

REPORT OF THE ENVIRONMENTAL/GREEN AUDIT OF UNIVERSITY OF KERALA



2015 December
Internal Quality Assurance Cell (IQAC)
University of Kerala

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Preface

Institutional self-inquiry is a natural and necessary outgrowth of quality of higher education. Concern about environmental degradation and realization of values of environment are logical consequences of scholarly research, teaching and learning process. In its pursuit for improving environmental quality and to maintain a pristine environment for the future generation of students, University of Kerala has made a self-inquiry on environmental quality of the campus with the following objectives: (i) To establish a baseline of existing environmental conditions with focus on natural and physical environment; (ii) To understand the current practices of sustainability with regard to the use of water and energy, generation of wastes, purchase of goods, transportation, etc; (iii) To promote environmental awareness through participatory auditing process; and (iv) To create a report that document baseline data of good practices and provide future strategies and action plans towards improving environmental quality for future.

This report is compiled by a committee constituted by IQAC. As there was no standard model for such an environment/green audit of campuses in the state, the committee brainstormed and evolved a questionnaire. With the help of student volunteers, the major part of the data was compiled, which the committee analyzed. The remaining part which involved measurement of quality was entrusted with the Department of Environmental Sciences of University of Kerala and also Pollution Control Board of Govt. of Kerala.

The committee has made short term and long term suggestions to take environment protection to higher levels and it is hoped that this will receive due attention of University authorities and also all stake-holders of the University

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Executive Summary

a. Water management: As such, wise use of water is a general practice in University. Except in one department, rainwater harvesting is not in practice.

b. Waste management: Land filling is the general waste management strategy adopted by the University and there is no management plan for managing inorganic waste, especially plastics. Biogas plants for effectively managing organic wastes are not established in facilities that produce more organic wastes such as canteen, hostels and staff quarters. Further, careless discarding of solid wastes is a common site in many segments of the campus. The campus should be declared free from plastic carry bags and this should be put into practice strictly. However, more departments are now following green charter and started avoiding flex banners and plastic carry bags and cups for social functions and academic programmes.

c. Energy management: A 100kW Grid connected Solar Power Plant at the roof-top of the Golden Jubilee Building at the Kariavattom Campus is capable of generating 1.46 lakh units of electricity a year and it serves as a model for using non-conventional energy sources for future.

d. Landscape/environment: Many departments maintain garden and the campus is greener with fair biodiversity around and gardens maintained by many departments. Absence of long-term eco-restoration programmes for replacing exotic Acacia plantations and land use and development planning remain as a lacuna.

e. Built-up Environment: In general, the built-up environment is not eco-friendly and there is a need for adopting green habitat concept in future planning of buildings.

f. Transportation: Majority of the students in the campus rely on public transport, indicating lesser carbon foot print of the student community.

g. Green Agenda in Syllabus: Green agenda form part of the curriculum in many departments and eco/nature clubs remain active for the cause of environmental protection, though it is not a common practice in all the departments in the campus.

h. Water Quality: In general, is within the stipulated standards, though presence of coliform bacteria in all the samples tested indicates possible contamination with sewage water.

Recommendations

1. Environmental auditing may be conducted by the University in every two years under the auspices of the Dept. of Environmental Sciences. The University can also offer consultancy projects on environmental auditing for other academic and research institutions.
2. Rainwater harvesting facilities may be established at both administrative and academic campuses, foreseeing future needs of water. Further, rainwater pits can be prepared at appropriate places identified with the assistance of Department of Geology and restoration activities may be initiated to sustain the health of ponds and wetlands in the campus.
3. Specific waste management plans should be adopted to manage solid waste in the campus, with the assistance of State Suchithwa Mission and use of plastic carry bags, thermocole cups/plates and flex boards should be banned inside the University. For managing organic wastes, biogas plants may be commissioned at the hostels, canteens, biochemistry department and staff quarters. The wastes generated can be used for promoting organic farming activities within the campus and the products can be used in hostels and canteens, with a plan to ensure the availability of organic food in the canteen and hostels for future. There should be a system for the management of hazardous wastes.
4. The public lights within the campus may be run with solar panels and the replacement of existing lights should be done with LED lamps. Energy auditing should be done with the help of Energy Management Centre (EMC).
5. Frame long-term eco-restoration programmes for replacing exotic Acacia plantations with indigenous trees and need of the hour is to frame a holistic campus development plan to foresee the future developmental needs in tune with green charter adopted by the University.
6. All the blocks in the Campus should develop a garden in front of the building and the expenditure for the same may be met from the Department Development Fund.
7. Green habitat concept should be adopted for all the building construction activities of the University in future, which may help a long way in reducing energy usage, increasing aesthetic appeal of the buildings and class rooms, besides reducing carbon foot print. Further, more green spaces should be established all around the campus around larger trees and shades for the benefit of the students.

8. Fire safety instruments should be installed in all the buildings.
9. More public toilets/e-toilets may be established in the campus and in hostels; separate toilets are required for differently abled students.
10. Vehicle pooling should be promoted both among students and faculty and use of bicycles should be promoted as a policy of university.
11. Irrespective of the subjects, environmental education should be part of curriculum and for the post-graduate programmes at least one credit on environmental education or sustainable development as elective should be made compulsory. Alternatively one credit may be given to students participating in environmental conservation/awareness activities.
12. Considering contamination of water with coliform bacteria, water purification treatment facilities may be installed within the campus in order to ensure safe drinking water.
13. Propose a system for collection and disposal of waste sorted out as organic and others on a daily basis, managed by the campus administration.

