

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
COLLEGE OF ENGINEERING, GUINDY
ANNA UNIVERSITY, CHENNAI – 600 025**

Minutes of the Nineteenth Departmental Consultative Committee meeting of the Department of Electronics and Communication Engineering held on 31.10.2017 at 3.00 p.m. in the Conference Hall, Department of Electronics and Communication Engineering.

The Nineteenth Departmental Consultative Committee meeting of Department of Electronics and Communication Engineering was held on 31.10.2017 at 3.00 P.M. in the Conference Hall, Department of ECE. Dr.S.Muttan, Head, ECE Department and Convenor of Departmental consultative Committee started the meeting with a welcome note.

The following members were present during the meeting and offered suggestions for the further growth of the Department.

1. Dr.S.Muttan	Convenor of DCC
2. Dr.P.V.Ramakrishna	Member
3. Dr.Y.V.Ramana Rao	Member
4. Dr.S.Shenbagadevi	Member
5. Dr.M.Meenakshi	Member
6. Dr.M.A.Bhagyaveni	Member
7. Dr.V.Jeyalakshmi	Member
8. Dr.P.Sakthivel	Member
9. Dr.M.Sasikala	Member
10. Dr.O.Umamaheswari	Member
11. Dr.M.Kannan (MIT)	Member
12. Dr.K.Latha (DEEE)	Member

SECTION – 1

Item No.19.01.01 Confirmation of the minutes of the 18th meeting of the DCC

Minutes of the Eighteenth Departmental Consultative Committee meeting was confirmed by the members.

SECTION – 2

Item No.19.02.01 Report on the follow up action taken on the minutes of the 18th meeting of the DCC

Follow up action taken on the minutes of the 18th meeting of the DCC was presented to the members by the Convenor and the members expressed their satisfaction over the action taken.

SECTION – 3 Information to members

Item No. 19.03.01 Recruitment of Faculty / Teaching Fellow

The Convenor informed the members about the recruitment of three teaching fellows namely Mr.G Karthik, Ms.K. Ragini and Mrs.P.S. Karthika and also informed the members that The following Teaching Fellows have left the department.

1. Mr. S.Bagyaraj
2. Mr. D.Vaidiyanathan
3. Mr. T.S.Karthik
4. Mrs. S.Saranya
5. Mrs. N.SudhaPriyadarshini
6. Mrs. R.Parameshwari
7. Mrs. V.Vijayalakshmi
8. Mrs. Priti Rishi
9. Mrs. Jenifer Anies.

Item No.19.03.02 Department Achievements

The Convenor of the DCC presented the following on-going projects in the Department and also progress of the projects.

(i) On-going Projects :

Sl. No.	Title of the project	Name of Principal Investigator	Name of the Funding Agency	Amount of grant received (Rs. in Lakhs)	Duration (From – To)
1.	Mass Screening Gadget for Ophthalmic Lesions	Dr.S.Shenbaga Devi	DST, Govt. of India	20.0	2011-2016
2.	Hystero Electrical Activity Mapping Device	Dr.S.Shenbaga Devi	DST, Govt. of India	20.0	2011-2016
3.	Development of Tactile Sensor based ligature controller to assess pancreatic leak after Whipple's procedure	Dr. S.Poonguzhali	DST, Govt. of India	29.60	2013-2016
4.	Automated Low Cost system for malaria Diagnosis and Classification	Dr.N.Kumaravel, Dr.S.Muttan	UKIERI Project with University of Westminster, UK, funded by British Council	£19960	2012-2016
5.	Evaluation of Functional Electrical simulation in hemiplegics for functional restoration of upper limb using EEG based Brain Computer Interface.	Dr.S.Shenbaga Devi	LSRD – DRDO Project	11.00	2014-2016
6.	Wireless Body Area Networks for Telemedical Applications	Dr. S. Muttan Dr. M.Meenakshi	UGC	60.00	2012- 2016
7.	CARS Project entitled "Design of Spread Spectrum Transceiver using AD 9361 Platform"	Dr.P.V.Ramakrishna	DRO/RCI	9.50	

8.	Design and Development of Intelligent Automated System for Respiratory Measurements	Dr.C.M.Sujatha	DST-SERB	8.64	2012-2016
9.	An Improved resource utilization approach with normalized rate based scheduler for multiuser MIMO system	Dr.M.A.Bhagyaveni	DST-SERB	8.64	2012-2016
11.	Development of hardware system for Beam forming and Beam steering for Non Destructive Testing Applications	Dr.P.V.Ramakrishna	Lucid software Ltd	3,10,000	2014-2015
12.	Development of Low cost sweep VEP system	Dr.S.Shenbaga Devi	DST, Govt. of India	44.00	2012-2016
13.	Design and Development of Bio potential Singal Analysis system for control of Mobility Assistive Device	Dr.M.Sasikala	LSRB, Govt. of India	30.00	2012-2016
14.	Establishing a facility for Calibration and Testing of Critical care Medical Equipment	Dr. S.Poonguzhali		98.00	2012-2016
15.	Feasibility Study on Mobile Electric Hybrid Power System (MEPHS)	Dr. J. Kamala		17.00	2012-2016
16.	University with Potential for Excellence in Biomedical Engineering and Instrumentation	Dr. S. Muthan		2311.80	2012-2016

The Committee congratulated the following faculty members those who have completed Ph.D.Degree.

(ii) Ph.D Degree awarded to faculty members :

Sl. No.	Title of the thesis	Name of the scholar	Name of the supervisor	Month & year of viva-voce conducted
1.				
2.				
3.				
4.				
5.				

The Committee also congratulated the following Research Scholars those who have completed Ph.D.Degree.

(iii) Ph.D Degree completed by Research Scholars :

Sl. No.	Title	Name of Scholar	Name of Guide	Year of completion
1				
2				
3				
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(iv) **Awards and membership of important bodies :**

The Convenor of the DCC congratulated Dr.M.Meenakshi for membership in Curriculum Advisory Committee for SSN Engineering College and SRM University and also for Interview Committee Member for SAMEER Centre for Electromagnetics and Sai Ram Engineering College.

The Convenor of the DCC congratulated Dr.M.A.Bhagyaveni for being the academic council member for NEC kovilpatti, Board of studies member for GCT, Coimbatore and also for Interview Committee Member for CDAC, Chennai, Easwari Engineering college and SRM Engineering College Kattankulathur.

The Convenor also congratulated for Dr.P.Sakthivel who have been elected as the Treasure, IEEE Madras Section, Treasurer, IEEE Information Theory Society Madras Chapter and Honorary Secretary, IEEE Computer Society Madras Chapter for the year 2016.

(v) **Foreign visits**

The Convenor informed the members about the foreign visits undertaken by the faculty members for attending International Conference and for paper presentation. While congratulating the faculty members for their visit to Foreign countries, the Convenor also requested them to submit a participation report in connection with their visit.

Sl. No.	Faculty Name and Designation	Name of Country visited	Duration	Purpose / Programme
1.				
2.				
3.				
5.				

(vi) Invited lectures delivered by staff members:

The Convenor appreciated the invited lectures delivered by the following staff members in various Workshops / Short term courses.

