

## 4.2

### Department of Information Technology

1. Name of the Department : Department of Information Technology
2. Year of establishment : 2000
3. Is the Department part of a School/Faculty of the university?  
Yes, School of Information Science and Technology
4. Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.)  
M.Sc. (Computer Science), M.C.A., M.Phil. (Computer Science), Ph.D. (Information Technology / Computer Science).
5. Interdisciplinary programmes and departments involved : Nil
6. Courses in collaboration with other universities, industries, foreign institutions, etc. : Nil
7. Details of programmes discontinued, if any, with reasons : Nil
8. Examination System: Annual/Semester/Trimester/Choice Based Credit System: CCSS
9. Participation of the department in the courses offered by other departments : Nil
10. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	1	1	1
Associate Professor	2	2	2
Assistant Professor	5	1	1
Others – Assistant Professor (On contract)	6	5	5

11. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance

Name	Qualification	Designation	Specialization	No of years experience	No. of Ph.D. / M.Phil. students guided for the last four years
Dr. N.K. Narayanan	Ph.D.	Professor	Signal Processing Speech technology Image Processing Pattern recognition Neural Computing Bio-Informatics Non-linear Dynamics	33	3

Dr. Babu Anto P.	M.Sc. Ph.D.	Associate Professor	Speech Processing Natural Language Processing Image Processing Visual Cryptography	22	5
Dr. G. Raju	M.Sc. M.C.A. M.Tech Ph.D.	Associate Professor	Image Processing Pattern Recognition Soft Computing Data Mining Software Engineering Cluster Computing	20	8
Dr. Rajkumar K. K.	M.Sc. Ph.D.	Assistant Professor	Image Processing	15	-
Ms. Nishath Mohammed	M.C.A.	Assistant Professor (on contract)	-	10	-
Ms. Subina E.	M.C.A.	Asst Prof (on contract)	-	5	-
Ms. Dhanya M.	M. Sc.	Asst Prof (on contract)	-	6	-
Ms. Roshni O.V.	M. Sc.	Asst Prof (on contract)	-	5	-
Ms. Sneha Mohan	M.C.A.	Asst Prof (on contract)	-	1	-

12. List of senior Visiting Fellows, adjunct faculty, emeritus professors
- i. Dr. Suresha, Professor, Department of Studies in Computer Science, University of Mysore.
  - ii. Dr. Lalitha Rangarajan, Asso. Professor, Department of Studies in Computer Science, University of Mysore.

- iii. Dr. Manjappa D., Professor, PG Department of Computer Science, Mangalore University
- iv. Dr. Doraiswami, Professor, PG Department of Computer Science, Mangalore University
- v. Dr. Mendus Jacob, Director –MCA, Marian College, Kuttikkanam.
- vi. Dr. V.P.N. Nampoodiri, Cochin University of Science & Technology
13. Percentage of classes taken by temporary faculty – programme-wise information  
M.C.A. - 60%, M. Sc. - 60%
14. Programme-wise Student Teacher Ratio  
MCA : 15:1, M Sc : 15:1
15. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual

	Sanctioned	Filled	Actual (including CAS & MPS)
Technical Asst	1	1	1
Office Asst	1	1	1
Office Attendant	1	1	1
Jr. Librarian	1	1	1

16. Research thrust areas as recognized by major funding agencies  
Image Processing, Digital Speech Processing, Natural Language Processing
17. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

Sl.No.	Name of Project	Funding Agency	Amount Sanctioned	Name of PI
1	Soft Computing Approaches to Medical Image Enhancement	UGC) (MRP	2,80,000	Dr. G. Raju
2	Development of Indigenous knowledge of tribal languages of northern districts of Kerala	UGC - under Innovative Project – GDA scheme	10,00,000	Dr. Babu Anto P.

18. Inter-institutional collaborative projects and associated grants received  
a) National collaboration: Nil                      b) International collaboration Nil
19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received. : Nil
20. Research facility / centre with
  - state recognition: Nil
  - national recognition: Nil
  - international recognition: Nil
21. Special research laboratories sponsored by / created by industry or corporate bodies: Nil
22. Publications:
  - Number of papers published in peer reviewed journals (national / international) :