Part A: Quality of Life Support Systems

A1 Air Quality Measurement

KARIAVATTOM CAMPUS (North) ENTRANCE					
Sample No.	Determinant	Unit	Value	National Ambient Standards (Vide Act No. 14 of 1981)	Remarks
Filter Paper	Rspm	Mg/m ³	55	100	All within limits
SO2 (256)	SO2	Mg/m ³	3.0	80	
NOx (260)	NOx	Mg/m ³	12	80	
KARIAVATTOM (SOUTH) CAMPUS – COMPUTATIONAL BOLOGY AND BIOINFORMATICS					
Filter Paper	Rspm	Mg/m ³	78	100	“
SO2 (256)	SO2	Mg/m ³	3.5	80	
NOx (260)	NOx	Mg/m ³	15	80	
PALAYAM CAMPUS (BASED ON NEAREST CITY READING)					
Filter Paper	Rspm	Mg/m ³	55	100	“
SO2 (121)	SO2	Mg/m ³	8	80	
NOx (130)	NOx	Mg/m ³	33.5	80	

A2. Water Quality Measurement

Well water: Well water samples were collected from wells near to Hymavathi pond (W1), Ladies Research Hostel (W2), Men’s Research Hostel (W3) and from North campus (W4) of University of Kerala. The analysed parameters included pH, Colour, Electrical Conductivity, Total Dissolved Solids, Dissolved Oxygen, Acidity, Alkalinity, Sulphate, Chlorine, Nitrate, Phosphate, Iron, Total Hardness, Calcium Hardness and Total Coliforms. All the parameters except pH and Iron were within standard desirable limits of drinking water quality (BIS IS: 10500:1991). All well water samples (W1, W2, W3, and W4) are slightly acidic in nature, and were contaminated with coliform bacteria (≥ 21 MPN Index/100ml).

Tap water: Out of the three tested tap water samples (South Campus-T1, University Palayam-T2 and North Campus-T3), the tap water from the South campus (T1) shows slightly acidic pH. Bacteriological quality results indicated the presence of coliform bacteria (≥ 240 MPN Index /100ml) in all tested tap water samples.

Pond water: One surface water sample is collected from the Hymavathi pond (P1) which is located in the University Kariavattom campus. All the physico-chemical parameters except pH and colour are within standard desirable limits. Pond water indicated slightly acidic pH (5.98) and has the colour intensity of 50 Hazen Units. The tested pond water sample was also bacteriologically contaminated with coliform bacteria (93 MPN Index /100ml)

Part B: Environmental Practices

B1. WATER MANAGEMENT

Sl. No	Department/Block	Wise use of water	Water leakage repair	Use of water purification	Rain Harvest	Use of water Cooler	Water pollution incidence	Water Use per day in liters	Water Storage	Water tank cleaning	Water management Practices
1	Botany	√	√	√	×	√	√	5000	√	√	×
2	Zoology	√	√	√	×	√	√	1500	√	√	×
3	Compu. Bio. & Bioinformatics	√	√	√	√	√	√	1000	√	√	×
4	Communication & Journalism	√	√	√	×	√	√	500	√	√	×
5	Computer Science	√	√	√	×	√	√	1000	√	√	×
6	Statistics	√	√	√	×	√	√	1000	√	√	×
7	Psychology	√	×	√	×	√	√	500	√	√	×
8	Geology	√	√	√	×	√	√	500	√	√	×
9	CGIST	√	×	√	×	√	√	250	√	√	×
10	Demography & PS	√	×	√	×	√	√	500	√	√	×
11	Mathematics	√	×	√	×	√	√	1000	√	√	×
12	Physics	√	×	√	×	√	√	250	√	√	×
13	Biochemistry	√	√	√	×	√	√	1000	√	√	×
14	Hindi	√	√	√	×	√	√	500	√	√	×
14a	ICKS	√	√	√	×	√	√	100	√	√	×
15	Chemistry	√	√	√	×	√	√	500	√	√	×
16	Law	√	√	√	×	√	√	250	√	√	×
17	Commerce	√	√	√	×	√	√	200	√	√	×
17a	IMK	√	√	√	×	√	√	1000	√	√	×
18	Biotechnology	√	√	√	×	√	√	1000	√	√	×
19	Aquatic Biology	√	√	√	×	√	√	1000	√	√	×
20	Optoelectronics	√	×	√	×	√	√	250	√	√	×
21	Environmental Science	√	√	√	×	√	√	1500	√	√	×
22	Future Studies	√	√	√	×	√	√	1000	√	√	×
23	Archeology	√	√	√	×	√	√	250	√	√	×
24	History	√	×	√	×	√	√	500	√	√	×
25	Political Science	√	√	√	×	√	√	250	√	√	×
26	Economics	√	×	√	×	√	√	1000	√	√	×
27	Sociology	√	√	√	×	√	√	500	√	√	×
28	Islamic Studies	√	×	√	×	√	√	250	√	√	×
29	Philosophy	√	×	√	×	√	√	250	√	√	×
30	Malayalam	√	√	√	×	√	√	1000	√	√	×
31	Sanskrit	√	√	√	×	√	√	250	√	√	×
32	Linguistics	√	√	√	×	√	√		√	√	×
33	Arabic	√	√	√	×	√	√		√	√	×
34	Oriental Research Institute (ORI)	√	√	√	×	√	√		√	√	×
35	Research Hostel (Men)	√	√	√	×	√	√	2000	√	√	×
36	Research Hostel (Ladies)	√	√	√	×	√	√	750	√	√	×