Sl. No.	Name of the Faculty members and Designation	Department of Faculty members	Address of Organized Institute	Month & Year	Name of the programme
1	DR.R.SEETHARAMAN (ASST.PROF)	ECE	IT DEPT/MIT CAMPUS	02.12.2016	FDP ON MOBILE COMPUTING
2	DR.M.MEENAKSHI (PROF)	ECE	PONDICHERY ENGINEERING COLLEGE	10-NOV-2016	“ON RECENT TRENDS AND DEVELOPMENTS IN BROADBAND TECHNOLOGIES”
3	DR.M.A.BHAGYAVENI (PROF)	ECE	DEPT. OF ELECTRONICS ENGINEERING, MIT, CHROMPET	02-DEC-2016	DELIVERED A LECTURE ON “PRESENTATION LAYER AND NETWORK SECURITY”

4	DR.M.A.BHAGYAVE NI (PROF)	ECE	SCHOOL OF COMPUTING SCIENCES, HINDUSTAN UNIVERSITY	28-FEB 2017	DELIVERED A LECTURE ON "CONTEXT INTERFERENCE & COGNITIVE AWARENESS" IN DRDO SPONSORED NATIONAL CONFERENCE ON INTELLIGENT INFORMATION SYSTEMS
5	DR.M.SASIKALA (ASSO.PROF)	ECE	VELAMMAL ENGINEERING COLLEGE	01-SEP- 2016	DELIVERED A LECTURE ON "WAVELET TRANSFORMS AND SUB BAND CODING"
6	DR.M.SASIKALA (ASSO.PROF)	ECE	COLLEGE OF ENGINEERING, ANNA UNIVERSITY	06-OCT- 2016	BREAST CANCER DETECTION FROM THERMAL IR IMAGES" IN WORKSHOP ON RECENT TRENDS IN MEDICAL IMAGE PROCESSING TECHNIQUES AND ITS APPLICATIONS
7	DR.GUNASEELAN (ASST.PROF)	ECE	DEPARTMENT OF ECE, CEG, ANNA UNIVERSITY, CHENNAI.	10-AUG- 2016	"CAPACITY OF MIMO SYSTEM WITH FADING AND NON FADING CHANNELS."
8	DR.GUNASEELAN (ASST.PROF)	ECE	ORGANIZED BY ALL INDIA INSTITUTE OF MEDICAL SCIENCES (AIIMS) , NEW DELHI	27-MAR- 2017	DELIVERED A LECTURE ON "RFID BASED INFANT THEFT PREVENTION SYSTEM AND INDIGENOUS MEDICAL DEVICES DEVELOPED UNDER NHHID"

					IN WORKSHOP ON LAST MILE CONNECTIVITY FOR INDIGENOUS MEDICAL DEVICES DEVELOPED UNDER DST-HANDS ON WORK
9	DR.M. MEENAKSHI (PROF)	DECE	SSN ENGINEERING COLLEGE	11.01.2017	IEEE STUDENT CHAPTER LECTURE ON 5G WIRELESS COMMUNICATION
10	DR.M. MEENAKSHI (PROF)	DECE	SSN ENGINEERING COLLEGE	15-03-2017	4G FEATURES AND CHALLENGES – APPLICATIONS OF 4G – 4G TECHNOLOGIES & SMART ANTENNA TECHNIQUES
11	DR.M. MEENAKSHI (PROF)	DECE	RAJALAKSHMI ENGINEERING COLLEGE	29.5.2017	FDP ON OPTICAL COMMUNICATION AND NETWORKS
12	DR.M. MEENAKSHI (PROF)	DECE	SAIRAM ENGINEERING COLLEGE	2.6.2017	FDP ON OPTICAL COMMUNICATION AND NETWORKS

(vii) **Activities organised / proposed**

The Convenor informed the Committee about the following Workshops which are all conducted in the department. He congratulated the Co-ordinators for utilizing the department funds.

Conferences / Seminars / Symposia / Workshops already conducted by the Department :

Sl. No.	Title of the Programme	Date	No. of Participants	Name of the Co-ordinator	Sponsoring Agency
1	GIAN COURSE ON MIMO WIRELESS	08-AUG-2016 TO 12- AUG-2016	50	DR.M.MEENAKSHI	
2	SOFTWARE SAFETY AND SECURITY OF MEDICAL DEVICES.	30-SEP-2016	60	DR.S.SHENBAGADE VI	LDRA ACADEMIC ALLIANCE PROGRAM
3	RECENT TRENDS IN MEDICAL IMAGE PROCESSING TECHNIQUES ANS ITS APPLICATIONS.	06-OCT-2016 AND 07-OCT-2016	70	DR.S.SHENBAGADE VI	CENTRE FOR MEDICAL ELECTRONICS
4	NATIONAL LEVEL WORKSHOP ON "FACULTY DEVELOPMENT TRAINING PROGRAM ON CU6003 ADHOC AND SENSOR NETWORK" FROM 28-NOV-2016 TO 04-DEC-2016.	28-NOV-2016 TO 04-DEC-2016.	60	DR. D.SRIDHARAN	
5	NATIONAL LEVEL WORKSHOP ON "COMMUNICATION NETWORKS"	06-JAN-2017 TO 07-JAN-2017.	50	DR.M.A.BHAGYAVENI	
6	TWO DAYS WORKSHOP ON FIELD PROGRAMMABLE ANALOG ARRAY	10.03.17 & 11.03.17	50	DR. J KAMALA DR. C M SUJATHA	ECE DEPARTMENT FUND
7	TWO DAYS WORKSHOP ON BRAIN COMPUTER INTERFACE(BCI)AND APPLICATIONS	21.09.2017 TO 22.09.2017	40	DR.S.SHENBAGADE VI	CENTRE FOR MEDICAL ELECTRONICS

Item No.19.03.03 Activities Organized / Proposed

The Convenor informed the members about the following activities in the department subsequent to the previous meeting and the activities proposed to organize in the department.

1. Guest Lecture is arranged to ECE students by Dr.N.Ramanathan, Scientist, DRDO (Retd.) on 24.02.2015.
2. Guest Lecture on “Higher Studies in Poland” delivered by Prof. Marcin on 29.01.2016. Prof.Marcin along with his team visited the department.
3. Short term Training Programme on “Prototyping Tools and Testbed Creation for 5G Wireless Communication” is planned to be conducted during 2-6, March 2016 by Dr.M.meenakshi, Professor, ECE.
4. VISION’16 an Inter-college Technical Symposium is proposed to be held on March 19-20, March 2016.