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	Dr. Babu Anto P.	10
	Dr. Rajkumar K K	05
	Dr. G. Raju	40
<input type="checkbox"/>	Monographs : Nil	
<input type="checkbox"/>	Chapters in Books	
	Dr. N K Narayanan	05
	Dr. Babu Anto P.	02
	Dr. Rajkumar K.K.	02
	Dr. G. Raju	09
<input type="checkbox"/>	Edited Books :	
	Dr. G. Raju/ Dr. Rajkumar K.K./Dr. Babu Anto P : 1	
<input type="checkbox"/>	Books with ISBN with details of publishers	
<input type="checkbox"/>	Number listed in International Database (For <i>e.g.</i> Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)	
	Dr. N K Narayanan	14
	Dr. Babu Anto P.	02
	Dr. Rajkumar K K	04
	Dr. G. Raju	30
<input type="checkbox"/>	Citation Index – range / average	
	Dr. N K Narayanan	99
	Dr. Babu Anto P.	60
	Dr. Rajkumar K K	10
	Dr. G. Raju	376
<input type="checkbox"/>	SNIP	
<input type="checkbox"/>	SJR	
<input type="checkbox"/>	Impact Factor – range / average	
	Dr. N K Narayanan	.4 to 1.6
	Dr. G. Raju	.537 to 1.019
<input type="checkbox"/>	h-index	
	Dr. N K Narayanan	09
	Dr. Rajkumar K K	02
	Dr. G. Raju	11
23.	Details of patents and income generated : Nil	
24.	Areas of consultancy and income generated : Nil	
25.	Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad : Nil	
26.	Faculty serving in	
	a) National committees :	
	Dr. N K Narayanan	: 1
	b) International committees	
	c) Editorial Boards :	
	Dr. N K Narayanan	: 4
	Dr. G. Raju	: 1

- c) Board of studies/ academic bodies of other Universities
- Dr. N K Narayanan : 3
  - Dr. G. Raju : 2
  - Dr. Babu Anto P. : 1
  - Dr. Rajkumar K.K. : 1
27. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).  
Refresher Course – Dr. Rajkumar K.K.
28. Student projects
- percentage of students who have done in-house projects including inter-departmental projects: 30%
  - percentage of students doing projects in collaboration with other universities / industry / institute : 60%
29. Awards / recognitions received at the national and international level by
- Faculty Nil
  - Doctoral / post doctoral fellows Nil
  - Students Nil
30. Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any.
- i. Two Day National Workshop on Enhancing Research Skills IN Information Technology Date: 23-24 October 2011  
Distinguished resource person: Dr. D.S. Guru, University of Mysore
  - ii. National Conference on Recent Advances in Signal and Image Processing Date: 24-26 May 2012 (UGC/University).  
Distinguished resource person: Dr. M. Wilscy, University of Kerala.
  - iii. Three Day National Level Workshop on “Pattern Recognition and Machine Intelligence” Date: 20-18 October 2013 (UGC/University).
  - iv. Five day workshop in connection with restructuring of under graduate programmes in Computer science, from 3.3.09 to 7.3.209.
31. Code of ethics for research followed by the departments
- The department of IT, Kannur University seeks to preserve, extend, and communicate truth. The practice as researchers should advance the knowledge, mission, and values of our profession, and maintain and enhance its validity through rigorous study, active dissemination and discussion, and responsible criticism. All faculty, research staff, and students should fulfill the responsibilities and obligations stated below:
- Accuracy of research data and reports : Ensure the accuracy of all data that have gathered and/or used in our research. Ensure that only the correct data, information, and research results shall be reported in journals, conferences, and reports to clients in case of commissioned research Take reasonable steps to rectify significant errors that we or others have found in our published data, via the issuance of erratum, retraction, or correction of the data Avoid misleading statements or declarations and vague assertions that could be subject to misinterpretation. If such misinterpretation is brought to our attention, it is our obligation to immediately issue a clarification or rectification.
- Acknowledgment of sources of data/information or other contribution to the research: Not to plagiarize; that is, to present portions of another’s report or data as our own, even if

the other work or data source is cited occasionally Cite clearly all sources of information and data that we use which are not the results of our own research Give proper acknowledgment and credit to resource/funding sources of our research Grant and limit authorship to those who made a significant contribution to the research endeavor.

Openness and responsibility in the conduct and presentation of research:

Be transparent in the use and disbursement of resources for our research. Ensure that our research results are accessible to the public once the research is concluded or as soon as possible. Respect the confidentiality of sources by not using or releasing data and information revealed to us in confidence

Extension of due regard and collegiality towards fellow researchers :

Render unto our peers, colleagues, students, and research participants the respect that they deserve. Provide assistance to other researchers, especially if we are uniquely qualified to do so by our expertise. Respect the confidentiality and proprietary rights of our peers, colleagues, and students whose material we review for publication, presentation, or funding by a grant.

Credit of others' contribution, resources, and materials utilized in research

Grant authorship in accordance with the significance of collaborators' contribution in the research. Appropriately attribute and credit to others their accomplishments and research results which we may have utilized in our own research. Acknowledge the material contribution of others in our research undertaking. Utilize, distribute, or share material resources and equipment in accordance with the conditions set by their source or benefactor.