37	Ladies Hostel (old)	√	√	√	×	√	√	1000	√	√	×
38	Ladies Hostel (New)	√	√	√	×	√	√	750	√	√	×
39	PG Men's Hostel	√	√	√	×	√	√	1000	√	√	×
40	University Guest House	√	√	√	×	√	√		√	√	×
41	Cafeteria (Vighneswara)	√	√	√		√	√		√	√	×
42	Canteen	√	√	√	×	√	√		√	√	×
43	Co-operative Society	√	√	√	×	√	√		√	√	×
44	Campus Library	√	√	√	×	√	√		√	√	×
45	Staff Housing Co-op Society	√	√	√	×	√	√		√	√	×
46	Co-operative Society Store	√	√	√	×	√	√		√	√	×
48	Academic Staff College	√	√	√	×	√	√	250	√	√	×
49	CCF + CSS	√	√	√	×	√	√	100	√	√	×
50	Campus Admin + UE + Elect	√	√	√	×	√	√	100	√	√	×
51	Post Office	√	√	√	×	√	√	100	√	√	×
52	SBT	√	√	√	×	√	√		√	√	×
53	Security	√	√	√	×	√	√	1000	√	√	×
54	Nursery School	√	√	√	×	√	√	100	√	√	×

B2 WASTE MANAGEMENT

Sl. No	Department/Block	a Food/Organic waste/day	b Non Plastic dry waste /day	c Plastic, Thermocol/ day	d Other (e-waste)	e Management of Organic Waste	f Management of Other Waste?	g Waste dumping pit?	i Waste Management Practices
1	Botany	L	25	5	-	-	-	✓	✓
2	Zoology	L	70	25	-	✓	x	✓	✓
3	Compu. Bio. & Bioinformatics	H	x	x	-	✓	x	✓	✓
4	Communication & Journalism	H	x	x	3	x	x	✓	x
5	Computer Science	✓	✓	✓	✓	x	x	✓	x
6	Statistics	✓	✓	x	x	x	x	✓	✓
7	Psychology	✓	✓	x	x	✓	x	✓	x
8	Geology	✓	✓	✓	✓	x	x	✓	-
9	CGIST	✓	✓		✓	x	x	✓	x
10	Demography & PS	✓	✓	✓	x	x	x	x	x
11	Mathematics	✓	✓	x	x	x	x	✓	✓
12	Physics	L	✓	✓	✓	-	-	✓	x
13	Biochemistry	Nil	5	1	✓	✓	✓	✓	✓
14	Hindi	✓	✓	✓	x	x	x	✓	x
14a	ICKS	H	500	x	✓	✓	✓	x	x
15	Chemistry	L	3-5	✓		x	x	✓	✓
16	Law	L	500	500	x	x	x	✓	✓
17	Commerce	L	1	✓	✓	x	✓	✓	✓
17a	IMK	L	5	1	-	x	x	✓	-
18	Biotechnology	Min	Min	Min	-	x	✓	✓	-
19	Biology	L	½	✓	✓	x	✓	✓	x
20	Optoelectronics	L	x	x	✓	x	x	✓	x
21	Environmental Science	L	-	x	x	✓	✓	✓	✓
22	Future Studies	L	100	x	x	x	x	✓	✓
23	Archeology	N	1-2	1	x	x	x	✓	x
24	History	2	2	250	✓	x	x	✓	✓
25	Political Science	M	10	1	x	x	x	✓	x
26	Economics	15%	3	10%	x	✓	✓	✓	✓
27	Sociology	25%	7	5	✓	x	x	✓	x
28	Islamic Studies	2-4	20%	20%	x	x	x	✓	x
29	Philosophy	1.5	20%	20%	x	x	x	✓	x
30	Malayalam	-	-	-	-	x	-	✓	-
31	Sanskrit	1	½	100	x	x	✓	✓	N.A
32	Linguistics	-	-	x	x	x	x	✓	x
33	Arabic	-	-	✓	✓	x	x	✓	x
34	Oriental Res Institute (ORI)	-	2/35	✓	✓	x	x	✓	✓
35	Research Hostel (Men)	4-7	½	½	-	-	-	✓	-
36	Research Hostel (Ladies)	8-10	1	½	✓	✓	x	✓	x
37	Ladies Hostel (old)	-	-	-	-	✓	-	✓	-