Item No.19.03.04 Conferences/seminar/symposium/workshops attended by the faculty members

Sl. No.	Name of the Faculty Member and Designation	Date	Name of the Continuing Education Programme/Training programme attended	Venue
1	DR.R SEETHARAMAN (ASS.PROF)	03-08-16	ROUTLEDGE EDITORIAL WORKSHOP	CEG
2	DR.M.MEENAKSHI (PROF)	06-JUL-2016 TO 06-JUL-2016.	PARTICIPATED IN A INTERNATIONAL LEVEL WORKSHOP ON “IEEE EMC SOCIETY LECTURE ON “DEMYSTIFYING SIGNAL INTEGRITY IN HIGH SPEED INTERCONNECTS “	SAMEER, INDIA
3	DR.M.A.BHAGYAVENI (PROF)	03-AUG-2016.	PARTICIPATED IN A NATIONAL LEVEL WORKSHOP ON “RUTLEDGE EDITORIAL WORKSHOP 2016”	TAYLOR & FRANCIS AT ANNA UNIVERSITY,
4	DR.M.A.BHAGYAVENI (PROF)	01-SEP-2016 TO 10-SEP-2016	ATTENDED A INTERNATIONAL LEVEL SHORT COURSE ON “COGNITIVE RADIO AND WIRELESS COMMUNICATION, THEORY AND PRACTICE”	IIT 11KANPUR, INDIA

5	DR.S.EWINS PON PUSHPA (ASST.PROF)	21-SEP- 2016 TO 23-SEP- 2016	ATTENDED A NATIONAL LEVEL SHORT COURSE ON “STUDENT EVALUATION AND QUESTION PAPER SETTING”	ANNA UNIVERSIT Y, INDIA
6	DR.S.EWINS PON PUSHPA (ASST.PROF)	21-SEP- 2016 TO 23-SEP- 2016.	ATTENDED A NATIONAL LEVEL SHORT COURSE ON “STUDENT EVALUATION AND QUESTION PAPER SETTING”	COLLEGE OF ENGINEERI NG, GUINDY, INDIA
7	DR.S.EWINS PON PUSHPA (ASST.PROF)	28-NOV- 2016 TO 04-DEC- 2016	ATTENDED A NATIONAL LEVEL SHORT COURSE ON “ADHOC AND SENSOR NETWORKS”	COLLEGE OF ENGINEERI NG, GUINDY, INDIA
8	DR. C. M. SUJATHA	14.04.17 - 16.04.17	MEDIMG: WORKSHOP ON MEDICAL IMAGING TECHNIQUES, POST PROCESSING AND CLINICAL APPLICATIONS	IIT DELHI
9	DR. C. M. SUJATHA	06.04.17	AN OVERVIEW OF MEDICAL DEVICE REGULATIONS	IIT MADRAS
10	DR.V.JEYALAKSHMI	10.07.17- 14.07.17	ADVANCED DSP DESIGN TECHNIQUES	IIT KHARAGPU R
11	DR.V.JEYALAKSHMI	06.01.17- 12.01.17	GIAN COURSE ON LOW DIMENSIONAL STRUCTURES AND DEVICES FROM RESEARCH TO INDUSTRY	DEPT OF CRYSTEL GROWTH,C OLLEGE OF ENGG GUINDY

Item No.19.03.05 Research Papers Presented in the National Conferences:

Sl. No.	Name of the Conference & Title of the Papers	Author's Name	Name and Addresses of Venue	Month & Year
1	ANALYSIS OF BREAST THERMOGRAM USING ADAPTIVE LIFTING WAVELET TRANSFORM AND GLRL TEXTURE FEATURES	DR. C.M. SUJATHA	54 TH ANNUAL ROCKY MOUNTAIN BIOENGINEERING SYMPOSIUM, DENVER, COLORADO,	APRIL 21-23, 2017.
2	ANALYSIS ON THE MORPHOLOGICAL VARIATION OF	DR. C.M. SUJATHA	54 TH ANNUAL ROCKY MOUNTAIN	APRIL 21-23, 2017.

	BRAINSTEM IN ALZHEIMER MR IMAGES USING INVERSE PERONA MALIK DIFFUSION FILTER AND LEVEL SET METHOD		BIOENGINEERING SYMPOSIUM, DENVER, COLORADO,	
3	IEEE INDIAN ANTENNA WEEK CONFERENCE 2017 MODIFIED PRINTED OCTAGONAL MONOPOLE JWB ANTENNA FOR WBAN APPLICATIONS	DR.M.MEENAKS HI	DEFENCE INSTITUTE OF ADVANCED TECHNOLOGY, PUNE	JUNE, 2017

Item No.19.03.05 Research Papers Presented in the International Conferences:

Sl. No.	Name of the Conference & Title of the Papers	Author's Name	Name and Addresses of Venue	Month & Year
1	"ENERGY –AWARE MAC FOR CRWSN" PRESENTED IN AN INTERNATIONAL LEVEL CONFERENCE ON INTERNATIONAL CONFERENCE ON WIRELESS SMART SYSTEM TECHNOLOGIES (WISST'17).	ANN JENIFER, MANGAI, M.A.BHAGAYVENI,	NATIONAL ENGINEERING COLLEGE, KOVILPATTI.	JAN 2017
2	"PERFORMANCE EVALUATION OF IDMA UFMC MODULATION SCHEME FOR 5G NETWORKS" PRESENTED IN A INTERNATIONAL LEVEL CONFERENCE ON INTERNATIONAL CONFERENCE ON WIRELESS SMART SYSTEM TECHNOLOGIES (WISST'17),	M.A.BHAGAYVENI	NATIONAL ENGINEERING COLLEGE, KOVILPATTI.	JAN 2017
3	"REVIEW ON VARIOUS UNDERWATER QUALITY DEGRADATION FACTORS AND METHODS TO OVERCOME DEGRADATION" PRESENTED IN A	BINDHU A, O.UMA MAHESWARI,	SN EDUCATION SOCIETY OF INDIA.	27-JAN-2017 TO 28-JAN-2017

	INTERNATIONAL LEVEL CONFERENCE ON 2 ND INTERNATIONAL CONFERENCE ON SUSTAINABLE COMPUTING TECHNIQUES IN ENGINEERING SCIENCES.			
4	“UNDERWATER IMAGE ENHANCEMENT BASED ON LINEAR IMAGE INTERPOLATION AND LIMITED IMAGE ENHANCER TECHNIQUES” PRESENTED IN A INTERNATIONAL LEVEL CONFERENCE ON 4 TH INTERNATIONAL CONFERENCE ON SIGNAL PROCESSING, COMMUNICATIONS AND NETWORKING,	BINDHU A, O UMA MAHESWARI	MIT CAMPUS ANNA UNIVERSITY, INDIA	16-MAR-2017 TO 18-MAR-2017
5	“A NEW DENOISING ALGORITHM FOR RANDOM VALUED IMPULSE NOISE IN IMAGES USING MEASURES OF DISPERSION” PRESENTED IN AN INTERNATIONAL LEVEL CONFERENCE ON 4 TH INTERNATIONAL CONFERENCE ON SIGNAL PROCESSING, COMMUNICATIONS AND NETWORKING.	NEETI SINGH, O. UMA MAHESWARI	ORGANISED BY MIT CAMPUS ANNA UNIVERSITY, INDIA	16-MAR-2017 TO 18-MAR-2017

Item No.19.03.05 Books published:

Sl. No.	Name of the Book / Title	Author's Name	Name of the Publisher	Month & Year
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1	POWER ANALYSIS OF SENSOR NODE USING SIMULATION TOOL	R.SITTALATCHOMY, R KANTHAVEL AND R SEETHARAMAN	SCIRP CIRCUITS AND SYSTEMS, VOL.7, NO.13, PP.4236-4247	NOV&2016
2	COGNITIVE RADIO – AN ENABLER FOR INTERNET OF THINGS	S.SHANMUGAVEL, M.A.BHAGYAVENI R.KALIDOSS	RIVER PUBLICATIONS	2017

Item No.19.03.05 Journals published:

Sl. No.	Name of the Title	Author's Name	Name of the Publisher	Month Year
1	“TUNABLE LOW POWER UWB TRANSMITTER FOR WBAN APPLICATION”.	VINODKUMAR V, MEENAKSHI M	JOURNAL OF CIRCUITS, SYSTEMS, AND COMPUTERS.	2016
2	“LYAPUNOV OPTIMIZATION BASED CROSS LAYER APPROACH FOR GREEN CELLULAR NETWORK”.	SENTHILKUMAR L, M. MEENAKSHI, AND VASANTHA KUMAR	JOURNAL OF GREEN ENGINEERING, VOL. 5, ISSUE 2	2016
3	“IMPROVED FIBER NONLINEARITY MITIGATION IN DISPERSION MANAGED OPTICAL OFDM LINKS “, OPTICS COMMUNICATIONS.	ILAVARASAN, MEENAKSHI.M	ELSEVIER PUBLICATIONS.	2016
4	“AN INTELLIGENT FUZZY BASED ENERGY DETECTION APPROACH FOR COOPERATIVE SPECTRUM SENSING”.	MEENAKSHI.M	CIRCUITS AND SYSTEMS.	2016
5	“FOETAL ECG EXTRACTION USING BPN AND UWT”, INTERNATIONAL JOURNAL OF BIOMEDICAL ENGINEERING AND TECHNOLOGY,	R.PARAMESHWARI,C.EMLYN GLORIA,S.SHENBAGA DEVI	IJBET. VOL. 22, PP. 1-13	2016

6	“CRITICAL DATA DELIVERY USING TOPSIS IN WIRELESS BODY AREA NETWORKS”	SRIDHARAN.D	CIRCUITS AND SYSTEMS, VOL. 7, PP. 622-629	2016
7	“ENERGY AND DELAY AWARE DATA LINK LAYER PROTOCOLS FOR WIRELESS BODY AREA NETWORK”,	M. AMBIGAVATHI AND D. SRIDHARAN,	INTERNATIONAL JOURNAL OF RESEARCH IN IT AND MANAGEMENT (IJRIM), VOL. 6, ISSUE 7, PP. 184-199	2016
8	“IDENTIFICATION OF SCHIZOPHRENIA USING EEG ALPHA BAND POWER DURING HYPERVENTILATION AND POST-HYPERVENTILATION””, JOURNAL OF MEDICAL AND BIOLOGICAL ENGINEERING	THILAKAVATHI BOSE, SHENBAGA DEVI SIVAKUMAR, BHANU KESAVAMURTHY	SPRINGER. VOL. 36, ISSUE 6, PP. 901 TO 911	2016
9	“DESIGN AND DEVELOPMENT OF LIGATURE FORCE MEASUREMENT SYSTEM FOR WHIPPLES SURGERY”, BIOTECHNOLOGY AND BIOMEDICAL SCIENCES	S.POONGUZHALI, P.RAVICHANDRAN, M.SASIKALA , ASHWIN K WHITCHURCH, A.RAJAN,	VOL. 2, ISSUE 1, PP. 48-50	2016
10	“INVESTIGATION OF DIFFERENT APPROACHES FOR NOISE REDUCTION IN FUNCTIONAL NEAR-INFRARED SPECTROSCOPY SIGNALS FOR BRAIN-COMPUTER INTERFACE APPLICATIONS”, JOURNAL OF NEURAL COMPUTING AND APPLICATIONS.	A.JANANI AND M.SASIKALA	PUBLISHED BY SPRINGER	2017
11	“DESIGN AND DEVELOPMENT OF LIGATURE FORCE MEASUREMENT	S.POONGUZHALI, P.RAVICHANDRAN, M.SASIKALA , ASHWIN K WHITCHURCH, A.RAJAN	VOL. 2, ISSUE 1, PP. 48-50	2016

	SYSTEM FOR WHIPPLES SURGERY”, BIOTECHNOLOGY AND BIOMEDICAL SCIENCES			
12	“A COMPACT UWB ANTENNA FOR IEEE802.11A STANDARD COMMUNICATION SYSTEM”, INTERNATIONAL JOURNAL OF CONTROL THEORY AND APPLICATIONS.	VANAJA SELVARAJ, POONGUZHALI SRINIVASAN, RAHUL KRISHNAN.	VOL. 9, ISSUE 5, PP. 2363-2368	2016
13	“FILTERING BASED FEATURE EXTRACTION TO CLASSIFY THE BENIGN AND MALIGNANT LESIONS FROM BREAST ULTRASOUND IMAGES”, JOURNAL OF MEDICAL IMAGING AND HEALTH INFORMATICS.	TELAGARAPU PRABHAKAR, S POONGUZHALI	AMERICAN SCIENTIFIC PUBLISHERS. VOL. 6, ISSUE 6, PP. 1469-1474	2016
14	“POWER CLUSTER: AN EFFICIENT CLUSTERING MAC PROTOCOL FOR RF RECHARGEABLE WIRELESS SENSOR NETWORK”,)	R.SITTALATCHOUMY, R. KANTHAVEL & R. SEETHARAMAN	AUSTRALIAN JOURNAL OF BASIC AND APPLIED SCIENCES, PP. 619-624	2016
15	“EFFICIENT RANKING OF DIABETIC RETINOPATHY AND GLAUCOMA USING ECHO STATE NEURAL NETWORK AND RADIAL BASIS FUNCTION (RBF)”, JOURNAL OF MEDICAL IMAGING AND HEALTH INFORMATICS,	M. TAMIL NIDHI & K GUNASEELAN.	AMERICAN SCIENTIFIC PUBLISHERS. VOL. 6, ISSUE 3, PP. 869-874	2016
16	“SENSORS FOR DETECTING AMMONIA FROM THE EXHALED	T.JAYASREE, M.BOBBI,S.MUTTAN	AMERICAN SCIENTIFIC PUBLISHER. VOL.	2016

	. BREATH OF RENAL DISORDER PATIENTS”, SENSOR LETTERS.		14, ISSUE 10, PP. 1003-1008	
17	“RECONFIGURABLE SMART CONTROLLER AND INTERFACE ARCHITECTURE FOR PHOTO-VOLTAIC ENERGY STORAGE SYSTEM”, COMPUTER STANDARDS AND INTERFACES.	KAMALA J AND UMAMAHESWARI B	ELSEVIER. VOL. 46, PP. 37-45	2016
18	"LAPLACE BELTRAMI EIGEN VALUE BASED CLASSIFICATION OF NORMAL AND ALZHEIMER MR IMAGES USING PARAMETRIC AND NON-PARAMETRIC CLASSIFIERS",	K. R. ANANDH, C. M. SUJATHA, S. RAMAKRISHNAN	EXPERT SYSTEMS WITH APPLICATIONS, PP. 208-216	2016
19	“JITTER REDUCED SELF BIASED PLLS—A SYSTEMATIC SIMULATION STUDY”, CIRCUITS AND SYSTEMS,	J.DHURGA DEVI	SCIENTIFIC RESEARCH. VOL. 7, ISSUE 6, PP. 533-542	2016
20	IMPAIRMENT ASSESSMENT OF ORTHOGONAL FREQUENCY DIVISION MULTIPLEXING OVER DISPERSION MANAGED LINKS IN BACKBONE AND BACKHAUL NETWORKS	ILAVARASAN TAMILARASAN, BRINDHA SAMINATHAN & MEENAKSHI MURUGAPPAN	OPTICAL ENGINEERING, SPIE PUBLICATIONS,	VOL.55 NO.4, 2016
21	IMPROVED FIBER NONLINEARITY MITIGATION IN	ILAVARASAN TAMILARASAN, BRINDHA SAMINATHAN &	OPTICS COMMUNICATIONS, ELSEVIER	VOL.38 2017