32. Student profile programme-wise:

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
M.C.A.	458	12	23	95	90
M.Sc.		7	23	95	100
M.Phil.	20	1	5	-	-

33. Diversity of students

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
M.C.A.	80	17	3	0
M.Sc.	80	20	0	0
M.Phil.	17	66	17	0

34. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

UGC NET Lectureship : 10

35. Student progression

Student Progression	Percentage against enrolled
UG to PG	0
PG to M.Phil.	3
PG to Ph.D.	2
Ph.D. to Post-Doctoral	
Employed	
▪ Campus Selection	0
▪ Other than campus recruitment	80
Entrepreneurs	5

36. Diversity of staff

Percentage of faculty who are graduates of the same university	30
from other universities within the State	70
from universities from other States from universities outside the country	

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period : One

38. Present details of departmental infrastructural facilities with regard to

- a) Library

No of volumes : 3350

Number of journals/magazines : 12

Reading room facility.

Library Transactions Computerised

- b) Internet facilities for staff and students

10 mbps connection exclusively for the department with both wired and wireless access. Access is open to all students / researchers and faculty members.

- c) Total number of class rooms

PG class rooms : 5

M. Phil. class cum Lab : 1

Seminar hall : 1

- d) Class rooms with ICT facility : Four class rooms

- e) Students' laboratories : 3 software lab ( 100 systems) and 1 hardware lab.

- f) Research laboratories : two research labs (10 systems)

39. List of doctoral, post-doctoral students and Research Associates

- a) from the host institution/university

1. N.S. Sreekanth (Part Time)

2. K.P. Balachandran (Part Time)

3. Vimal Krishnan V.R. (Part Time)

4. Hemalatha N. (Part Time)
  5. Athulya Jayakumar (Full Time)
  6. Jayasree M ( Part Time)
  7. Geena K.P. (Full Time)
  8. Afra M.K. (Part Time)
  9. O. Jamsheela (FIP)
  10. Smitha C.K. (QIP)
  11. Sheena C.V (Speed IT Fellow)
  12. Anjali M.K. (Full Time)
  13. Ajusha P.V. (Full Time)
- b. rom other institutions/universities: Nil
40. Number of post graduate students getting financial assistance from the university. : Nil
  41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.: No
  42. Does the department obtain feedback from
    - a. Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback? : No
    - b. Students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?  
Yes. Feedback is given to the faculty concerned, which in turn are used for improving the teaching-learning process. General points raised by students such as curriculum, mode of assessment etc., the department council discuss the issues and take appropriate actions.
    - c. Alumni and employers on the programmes offered and how does the department utilize the feedback?  
Yes. Feedbacks are discussed in the council and are taken into consideration while designing new courses or modifying existing courses. This is especially true for practical courses and case studies, as they are modified quite often.
  43. List the distinguished alumni of the department (maximum 10)

No	Name	Batch	Organization	Poision
1	Sujith T.K.	MCA, 2005	CITI Bank, US	Team Lead
2	Rekha Sudi	MCA, 2005	Infosys, Trivandrum	Senior Engineer
3	Santhosh K.V.	MCA, 2006	Amdocs, Pune	Senior Engineer
4	Suneesh M.	MCA, 2006	Philips, Bangalore	Senior Engineer
5	Ragesh C.	MCA, 2007	TCS, Bangalore	Senior Engineer
6	Arunkrishna T.P.	MCA, 2007	iBizSoft Inc, US	Senior Engineer
7	Vinil Kumar	MSc, 2007	Fidelity, Bangalore	Senior Engineer



8	Vipin Kumar P.K.	MCA, 2008	Morgan McKinley, Kerala	Senior Engineer
9	Santhosh C.C.	MSc, 2008	Aditi Technologies, Bangalore	Senior Engineer
10	Rohith Mohan	MCA, 2009	FlipKart, Bangalore	UI Engineer

44. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.
- i. Topic: Career Building  
Resource Persons: Mr.Jaison, Mr.Dhanesh
  - ii. Topic: How to face an interview, Challenges in facing an interview  
Resource Persons: Mr.Vishnu, Mr.Vinod
  - iii. Topic: Mobile Technology  
Resource Person: Mr.Muraleedharan
  - iv. Topic: The Journey from Computer science To an IT Professional  
Resource Person: Arun Krishnan Nair
  - v. Topic: Mobile Radiations and Health Problems  
Resource Person: Dr.V P N Nampoore
  - vi. Topic: New and Emerging Careers in IT  
Resource Person: Dr.Mendus Jacob
  - vii. Topic : Neural Networks  
Resource Person : Dr. Lalitha Rangrajan
  - viii. Topic : Emerging trends in web programming  
Resource Person : Dr. Suresha
  - ix. Topic : Wireless Sensor Networks  
Resource Person : Dr. Manjayya D.
  - x. Topic : Emerging applications of Data Mining  
Resource Person : Dr. Doraiswamy
45. List the teaching methods adopted by the faculty for different programmes.  
Lecture- demonstration, lecture – discussion, case study based, Directed reading, Assignments which require high order thinking, Lecture supported with On-line lectures / tutorials.
46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?  
Performance of students in internal and external evaluation; student feedback, feedback from employers; assessment of student’s performance (oral and written) by external experts (from other Universities).
47. Highlight the participation of students and faculty in extension activities.
- i. More than 30% of the students are members of National Service scheme.
  - ii. Students take up projects such as computerizing local schools, vehicle service centre, movie house and works assigned by Kannur University administrative office.