38	Ladies Hostel (New)	-	-	-	-	-	-	√	-
39	PG Men's Hostel	8-10	½	½	-	√	-	√	√
40	University Guest House	√	√	-	-	×	×	1	-
41	Cafeteria (Vighneswara)	√	×	×	×	√	√	√	×
42	Canteen	√	×	×	×	√	√	√	×
43	Co-operative Society	×	×	×	×	×	×	×	×
44	Campus Library	-	-	-	√	√	√	√	-
45	Staff Housing Co-op Society	×	paper	×	×	√	√	√	×
46	Co-operative Society Store	-	-	-	×	√	√	√	-
48	Academic Staff College	4	2	1	-	√	×	√	×
49	CCF + CSS	80	√	×	√	×	×	×	×
50	Campus Admin + UE + Elect	400	×	×	×	×	×	×	×
51	Post Office	275	×	×	×	×	×	×	×
52	SBT	100	500	×	×	×	×	×	×
53	Security	250	×	×	×	×	×	×	×
54	Nursery School	√	-	×	-	-	-	-	√
H- High, L- Low, M- Medium, N- Nil									

B3 ENERGY MANAGEMENT

Sl. No	Department /Block	No. of Tubes + Bulbs	No. of A/C	No. of LCD Projector	No. of Photocopier	Computers+ Printer	LEDs	Non-conventional (solar)	Star rating	Energy Management Practices
1	Botany	250	7	2	2	10	-	-	√	√
2	Zoology	60	12	3	1	8	×	×	√	√
3	Compu. Bio. & Bioinformatics	141	28	3	1	75-80	×	×	√	√
4	Communication & Journalism	30	2	1	1	18	×	×	√	√
5	Computer Science	111	15	2	1	146	×	×	√	√
6	Statistics	35	2	2	×	30	×	×	×	×
7	Psychology	29	×	2	2	18	×	×	×	×
8	Geology	60	9	1	0	6	×	×	√	×
9	CGIST	30	5	2	1	30-40,5	×	×	√	√
10	Demography & PS	25	4	2	1	22	×	×	×	×
11	Mathematics	20	1	4	1	30	×	×	×	-
12	Physics	100	11	3	4	17	×	×	√	×
13	Biochemistry	150	4	2	1	27	×	×	√	√
14	Hindi	49	×	2	1	3	×	×	×	-
14a	ICKS	20	1	1	1	3	×	×	×	×
15	Chemistry	150	6	2	2	10	×	×	√	√
16	Law	40	×	3	1	15	×	×	×	√
17	Commerce	35	1	1	2	18	×	×	√	×
17a	IMK	85	2	4	1	19	×	×	√	-
18	Biotechnology	45	10	1	1	12	-	×	×	-
19	Aquatic Biology	100	2	5	2	21	×	×	√	√
20	Optoelectronics	100	5	2-3	×	22	×	×	√	√
21	Environmental Science	88	4	3	1	14	×	×	√	√
22	Future Studies	148	8	5	2	44	×	×	√	√
23	Archeology	100	1	1	1	23	×	×	√	×
24	History	200	3	2	3	15	×	×	√	×
25	Political Science	62	0	1	1	23	×	×	×	×
26	Economics	56	×	3	3	19	×	×	×	×
27	Sociology	32	×	1	×	10	×	×	×	×
28	Islamic Studies	30	×	1	1	13	×	×	√	√
29	Philosophy	30	×	2-1	1	7	×	×	×	×
30	Malayalam	-	3	2	1	1	-	×	-	√
31	Sanskrit	45	×	1	1	3	×	×	√	√
32	Linguistics	40	2	2	1	21	×	×	×	×
33	Arabic	91	×	√	2	12	2	×	×	×
34	Oriental Res Institute (ORI)	158	×	1	2	13	×	×	×	×
35	Research Hostel (Men)	135	×	×	×	×	×	×	√	-
36	Research Hostel (Ladies)	-	×	×	×	×	×	×	√	×
37	Ladies Hostel (old)	155	×	×	×	1	×	×	√	×
38	Ladies Hostel (New)	257	×	×	×	×	×	×	√	×

39	PG Men's Hostel	94	×	×	×	1	5	×	-	-
40	University Guest House	52	3	×	×	×	×	×	-	-
41	Cafeteria (Vighneswara)	8	×	×	×	×	×	×	√	×
42	Canteen	6	×	×	×	×	2	×	√	×
43	Co-operative Society	3	1	×	1	4	×	×	×	×
44	Campus Library	150	10	1	1	61	15	×	-	√
45	Staff Housing Co-op Society	5	×	×	1	2	×	×	×	×
46	Co-operative Society Store	5	×	×	×	2	×	×	×	×
48	Academic Staff College	110	15	3	2	58	5	×	√	×
49	CCF + CSS	22	7	×	1	42	×	×	×	min
50	Campus Admin + UE + Elect	49	×	×	3	42	×	√	√	×
51	Post Office	6	×	×	×	6	×	×	×	×
52	SBT	28	3	×	1	14	×	×	×	×
53	Security	11	×	×	×	2	×	×	×	×
54	Nursery School	14	×	×	×	-	×	×	-	-