	DISPERSION MANAGED OPTICAL OFDM LINKS	MEENAKSHI MURUGAPPAN	PUBLICATIONS	
22	ENERGY AND ELECTROMAGNETIC POLLUTION CONSIDERATIONS IN AROF-BASED MULTI- OPERATOR MULTI- SERVICE SYSTEMS	BRINDHA SAMINATHAN, ILAVARASAN TAMILARASAN, & MEENAKSHI MURUGAPPAN	PHOTONIC NETWORK COMMUNICATIONS, SPRINGER PUBLICATIONS	JANUAR 2017

Item No.19.03.06 Budget and List of equipments purchased

The budget allocation amount spent by the Department of ECE for the period 2016-17 are presented by the Convenor. The list of equipments and softwares purchased and the items to be purchased under various funding agencies are also presented by the Convenor.

Expenditure Statement 2017-18

4.2.37	Department of Electronics and Communication	BE 2017- 18 (sanctioned)	Exp including Committed till 30 Oct 2017	RE 2017-18 (Proposed)	BE 2018-19 (Proposed)
i.	Travel Expenses	1,00,000/-	0	1,00,000/-	1,00,000/-
ii.	Office Expenses /	2,75,000/-	1,03,199/-	2,75,000/-	2,75,000/-
iii.	Printing and Stationery	1,00,000/-	38,000	1,00,000/-	1,00,000/-
iv.	Books / Journals /	75,000/-	0	75,000/-	75,000/-
v.	Furniture	1,20,000/-	0	1,20,000/-	1,20,000/-
vi.	Computer Purchase	1,000/-	0	1,000/-	1,000/-
vii.	Equipment Purchase	1,000/-	0	1,000/-	1,000/-
viii.	Teaching Aids	1,20,000/-	45,000/-	1,20,000/-	1,20,000/-
ix.	Lab Consumables	1,00,000/-	94,765/-	3,00,000/-	3,00,000/-
x.	Conduct of Seminars	3,00,000/-	0	3,00,000/-	3,00,000/-
xi.	Computer / Equipment including Generator Maint./ Consumables /	10,00,000/-	7,94,028/-	10,00,000/-	10,00,000/-
xii.	Lab charges	2,75,000/-	2,62,506/-	5,75,000/-	5,75,000/-
xiii.	Non Gate Contingencies	1,00,000/-	7,426/-	1,00,000/-	1,00,000/-
xv.	Educational Media &	15,000/-	0	15,000/-	15,000/-
xvi.	Department Consultative	8,000/-	0	8,000/-	8,000/-
xviii.	Visiting Faculty	1,00,000/-	3,000/-	1,00,000/-	1,00,000/-
xix.	Travel Grant	3,00,000/-	50,321/-	3,00,000/-	3,00,000/-
xx.	Membership fee	1,00,000/-	0	1,00,000/-	1,00,000/-
xxi	Research Scholar Expenses	10,000/-	2,581/-	10,000/-	10,000/-
TOTAL		31,00,000/-		36,00,000/-	36,00,000/-

9.43	ECE Consortium	BE 2017- 18 (sanctioned)		RE 2017-18 (Proposed)	BE 2018-19 (Proposed)
i.	Civil/ Electrical Works	50,00,000/-	7,35000/-	55,00,000/-	70,00,000/-
ii.	Computer with accessories	25,00,000/-	24,45,000/-	25,00,000/-	25,00,000/-
iii.	Laboratory Machinery and Equipments	40,00,000/-	22,36,593/-	65,00,000/-	65,00,000/-

iv.	Office Equipments	5,00,000/-	0	5,00,000/-	5,00,000/-
v.	Laboratory / Class room	5,00,000/-	0	5,00,000/-	5,00,000/-
vi.	Office Furniture	2,00,000/-	0	2,00,000/-	2,00,000/-
vii.	Software	20,00,000/-	10,00,000/-	40,00,000/-	30,00,000/-
TOTAL		147,00,000/-		197,00,000/-	202,00,000/-

**Upscaling of Post Graduate Research Centre with Hi-Tech Laboratories in the
Department of ECE
Anna University, Chennai-25**

I. A Brief Status Report

The Department of ECE is one of the major Department of Anna University, currently offering UG courses, five full time PG courses and two part time PG courses. As per the directions of the Tamil Nadu Government, in the **G.O.Ms.No.80 Higher Education (H2) Department, Dated 28.05.2012, Rs. 2.5 Crores** has been allocated by the University for the Upscaling of Post Graduate research Centre with Hi-Tech Laboratories in the Department of Electronics and Communication Engineering.

- In the new Building named “JC Bose Block” constructed in the Department of ECE, the third floor (1650 sq feet/ 153 sqm) was developed with dedicated Hi-tech Laboratory for research with modular furniture and a mini conference hall . The laboratory is under utilization from 2014-15.
- Major Equipments and furniture costing around Rs. 85 lakhs have been purchased from the funds allocated under budget head “Equipment and Furniture”. These equipments and software are currently being utilized by more than 250 research scholars and PG students of ECE Department. Equipments and software worth Rs.35 lakhs are under process in this current financial year 2017-18.
- A five days training programme has been successfully conducted by the ECE Department during March 2016 with the facilities created in the Research Lab, for the benefit of Research scholars and PG students working on various aspects of ‘5G Wireless Communication’ and covering the areas of upcoming communication technologies over heterogeneous environments to the advanced test bed creation and prototyping tools. More than 50 Research scholars and PG students attended the programme. The Department has planned to conduct workshop / conference/ Seminars in the current year also utilizing the facilities of the Research Centre.
- The reference library with 68 books has been created with 2.5 lakhs. Also five computer with internet access and a printer facility was created with 2.5 lakhs in the PG Research Centre are utilized by staffs and Research scholars and PG students.

