical connection	1,80,000 (2*90000)
2	DESKTOP/LAPTOP COMPUTERS	12	windows license, headphone, mic, 5-year OEM warranty	5,40,000 (12*45000)
3	UPS	1	3kv with isolation transformer technology	1,50,000
4	PHOTOCOPIER CUM SCANNER	1	30ppm,a3 print, duplex printing, wired LAN, dadf, canon ir2006n	2,38,000
5	COMPUTER TABLES	12	The seat & back is made up of 1.2 cm thick hot-pressed plywood are upholstered with contoured lumbar support for extra comfort. back size :39.0 cm (w) x 24.0 cm (h)., seat size: 44.0 cm (w) x 41.0 cm (d)	96,000 (12*7000)
6	COMPUTER CHAIRS	20	Matrix 110 508*482*1021mm Material cloth	96,000 (12*7000)
7	WOODEN TABLES AND CHAIRS	25	Width x Height: 24 inch x 31 inch	3,00,000 (25*12000)

Total = 16,00,000 (Rupees Sixteen lakh only)

2.2 Digital hub for faculty

To conduct academic discussion among faculty

Particulars		Qty.	Estimated Cost	Total Cost
1	Executive Cabinet Table	10	25000 x 10	2,50,000
2	Arm Chairs	10	5000 x 10	50,000
3	Lap top	10	100000 x 5	10,00,000
4	Laser Printer – Multifunction (Duplex)	1	45,000 x 2	90,000
Total				13,90,000

3 Human Resource Development

To impart knowledge, sharpen analytical skills, and create awareness among the faculty, research scholars, and students on relevant Financial and economic issues and research methodology.

Subject-specific development	number of course	number of hours	Expected amount
National seminar	5	120	6,00,000
Research Methodology	5	80	3,80,000
Add on course	5	90	

3.2 Add on course on experience in Stock market trading

The objective of the course is to equip the students with necessary theoretical and practical know how of stock market and provide the students an academic base so that students can apply the same in equity markets. The course imparts knowledge as to analyse stocks to find proper entry and exit time of stock , determine the risk of a stock investment or trade. The course will help students to choose the right trading style so as to achieve personal goals. This course fulfils the objective of providing basic tools and techniques to understand the various facets of the capital market including practical exposure.

Major Head(s)	Description
Course Objective	To impart hands-on experience in Stock market trading
Course Contents	Theoretical and practical Live market sessions
Duration	90 Hours
Intake	40
Estimated Cost	Rs. 2,00,000/Year (Rs. 10 lakh for 5 years)

4. Performance indicators

Coaching for competitive exams like UGC, NET, JRF, UPSC, and PSC exams

SI.NO	ITEMS	AMOUNT
1	PURCHASE OF BOOKS/JOURNALS	1,00,000
2	Remuneration for experts @2500 per day for 40 classes for 5 years	5,00,000
3	TOTAL	6,00,000

DEPARTMENT OF PHYSICAL EDUCATION

Proposed Sports Infrastructure

1. Construction Swimming Pool And Indoor Stadium in two floors

Sl. No	Particulars	Justification
1	Construction of Swimming pool and indoor Stadium in single building a) Swimming Pool b) Indoor Stadium	Swimming Pool may Construct in the Ground floor Indoor Stadium In 1 st Floor
	Approximate Cost	10 cr

2. Synthetic Track and Football Field

Sl.No	Particulars	Justification
1	a) Synthetic Track b) Football Field	Our college have number of International players in Athletics and Football .We are not able to provide any facilities to the above sports persons .
	Approximate Cost	Rs. 12 Cr

3. Hockey field.

1	Astroturf Hockey Field	Modernization of Hockey field is necessary because at present players are become injured due to lack of play field . They are playing in the uneven surface .Also we are not able to conduct any type tournaments in the intercollegiate level at least.
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4. Renovation work and and Drainage work in college ground

1.	Govt. Victoria College has vast area of play ground including Cricket, Football, Hockey, Kabaddi, Kho-Kho, Volley ball, Tennis and 400 hundred mts mud track The College play ground may be provided Concrete slab covered drainage system around Fields. The Ground may be raised with mud and landscaped so as to prevent water clogging and easy flow of rain water.	The Play Ground of the college is totally damaged un even due to heavy rain and soil erosion. Drainage facility is essential for regular practice of various games in all seasons. Presently the ground is unfit for proper usage almost for Six to seven months.
	Approximate Cost	Rs. 60,00,000/-

5. Construction of Sheeted roofing near the newly constrting Building (KIIFB) **in the college ground**

1.	Play ground including Hand ball, Kho-Kho, Volley ball, Tennis .The play ground must be fenced. Flooring may be mud	College has no indoor facilities now. So it is very difficult to provide coaching and practice throughout year. Rainy session, sports persons are unable to practice in the ground. The Play Ground of the college is totally damaged un even due to heavy rain and soil erosion. Presently the ground is unfit for proper usage almost for Six to seven months.
	Approximate Cost	Rs. 70,00,000/-

6, **Renovation work on Basketball court**

1	1. Flooring	Present Flooring damaged due to heavy rain and old age. Suitable flooring for Basketball play area. Marking and painting for Basket ball. Tennis Post fitting Tennis Court Marking.
	Approximate Cost	Rs. 4,50,000/-
	2.Fencing	12 ft Mesh Fencing is necessary
	Approximate Cost	Rs.1,50,000/-
	3.Roofing	Curve Shaped Roofing is suggesting because of just in front of the College gate .
	Approximate Cost	Rs.2,50,000/-

7. **Sports Equipment**

Sl no.	Name & item	Company/manufacture	Cost	Quantity	Total
1	Kabaddi Mat, Taekwondo Mat		400000	Full mat	450000
2	Judo Mat	Eagle	8500	30	255,000
Total					750000

ANNEXURE 18

DISCIPLINES OF ARABIC AND POLITICAL SCIENCE

Arabic and Political Science are being run by single faculty for language and complementary. For the curriculum delivery, both these subjects require purchase books in their domain every year with changes in syllabi. Also both these faculty room require minimum essential amenities. Following are the requirements for these departments.

Sl. No.	Item	Apprx.Cost
1	Library Books (Arabic) 5000/yr	25000/-
2	Laptop (Arabic) 1	50000/-
3	Cupboard (Arabic) 1	25000/-
4	Library Books (Political Science) 10000/yr	50000/-
5	Laptop (Political Science) 1	50000/-
6	Cupboard (Political Science) 1	25000/-

Total amount required: 225000/-

Academic

Conduct one Lecture/ yr in Political Science (10000/yr) = **50000/-**

Add-on course

Add on course for Union members and student representatives (25000/yr) = **125000/-**

CONCLUDING REMARKS

The present plan for five years envisaged for Victoria College, visualize the institution as a model centre for higher learning and research in the years to come. The proposal if implemented in the institution, will transform the college as a centre for research and innovation and will be utilized by the public and other academic institutions as a nodal centre. The proposal envisages the institution at the level of a university and will be molding the generations to come in future.