B4 LANDSCAPE/ENVIRONMENT

Sl. No	Department/Block	Over all Green cover	Garden	Indigenous Trees/Plants	Exotic Plants /Animals	Overall Biodiversity	Landscape Management Plan	Natural water bodies
1	Botany	G	√	√	√	√	√	√
2	Zoology	G	√	√	√	√	√	√
3	Compu. Bio.& Bioinformatics	G	√	√	√	√	√	√
4	Communication & Journalism	G	√	x	x	√	x	-
5	Computer Science	A	x	√	x	x	x	x
6	Statistics	A	x	x	x	A	x	x
7	Psychology	A	x	P	x	A	x	x
8	Geology	G	x	x	x	A	x	x
9	CGIST	A	x	x	x	A	x	x
10	Demography & PS	A	x	x	x	x	x	x
11	Mathematics	A	x	P	x	A	x	x
12	Physics	G	x	A	Nil	√	Nil	Nil
13	Biochemistry	G	√	G	√	G	√	x
14	Hindi	G	√	G	x	A	x	x
14a	ICKS	G	√	G	x	A	x	x
15	Chemistry	G	√	G	x	G	x	Nil
16	Law	G	√	√	x	√	√	x
17	Commerce	A	x	A	√	Avg	x	x
17a	IMK	P	x	A	x	G	x	Nil
18	Biotechnology	G	√	A	-	A	x	x
19	Aquatic Biology	A	√	√	x	A	x	√
20	Optoelectronics	A	√	G	A	G	x	x
21	Environmental Science	A	√	A	√	G	√	x
22	Future Studies	G	x	A	A	G	x	Nil
23	Archeology	G	√	G	√	G	x	x
24	History	G	√	√	√	G	x	x
25	Political Science	A	√	A	x	A	√	x
26	Economics	G	√	G	√	√	x	x
27	Sociology	A	√	√	√	A	√	x
28	Islamic Studies	G	√	√	√	√	x	x
29	Philosophy	G	√	√	√	√	x	x
30	Malayalam	A	√	A	√	√	√	x
31	Sanskrit	G	√	G	√	Nil	√	Nil
32	Linguistics	A	x	A	√	A	x	x
33	Arabic	A	√	A	Nil	Nil	√	x
34	Oriental Res Institute (ORI)	G	√	G	x	G	√	x
35	Research Hostel (Men)	A	√	A	x	A	√	x
36	Research Hostel (Ladies)	G	√	G	√	G	Nil	√
37	Ladies Hostel (old)	G	x	G	Nil	A	Nil	√
38	Ladies Hostel (New)	G	x	A	Nil	A	Nil	Nil

39	PG Men's Hostel	A	Nil	A	×	A	×	×
40	University Guest House	A	×	A	√	A	Nil	Nil
41	Cafeteria (Vighneswara)	A	×	P	×	P	×	×
42	Canteen	P	×	P	×	P	×	×
43	Co-operative Society	A	×	A	×	P	×	×
44	Campus Library	G	√	G	Nil	G	√	Nil
45	Staff Housing Co-op Society	P	×	P	Nil	Nil	Nil	Nil
46	Co-operative Society Store	P	×	P	×	A	×	×
48	Academic Staff College	A	√	A	Nil	G	Nil	Nil
49	CCF + CSS	P+A	×	P+A	P	A	×	×
50	Campus Admin + UE + Elect	A+G+P	√	P+A+P	√	A	A	×
51	Post Office	A	×	P	√	A	×	×
52	SBT	P	×	×	×	×	×	×
53	Security	A	√	P	×	√	×	×
54	Nursery School	G	×	A	√	A	×	Nil
G-Good, A-Average, P-Poor								

B5 BUILT-UP ENVIRONMENT

		*a	b	c	d	e	*f	g	*h	*i	j
Sl. No	Department/Block	Building type	Area in Sq. ft	Eco-friendliness	Fire prevention provisions	Aesthetic appeal	Serenity of class rooms	Ladies rest room	Recreation room	Provision for differently abled	Toilets; Men, women, diff abled
1	Botany		10,000	G	√	G	G	√	x	√	10
2	Zoology	C	1120	G	√	G	√	x	x	x	2
3	Compu. Bio.& Bioinformatics	C	NA	√	x	√	G	√		x	6
4	Communication & Journalism	C	5000	G	x	G	G	x	x	x	4
5	Computer Science	C	3000	P	x	P	A	x	x	√	7
6	Statistics	C	2300	G	√	A	A	x	x	√	3
7	Psychology	C	2500	G	x	A	A	x	x	√	2
8	Geology	C	5000	A	x	A	A	x	x	√	5
9	CGIST	C	1900	G	√	G	G	√	x	x	2
10	Demography & PS	C	3000	A	√	A	A	x	x	√	5
11	Mathematics	C	2000	G	x	A	A	x	x	√	√
12	Physics	C	NA	A	x	A	G	√	x		9
13	Biochemistry	C	NA	G	√	G	G	x	x	√	4
14	Hindi	C	8000	G	x	√	*f	x	x	x	6
14a	ICKS	C	3200	-	x		-	x	x	√	2
15	Chemistry	C	NA	G	√	G	√	x	x	√	13
16	Law	*a	10200	√	Nil	Nil	√	√	x	√	6
17	Commerce	*a	10,000	P	x	P	A	x	x	√	4
17a	IMK	*a	10,000	A	x	A	A	x	√	√	√
18	Biotechnology	C	NA	G	x	G	G	x	√	√	√
19	Aquatic Biology	C	NA	G	√	G	√	x	√	√	4
20	Optoelectronics	*a	20,000	A	√	A	√	x	x	√	11
21	Environmental Science	H	10,000	A	x	G	G	x	x	√	12
22	Future Studies	C	7000	G	x	A	√	x	x	x	2
23	Archeology	H	NA	G	x	G	√	x	x	√	6
24	History	C	NA	G	x	A	√	x	x	x	5
25	Political Science	C	NA	A	x	A	A	x	x	√	14
26	Economics	C	NA	G	x	A	G	√	√	x	5
27	Sociology	C	NA	G	x	G	A	x	x	x	2
28	Islamic Studies	H	NA	G	x	G	A	x	x	√	6
29	Philosophy	H	NA	G	x	G	A	x	x	√	6
30	Malayalam	C	NA	A	x	A	G	√	x	√	6
31	Sanskrit	*a	NA	G	x	A	A	x	x	√	2
32	Linguistics	C	5000	G	x	A	A	x	x	x	4
33	Arabic	C	NA	-	x	A	G	√	x	√	16
34	Oriental Res Institute (ORI)	H	NA	G	√	G	G	√	x	√	12
35	Research Hostel (Men)	*a	NA	A	√	A	-	-	√	x	2
36	Research Hostel (Ladies)	C	NA	G	√	G	G	√	√	Nil	48
37	Ladies Hostel (old)	C	NA	G	√	G	G	√	√	x	48