- Two JRF are currently doing research and working for the development of research activities in PG Centre

PGRC – II. OVERALL STATUS (as on 31.03.2017)

Sub-Head	Amount (Rs.)	Current Status
Recurring : (i) Man Power	Total Sanction : 15 Lakhs Total Exp: 2,23,166/- Balance: 12,76,834/-	Rs.3,90,000/- has been spent – up to Oct 2017.
Non Recurring : (i) Building for the PG Research centre, Digital Library, Seminar Hall, Rest Room, Guest House (smart mini-seminar hall) and Administrative Building	Total Sanction : 100 lakhs Total Exp: 100 lakhs Balance : Nil	Completed
(ii)Equipments, (high tech labs) Furniture and Tables	Total Sanction :125 Lakhs Total Exp : 84,60,839/- Balance :40,39,161/-	CC approval for 35 lakhs obtained for the year 2017-18 pending provision in RE, and Continuing the Process of purchase of Equipments
(iii)To conduct Workshop/ Seminar/ Conference	Total Sanction : 4.5 lakhs out of 5 Lakhs Total Exp: 1,43,890/- Balance: 3,06,110/-	Submitted for BE 2018-19
(iv)Library books and Journals	Total Sanction : 2.5 Lakhs Total Exp: 2,48,997/- Balance: 1,003/-	
(v)Computer with 24 hours Internet Access & Printer	Total Sanction : 2.5 Lakhs Total Exp: 2,14,512/- Balance : 35,488/-	
Total Expenditure (Upto March 2017) : Rs.1,92,91,404/-		
Total Balance : Rs.56,58,596/-		

PGRC - III. Equipments and Software purchased till 31.03.2017

Item No.	Name of the Equipment/Software	Total Cost in Rs.
3.	High end FPGA Boards with ARM and DSP Cores: 1. Xilinx Kintex-7 FPGA KC705 with Xilinx VIVADO System Edition latest version (25 users) university bundle 2. Xilinx ZYNQ-7000 SoC Video and Imaging Kit	5 lakhs
4.	Thermal Infrared Imaging System (online imaging) FLIR A35	5.6 lakhs
8.	Optical Simulation Software – “VPI Transmission Maker Optical Systems”	15 lakhs
9.	Software defined Radio Platforms: Amitech –SIMS SDR 04	7.8 lakhs
6.	Wireless EMG, Biomechanical sensors and acquisition system -Biometric /UK	11 lakhs
1.	Cadence Software – Add-on bundle - 4 years License PG Bundle – 20 users and Research Bundle -10 users	19.88 lakhs

PGRC - IV. Equipments and Software under procurement for PGRC in the current Year

tem No.	Description of the Item sanctioned	Sanctioned Budget
2.	Mentor Graphics Software – 3 years License, 50 Users	10 lakhs
10.	CST Microwave Studio Simulator	6 lakhs
7.	Musculoskeletal Modelling and Analysis Software	8 lakhs
3.	High end FPGA Boards with ARM and DSP Cores	5 lakhs
5.	Biometric Workstation	6 lakhs

Major Equipments purchased during the last 1½ year (Feb 2016-Oct 2017)

<i>Name of the Equipment</i>	<i>Make Model</i>	<i>Total Cost in Rs.</i>	<i>Fund</i>
20 GHZ Vector Network Analyser	Keysight E5071C	27.5 lakhs	DST-PURSE-Phase-2
Gait Analysis - Wireless 8 channel DAQ with accelerometer, Goniometer, Myometer and tread mill	Biometric/UK	10.5 Lakhs	
LCD Projector - 5 Nos	Epson	1.6 lakhs	5.6 Infrastructure Development
3 MHz FG – 20 Nos	Jayam/JE LCD 203	1.35 Lakhs	
50 MHZ DSO – 14 Nos	Rigol	4.84 Lakhs	
UV-Vis Spectrophotometer -1No.	Labman-lmsp-uv1200	1.36 lakhs	
Dual Output DC Power supplies(0-30V, 5A) – 20 Nos	Sairush /SVL 030005D	4.62 lakhs	
Microwave x band components for Klystron based Test Bench (2 sets) and Gunn Based Test bench (1 set)	SICO	1.59 Lakhs	
Dual channel CRO, 30 MHZ – 6Nos	Scientific/ SM203G	1.65 lakhs	
Rack Mountable Server – 2 Nos	HP	3.74 lakhs	9.43-Consortium
Lan Trainer Kit 2 sets with Wireless Modules (1 set)	United Electronics	2.55 lakhs	
Communication Trainer Kit – 2 sets	United Electronics	1.72 lakhs	
100 MHZ Dual channel DSO – 15 Nos	GW Instek/GDS 1102B	4.7 lakhs	
Vital Parameters Monitoring System – 1 set	TMI Systems	2.95 lakhs	
Document Viewer – 10 Nos	Educorp	4.6 lakhs	
USRP N210 Kit – 1 Set	Tennet	3.96 lakhs	7.2.39 - FRMF

Major Equipments Under Process during this current Year

<i>Name of the Equipment</i>	<i>Estimated Cost in Rs.</i>	<i>Fund</i>
Sound Level Meter 7 Dosimeter – 1 No	4 lakhs	7.2.39 – FRMF
100 MHZ Dual channel DSO – 15 Nos	5 lakhs	9.43 – Consortium
FPA	2 lakhs	
Microwave Components	5 Lakhs	
FPGA – Xilinx Boards	2 lakhs	
FPGA – Intel/	2 lakhs	
Microprocessor Trainer Kits	7 lakhs	
Computers – 40 Nos	18.75 lakhs	
Laptop -5	3.25 lakhs	
Netsim software (academic license-25 & research License-1)	10 lakhs	
UPE Equipment & Facilities	25 lakhs	

On going Research Projects:

<i>Project Title</i>	<i>Sponsor</i>	<i>PI</i>	<i>Project Period</i>	<i>Project Amount</i>
Development of spread Spectrum CDMA based transceiver using AD 9361 platform	DRDO Project	Dr P.V.Ramakrishnan, Professor	Project Period : up to 31.12.2017	Rs.9,90,000/-
Design and development of Bio-potential signal analysis system for control of mobility assistive device	LSRB-DRDO Project	Dr M.Sasilaka , Associate Professor	28.04.2017-27.04.2020	Rs.30,55,580/-

UGC- UPE Project:

The Anna University has been awarded University with Potential Excellence (UPE) status in Biomedical Engineering and Instrumentation and RS.23 crores (Rupees twenty three crores) has been received by the university as initial grant vide UGC Lr.No. F.No.1-1/2016(NS/PE) Dated 28th March 2017, for the national level project **Automated Biomedical Device Development for Commercialization , with the development of automated antibiogram cum pathogen identification device (Bactibiogramoscope)**, which involves an highly interdisciplinary team work.

Dr.S.Muttan,HOD, Department of ECE is the Co-Ordinator of the Project and Dr.K.Gunaselan, Asst Prof, Dept. of ECE is the deputy co-ordinator .

Also Dr.S.Shenbagadevi, Dr.M.Meenakshi, Dr.R.Seshasayanan Dr S.Nirmala Devi, Dr.M.Sasikala, Dr..S.Poonguzhali, Dr N.Ramadass , DR K.Gunaseelan, and Dr.T.Jayasree from the Department of ECE are taking active part as Principal Investigators in the UPE Project

Out of the 23 crores, Rs.6,42,45,000/- has been allocated to the Department of ECE

The infrastructure facilities for PCB Manufacturing, Medical Imaging Laboratory, Optoelectronics Platform and Telemedical & M-Health Platform are being created in the Department of ECE as initial project activity.

UGC -SAP Project

The UGC has sanctioned a sum of **Rs.60.00 Lakhs** for the project titled "*Wireless Body Area Network for Telemedical Applications*" for a period of 5 years from 01.04.2012 to 31.03.2017 to the Department of Electronics and Communication Engineering, Anna University, under **Special Assistance Programme (UGC-SAP)** vide their letter no. F.3-34/2012(SAP-II) Dated 02.10.2012

Out of total grant of **Rs.41,80,527/-** (Rs. 35 lakhs under Non recurring- Equipment + Rs.6,80,527/- under Recurring) released by UGC for the Department of ECE , **Rs.37,17,765/-** has been spent till March 2017.