- iii. Faculty extend service to the local colleges by delivering lectures on advanced topics.
  - iv. Faculty deliver lectures in training programmes organized for administrative staff.
  - v. Students organize cultural activities and celebrations in the campus.
  - vi. Faculty extend their service as selection board members in the recruitment of teachers in various institutions.
  - vii. Faculty participation in the “walk with scholar scheme”.
  - viii. An extension program intend to help farmers to explore the possibilities of IT in agriculture is being initiated, with financial support from UGC under GDA
48. Give details of “beyond syllabus scholarly activities” of the department.
- PG students are given exposure to contemporary research areas by organizing lectures.
  - PG students are given case studies which covers topics beyond the syllabus.
49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details. :No
50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.
- b. Developed new frame work for visual Cryptography.
  - c. Developed an efficient system using ELM for the recognition of isolated handwritten Malayalam characters.
  - d. Developed new feature extraction methods for HCR systems.
  - e. Developed new feature extraction methods as well as classification models for the recognition of continuous Malayalam speech.
  - f. Developed new feature extraction methods as well as classification models for the recognition of emotions from speech data.
  - g. Propose new approaches for speech data compression.
  - h. Developed new feature extraction methods for face recognition.
  - i. Developed three Fuzzy based approaches for image restoration / enhancement.
  - j. Proposed new models for mammogram segmentation as well as enhancement.
51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.
- Strengths:
- 1. Infrastructure – building and furniture.
  - 2. Library with books for research, expensive reference books and text books.
  - 3. Senior faculty members with considerable research contributions.
  - 4. Academic autonomy – The department council is empowered to design curriculum, evaluation is carried out by faculty who offer the course, flexibility in designing new courses etc.
  - 5. Alumnae – Support in terms of feedback give on courses, in sharing experience with the students, helping in completing in house projects, assist the students in placement through timely notification, giving career advices to students and recommendations to employers.

Weaknesses:

1. Shortage of qualified and regular faculty.
2. Shortage of technical / support staff like system administrator, hardware engineer, lab instructors etc.
3. Research labs : Need high performance systems to meet the computational requirements of the researchers.
4. Lack of collaboration with industry as well as R&D organizations.
5. Placement cell and placement related activities need drastic improvement.

Opportunities:

1. Predicted demand for highly competitive software professionals.
2. Demand in industry / R&D organizations for scholars who can independently carry out research work in frontier areas in computer science like Image processing, data mining, big data analytics and machine learning.
3. Need for design of new courses in the PG level.
4. Lack of number of government aided computer PG programmes in north Kerala.
5. Predicted demand for interdisciplinary and inter-departmental elective courses based on IT.

Challenges

1. Poor quality of input to PG programmes, especially M Sc Comp Sc.
2. To raise the level of research activities so as to make the department a centre of excellence in the areas of signal and Image processing.
3. To train the students in IT and soft skills so as to make them more employable.
4. Lack of fund to set up high end labs.

52. Future plans of the department.

- i. To design and offer bridge courses to graduates, preparing them for PG courses in computer science.
- ii. To set up a centre for software development - to provide facility for doing projects to the students of the department as well as neighbouring institutes.
- iii. To setup R&D centre – to provide facility for doing projects/ dissertations etc. To the PG students of the department as well as M.Tech. / M.Phil. / M.C.A. /M.Sc. students of other institutions.
- iv. To set up a centre for advanced research in big data analytics with assistance from national funding agencies like DST.
- v. To conduct more number of workshops and national and international conferences.
- vi. To acquire eligibility for UGC SAP / DST FIST.
- vii. Strengthen infrastructure and R&D activities in the area of Signal and Image Processing.
- viii. To set up a centre for advanced research in Natural Language Processing.
- ix. To start M.Sc. program with specialization in Image processing / Natural Language Processing / Signal processing / data mining.
- x. To start M.Tech. program in Computer science with specialization in Image processing / Natural Language Processing / Signal processing / data mining.

- xi. To start part-time PG / M.Phil. programmes.
- xii. To organize special soft skill development programmes to final year students.
- xiii. To revamp the functioning of placement cell.
- xiv. To offer certification programmes for students of the department.
- xv. Better utilization of online learning materials and LMS.
- xvi. To bring in more resources through funded projects.
- xvii. Strict adherence to academic schedules and timely publication of results.