38	Ladies Hostel (New)	C	NA	G	√	G	G	√	√	Nil	42
39	PG Men's Hostel	*a	NA	A	√	A	-	--	-	-	19
40	University Guest House	*a	NA	A	x	-	-	-	-	-	13
41	Cafeteria (Vighneswara)	C	NA	G	x	G	-	x	x	x	1
42	Canteen	C	NA	A	x	A		x	x	x	1
43	Co-operative Society	C	NA	A	x	P	P	x	x	x	x
44	Campus Library	C	NA	G	√	G	-	x	x	√	√
45	Staff Housing Co-op Society	C	NA	A	x	A	-	x	x	x	1
46	Co-operative Society Store	C	NA	G	x	G	-	x	x	-	√
48	Academic Staff College	C	4800	G	√	A	√	√	√	√	4
49	CCF + CSS	C	1800	A+G	√	A	A	x	x	√	√
50	Campus Admin + UE + Elect	C	2343	G	√	A	A	x	√	x	√
51	Post Office	C	NA	G	√	P	P	x	√	x	1
52	SBT	C	NA	G	√	G	G	√	x	x	3
53	Security	C	NA	P	x	A	A	x	x	x	4
54	Nursery School	C	NA	G	x	G	G	-	-	-	3

NA- Not Applicable

G-Good, A-Average, P-Poor C-Concrete, H- Heritage

1)*a--Three Stored building

3)* a-Concrete with heritage look Haritharatnakaram-thatched, *h-One court (shuttle)

12) *i- Ramp in available.

13) *a- Concrete- 3 floors

14) *f—Clean air- good; Paint- Good; Spacious

15) *a-- Concrete- 3 storaged building;

16) *a-Concrete double storaged with cellar

17) *a-Concrete 3 stored

17A)*a- Multi Storied Concrete Building

20) *a- Concrete three storaged building

31) *a- Concrete triple storaged building.

35) *a- Concrete 2 floor

39)*a- Concrete two floor

40)*a-Concrete two floor

B6 TRANSPORTATION

		a	b	c	d	e
Sl. No	Department/Block	Dept. Vehicle No	Members with vehicles	Members using public transportation (%)	Use of Bicycles?	Vehicle pooling?
1	Botany	1	18	80	-	-
2	Zoology	x	7	80	1	x
3	Compu. Bio.& Bioinformatics	√	10	40	x	x
4	Communication & Journalism	x	7	80	1	x
5	Computer Science	x	6	90	x	x
6	Statistics	x	7	75	x	x
7	Psychology	x	7	-	x	x
8	Geology	√	5	70	x	x
9	CGIST	√	15	90	x	x
10	Demography & PS	x	10	<60	x	x
11	Mathematics	x	6	<85	x	x
12	Physics	x	5	80	x	x
13	Biochemistry	x	14	83	x	√
14	Hindi	x	6	90%	x	x
14a	ICKS	x	1	<90%	x	x
15	Chemistry	x	12	90%	x	x
16	Law	x	3	80%	x	x
17	Commerce	x	6	50%	-	x
17a	IMK	x	12	-	x	x
18	Biotechnology	x	1	30%	x	x
19	Aquatic Biology	x	6	80%	2	2%
20	Optoelectronics	x	12	50%	x	x
21	Environmental Science	x	4	90%	1	x
22	Future Studies	x	13	75%	x	√
23	Archeology	x	5	80%	1	√
24	History	x	10	90%	x	x
25	Political Science	x	17	95	x	x
26	Economics	x	5	90	2	x
27	Sociology	x	13	98%	x	x
28	Islamic Studies	x	8	80%	x	x
29	Philosophy	x	3	80%	x	√
30	Malayalam	x	5	-	-	√
31	Sanskrit	x	10%	90%	x	x
32	Linguistics	x	14	100%	x	x
33	Arabic	√	10	-	1	x
34	Oriental Res Institute (ORI)	x	8	8/35	1	x
35	Research Hostel (Men)	x	-	-	5	
36	Research Hostel (Ladies)	x	x	x	x	x
37	Ladies Hostel (old)	x	x	x	x	x