The Project has been successfully completed and submission of Utilisation Certificate and Statement of Expenditure is under process.

Item No.19.03.07 Deity Scholarships :

The Convenor described the members about the Deity Scholarships in the department and the candidates selected under Visveswaraya Ph.D Scheme.

The Visveswaraya Ph.D Scheme for Electronics & IT is sponsored by the Department of Electronics and Information Technology (Deity), Government of India. The fellowship for full time Ph.D students is Rs.31,500/- for first two years and Rs.35,000/- for 3rd, 4th and 5th year (revised

amount), an annual contingency grant of Rs.30,000/- and reimbursement of rent (ROR) as per the terms and conditions.

The full time candidates selected under the Scheme from Department of Electronics and Communication Engineering, CEG Campus are:

Reg.No.	Name	Supervisor
1525419593	ARIFA ANWAR	Dr.D.SRIDHARAN
1524419618	V.PREETHISRI	Dr.P.NIRMALKUMAR

Item No.19.03.08 Additional Directors / Deputy Directors

The Convenor expressed his congratulations for the staff members who have been performing additional duties as Additional Directors and Deputy Controller of Examinations. He also made a request to them while performing other duties also take care of their own department responsibilities.

1. Dr. S. Muttan – Additional Director, Centre for Constituent Colleges
2. Dr. G. Geetha – Centre for Academic Courses
3. Dr. S. Nirmala Devi – Centre for Distance Education
4. Dr. P. Sakthivel – Associate NCC Officer, NCC Navy
5. Dr. M. Sasikala – Centre for Student Affairs
6. Dr. V. Jawahar Senthil Kumar – Assistant Executive Engineer
(Electrical), Estate Office
7. Dr. P. Nirmal Kumar – Centre for Distance Education
8. Dr. S. Poonguzhali – Deputy Controller of Examinations

Item No.19.03.09 Minutes of Department meeting

The Convenor explained the members about the gist of the faculty meeting held on 31.10.2017.

A department meeting was held on 31.10.2017 and the following are the salient points discussed in detail:

I. General :

Attendance – Biometric System – Biometric system was installed in the department from the 1st of February. The HOD thanked all the members of the staff for extending full support in its implementation. The time table, allocation of faculty, allocation lab duties, key duties and other related activities were discussed. Further, each non-teaching administrative and technical staff were requested to give their opinions and inputs for development of the department. Mr.Manikandan was requested to visit all the labs and assess their current condition and put up a note to HOD for further action.

II. Faculty and research activities :

Room allocation for faculty : The faculty were allotted new rooms created in the J.C.Bose Building. The non-teaching staff were also allotted to various new labs in the J.c.Bose building. Further, all the teaching fellows and ph.D. Scholars were also given spaces with adequate facility.

The subject allocation, additional responsibilities held by the faculty of the department, their visits abroad, research activities, Conferences attended, invited lectures, CBCS system and other related items were also discussed.

Database of student and faculty- its creation, updation and maintenance
Website updation.

III. Non-teaching staff :

Allocation of responsibilities for non-teaching administrative, technical and Professional Assistants were discussed in detail and the Foreman was requested to prepare a status report on the manpower requirements of the department.

IV. Students :

Students Feedback
Students Programmes

V Status of all Purchases :

DST SAP
DST PURSE
Departmental budget – allocation and expenditure review
New proposals and purchase

Item No.19:03.10 Duties and responsibilities of Professional Assistants

There are eight numbers of Professional Assistants available in the department. The duties and responsibilities of Non-teaching administrative staff along with the Professional Assistants have been identified and are placed before DCC for information.

Group-I

Sl.No.	Name of Tech. Assistants / Professional Assistants assigned	Workload allotted
1. 2. 3. 4.	Mrs.M.Bhavani Mrs.J.Geetha Clerical Assistant Mr.S.L.Ravi	<ol style="list-style-type: none">1. Distribution of grade sheets / provisional certificates / degree certificates (Regular, Part-time, Passed out)2. Attendance Maintenance (Full time and Part-time)3. CL and CPL Register Maintenance4. Bill settlement for Canteen, Stationeries, Petrol and diesel for DG Set.5. Salary claims for Teaching Fellows and Professional Assistants6. Advance bill settlement for Conference and Workshops7. Bills for purchaser of books for Library8. Biometric Attendance print out9. Issue of cheques,HOD Account maintenance <ol style="list-style-type: none">1. Bill settlement for Overhead charges and contingency items2. All Registers (Bill Register, Appropriation Register, Sanction Register etc.,) Maintenance

Group-II**Workload details of Mrs.S.Syath Ali, Stenographer Gr.II**

Sl. No.	Name of Tech.Assistants / Professional Assistants assigned	Workload allotted
1.	Mrs.R.Subageetha	1. Student data base 2. Staff data base 3. Web page maintenance 4. Prevention of Attendance list preparation 5. Report preparation for UGC/NAAC/NIRF 6. Break of study / rejoining- coordinating the students 7. DCC meeting co-ordination and preparation of minutes 8. Preparation of expert lists for academic audit 9. All works like drafting reply and sending letters related to the department as and when assigned by the HOD. 10. Assistance in conducting all department meetings, class committee meetings, Purchase Committee meetings. 11. Focusing all telephone calls received from Dean's Office/Registrar's Office /ACOE's Office/ University Offices and taking action as well as urgent and ordinary. 12. Preparation of all meeting minutes 13. Issue of all department circulars 14. Maintenance of Canteen Book 15. Arranging guest lectures and coordination
2.	Mrs.R.Mettilda Mercy	
3.	Ms.Munavar jahan	
4.	Ms.G.Gomathy	

Group-III**Stores / Purchase Co-ordination**

Sl.No.	Name of Tech. Assistants / Professional Assistants assigned	Workload allotted
1.	Mr.Gokul	1. Purchase File Assistance 2. Stock Verification 3. Stock data base 4. Condemnation 5. Scanning of all purchase files 6. Purchase Committee Co-ordination 7. Technical Committee Co-ordination 8. Lab Consumables requirements and bill processing 9. Issue of Lab consumables 10.Issue Register Maintenance 11.Computer Consumables, Cartridges, Toner requirements and Bill processing
2.	Mr.Devanathan	

Group-IV

Sl.No.	Name of Tech. Assistants / Professional Assistants assigned	Workload allotted
1.	Mr.S.Chandru	1. Time Table assistance
2.	Ms.Lalitha	2. PG Chief Superintendent assistance
		3. Workshop / FDP / Conference assistance
		4. Servers Maintenance
		5. Laboratory assistance
		6. Teaching aids (LCD, OHP) assistance
		7. Lab equipment maintenance assistance
		8. Assisting guest lectures

Group-V

Sl.No.	Name of Tech. Assistants / Professional Assistants assigned	Workload allotted
1.	Mr.S.Babu	1. Networking / Internet / Wi-Fi facility
		2. Auditorium Co-ordination
		3. Desktop Computers, Laptops, Printer Maintenance
		4. Notice Board / e-Notice Board Maintenance
		5. Surveillance System maintenance

Section – 4

Ratification of action taken

Item No.19.04.01 Special Elective

The modified syllabus for Ph.D. Scholars for the subject Free Space Optical Networks submitted by Dr.M.Meenakshi, Professor, ECE has been approved by the Director, Academic Courses and is placed before DCC for ratification. The Committee ratified the action.