38	Ladies Hostel (New)	×	×	×	×	×
39	PG Men's Hostel	×	10	-	3	×
40	University Guest House	×	1	90%	-	-
41	Cafeteria (Vighneswara)	×	5	4	1	√
42	Canteen	×	×	3	×	Rent
43	Co-operative Society	×	2	×	×	×
44	Campus Library	×	8	10%	×	√
45	Staff Housing Co-op Society	×	×	2	×	×
46	Co-operative Society Store	×	1	1	-	×
48	Academic Staff College	√	4	90%	×	×
49	CCF + CSS	×	8	45	1	√
50	Campus Admin + UE + Elect	√	14	23+86+66	×	√
51	Post Office	×	11	40	2	×
52	SBT	×	3	76%	×	√
53	Security	√	8	77%	×	×
54	Nursery School	×	-	-	-	-

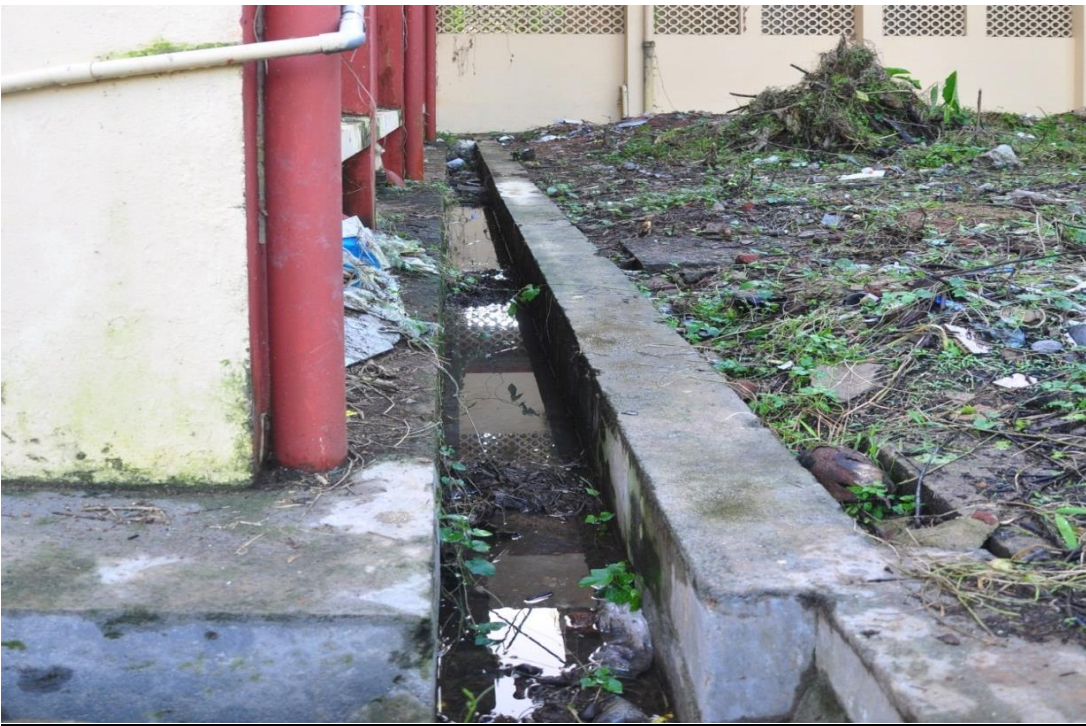
B7 GREEN AGENDA IN SYLLABUS

Sl. No	Department /Block	*a Environmental education in syllabus	*c Green Research	*d Green Clubs	e Animal Experiments?	*i Ethics committee?	*j Extension related to Environment
1	Botany	√	√	√	×	×	√
2	Zoology	-	×	√	√	√	√
3	Compu. Bio.& Bioinformatics	×	√	√	√	√	√
4	Communication & Journalism	√	×	√	-	-	√
5	Computer Science	×	×	√	×	×	×
6	Statistics	×	-	×	×	×	×
7	Psychology	√	×	×	×	×	√
8	Geology	√	×	√	×	×	×
9	CGIST	√	√	×	×	×	×
10	Demography & PS	√	√	×	×	×	√
11	Mathematics	×	×	√	×	×	×
12	Physics	×	×	×	×	×	×
13	Biochemistry	√	√	×	×	√	×
14	Hindi	-	×	×	×	×	×
14a	ICKS	-	-	×	×	×	×
15	Chemistry	√	√	√	×	×	√
16	Law	×	√	√	×	×	√
17	Commerce	×	×	×	×	×	×
17a	IMK	√	√	×	×	×	×
18	Biotechnology	1	√	√	√	√	√
19	Aquatic Biology	√	√	√	√	√	√
20	Optoelectronics	√	√	√	×	×	×
21	Environmental Science	√	√	√	×	×	√
22	Future Studies	√	√	√	×	×	×
23	Archeology	-	×	√	×	×	×
24	History	√	×	√	×	×	√
25	Political Science	√	√	×	×	×	√
26	Economics	√	×	√	×	×	√
27	Sociology	√	√	√	×	√	√
28	Islamic Studies	-	×	√	×	×	√
29	Philosophy	-	-	√	×	×	×
30	Malayalam	√	√	√	×	√	-
31	Sanskrit	×	√	√	×	×	√
32	Linguistics	√	√	√	×	√	×
33	Arabic	×	×	√	×	×	*
34	Oriental Res Institute (ORI)	×	×	√	×	×	√

1) *a- PG Diploma in Biodiversity Conservation, Seed bank for conservation
 3) *i- Only University level
 4) *a- Topic included in the syllabus, *j- Media Literacy Campaign
 7) *d- Journal club
 13) *a- Environmental Biochemistry as elective, *c- Generation of useful material from marine bio-waste- a work is being undertaken. *i- Animal ethical committee-CPCSEA
 19) *a-Offer an elective on Environmental Education and Sustainable Development for I sem; *j- Clean-up Sankhumukham Beach
 31) *c- Research in the department is doing her research in the topic Vriksha Ayurveda; *j- We are doing extension activities with the help of public and LSG under the Bhoomitrasena Club
 33) *j- Translation work

Appendix 1: Campus Environment Snap Shots











Appendix 2 : List of Student Volunteers

Student Volunteers
Nivedya S.R. (Aq. Biology & Fisheries) Geethu.G.S. (Aq. Biology & Fisheries) Neethu R.V. (Aq. Biology & Fisheries)
Vishnu(Zoology) Raichal(Zoology) Nivya(Zoology) Greeshma(Zoology) Henaar(Zoology) Honey(Zoology) Ancy(Zoology) Asima(Zoology)
Aparna S.(Com.Biology) Meenu Muraleedharan(Botany) Ancy S Watson(Botany) Arjun S.K.(Botany) Greeshma Thulasi(Com.Biology)
Meenu Muraleedharan(Botany) Arjun S.K(Botany) Ancy S Watson(Botany) Greeshma Thulasi(Com.Biology) Aparna S.(Com.Biology)
Aathira Sree S(Botany) Shemy Rasheed (Botany) Pramodini P.(Aq.Bio & Fisheries) Mariyam Fazula(Aq.Bio & Fisheries) Arya Sudhakaran(Aq.Bio & Fisheries)
Karthika Chandran A(Aq.Bio) Vinitha S.Babu(Botany) Jinu J.S. (Aq.Bio & Fisheries)
Mahitha G.(Botany) Nivya Murali(Zoology)
Athira M.Nair(Aq.Bio & Fisheries) Veena Ayyapan G(Aq.Bio & Fisheries) Anjana V.S(Aq.Bio & Fisheries)
Vijesh Kumar M.(Sanskrit) Sibi B.S. (Sanskrit) Arya S.Vijayan (Sanskrit) Anusree.P.S. (Sanskrit) Revathy S. Chandran(Sanskrit)

Vishnu H.(Zoology) Muneer A.(Aq.Bio) Akhil R.V. (EVS) Ancy P.(Zoology) Greeshma Pradeep(Zoology)
Athira Sivan(Aq.Bio & Fisheries), Neethu M. (Aq.Bio & Fisheries), Sima Satheesh(Aq.Bio & Fisheries) Bini Mol (Env.Sc) Swathy (Env.Sc) Soumya (Env.Sc)
Chansoor S. (Env.Sc) Haripriya S.L. (Env.Sc) Mahamadhu(Env.Sc) Jinu J.S. (Aq.Bio) Karthika chandran A(Aq.Bio) Vinitha S. Babu (Botany).

Appendix: 3 Notes from the Joint Registrar, Campus Administration

1. **Renewable Energy Campus** - with the technical support of ANERT, Govt. of Kerala, Kariavattom Campus has achieved the title of the FIRST UNIVERSITY CAMPUS in Kerala utilizing the Solar Energy to generate 400 units per day out of the total consumption of 5100 units per day. This solar power is transmitted to KSEB power grid. Therefore we save an amount of Rs. 2, 800/- per day.
2. **Green Campus** -The Campus Administration had launched a pilot project with the financial support of Kerala State Bio-diversity Board called “Replacing Acacia with indigenous trees”. This is the first step to clearing Acacia from Campus. This project is managed with the support of the Department of Botany, University of Kerala. *Dr. Oommen .V. Oommen, Chairman, Kerala State Bio-diversity Board inaugurated the project.*
3. **Organic Vegetable Garden at Hostels** - First joint venture of University of Kerala and Department of Agriculture, Govt. of Kerala for cultivating Organic Vegetables at our Hostel Campus. This pilot project will be implemented by the Technical and financial support of the Department of Agriculture, Government of Kerala.
4. **Public toilets in the Campus** - Two public toilets installed with the sponsorship of SBT, Kariavattom and Kerala State Women’s Development Corporation, by the initiative of Campus Administration.
5. **Water Management** – Two major wells are coming up near Hymavathy Lake and another one near department of Botany. These two wells will enable the Campus to become self-sufficient in water supply and to reduce the water charges to zero. The project also couples water harvesting.