FI9100

FREE SPACE OPTICAL NETWORKS

Objective : To introduce wireless Gigabit technology by means of optical wireless communications

Outcome : Students can understand the deployment of free space optics.

Unit I:

9

Introduction

Introduction: Propagation of light in unguided media - laser beam characteristics -atmospheric effects on optical signals - coding for atmospheric optical propagation - LIDAR.

Unit II:

9

FSO Transceiver Design

Light Sources: Modulators - photo detectors and receivers - optical amplification – optical signal to noise ratio - acquisition, pointing and tracking - adaptive and active optics – laser safety - node housing and mounting.

Unit III:

9

Point to Point FSO Systems

Simple PtP Design: Transponder nodes - hybrid FSO and RF - FSO point to multipoint – FSO point to mobile; Ring FSO Systems: Ring topologies and service protection - ring nodes with add drop - concatenated rings - ring to network connectivity.

Unit IV: Mesh FSO Systems

9

FSO Nodes for Mesh Topology: Hybrid mesh FSO with RF - hybrid FSO fiber networks; WDM Mesh FSO: DWDM and CWDM optical channels - WDM FSO links - WDM mesh FSO networks - service protection in mesh FSO networks.

Unit V:

FSO Network Security and Applications

9

Cryptography: Security levels - security layers - FSO inherent security features; FSO Specific Applications: FSO networks for highway assisted communications - mesh FSO in disaster areas - visual light communication.

TOTAL HOURS : 45

References :

1. Stamatios V. Kartalopoulos, "Free Space Optical Networks for Ultra-Broad Band Services", IEEE Press, 2011.
2. Arun K. Majumdar and Jennifer C. Ricklin, "Free-Space Laser Communications: Principles and Advances", Springer, 2008.
3. Olivier Bouchet, Herve Sizun, Christian Boisrobert and Frederique De Fornel, "Free Space Optics: Propagation and Communication", John Wiley and Sons, 2010.
4. Heinz Willebrand and Baksheesh S. Ghuman, "Free Space Optics: Enabling Optical Connectivity in Today's Networks", Sams Publishing, 2002.

SECTION – 5

Discussion and Considerations

Item No.19.05.01 Proposal for manpower both teaching and non-teaching

The Convenor explained about the manpower needed to meet out the workload of the department by way of filling up the vacancy arises due to retirement etc. and placed before the Committee. Taking into consideration the need of permanent teaching, administrative and non-teaching technical staff, the Committee approved the proposal.

I.(i) Faculty required for (B.E.ECE)

Total number of students in 4 years	= 720
Total Faculty Required with the ratio of (1: 15)	= 48
H&S Faculty (25%)	= 12
Number faculty required for the Department	= (48-12) = 36
Professor: Associate Professor: Assistant Professor	

=4 : 8: 24 faculty members

(Ratio of 1 : 2 : 6)

(ii) Faculty required for (M.E Applied Electronics)

Professor	- 1
Associate Professor	-1
Assistant Professor	- 2

Total requirement : 4

(iii) Faculty required for (M.E VLSI)

Professor - 1
Associate Professor - 1
Assistant Professor - 2 Total requirement : 4

(iv) Faculty required for (M.E Communication Systems)

Professor - 1
Associate Professor - 1
Assistant Professor - 2
Total requirement : 4

Total faculty required for the department : 48
Available faculty members in the Dept. : 33
No.of new faculty members needed : 17

(v) Faculty required for (B.E Bio Medical Engg.)

Total number of students in 4 years = 240
Total Faculty Required at the ratio of (1: 15) = 16
H&S Faculty = 3
For the BME Department = (16-3)= 13
Professor:Associate Professor:Assistant Professor

=1: 3: 9 faculty members

(Ratio of 1 : 2 : 6)

(vi) Faculty required for (M.E Medical Electronics)

Professor - 1
Associate Professor - 1
Assistant Professor - 2
Total requirement : 4

(vii) Faculty required for (M.E Bio Medical Engineering)

Professor - 1
Associate Professor - 1
Assistant Professor - 2
Total requirement : 4

(viii) Total faculty required for the department (ECE + BME)

	Prof.	Asso.Prof.	Asst.Prof.
Faculty Required	10	16	43
Sanctioned post Available	4	10	19
Deficiency	6	6	24

II. Permanent Administrative staff required

The Department of ECE runs two U.G programs [**one in ECE (3 batches) & one in BME**] and 5 P.G. programs, with a total strength of 1330 full time students. The Department also runs one UG Part time programs and two PG Part time Program.

Sl.No.	Name of the Branch	Sanctioned Students intake	Total No. of Students
UG Programmes: (Full Time)			
1.	ECE	180	540
2.	BME	60	180
PG Programmes: (Full Time)			
3.	Applied Electronics	25	50
4.	Medical Electronics	25	50
5.	Communication Systems	25	50
6.	VLSI	25	50
7.	Bio-medical Engineering	25	50

Presently, the department is struggling to satisfy the basic needs in the administrative aspects such as distribution of certificates to students, settlement of bills, dispatch of tapals, issue of circulars, co-ordination with University office, Dean office, Controller office and other Centers, etc., due to insufficient manpower. The details of the administrative staff members available and required for the Department are mentioned below:

Sl.No	Regular Staff Category	Required	Available	To be filled
1.	Superintendent	1	0	1
2.	Stenographer	1	1	0
3.	Assistant	1	0	1
4.	Junior Assistant	3	1	2
5.	Office Assistant	2	1	1

III. Permanent Requirement of Non-teaching Technical staff :

The Department of ECE runs two U.G programs (**one in ECE & one in BME**) and 5 P.G. programs, with a total strength of 1330 full time students. The Department also runs one UG Part time programs and two PG Part time Program.

Sl.No.	Name of the Branch	Sanctioned Students intake	Total No. of Students	No. of Labs	No. of Lab Sessions	
					Odd Semester	Even Semester
UG Programmes: (Full Time)					72	44
1.	ECE	180	540	12		
2.	BME	60	180	4		
PG Programmes: (Full Time)						
3.	Applied Electronics	25	50	1		
4.	Medical Electronics	25	50	1		
5.	Communication Systems	25	50	1		
6.	VLSI	25	50	1		
7.	Bio-medical Engineering	25	50	1		

Now, the department is struggling to satisfy the basic needs in the technical aspects due to insufficient manpower. The details of the non-teaching (technical) staff members available and required for the Electronics and Communication Engineering Department are mentioned below:

Sl.No.	Regular Staff Category	Qualification	Required	Available	To be filled
1.	General Foreman	B.E.(ECE)	1 No.	1 No.	---
2.	Store keeper	B.E.(ECE)	1 No.	1 No.	---
3.	Technical Assistant	B.E.(ECE)	2 Nos.	2 Nos.	---
4.	Junior Tech. Asst.	Dip. (ECE)	6 Nos.	---	6 Nos.
5.	Mechanic (ordinary grade 'B')	ITI.(Electronics)	10 Nos.	6 Nos.	4 Nos.
6.	Lab Assistant	Xth std.	10 Nos.	5 Nos.	5 Nos.

Technical Staff details:

- a) Total No. of Laboratories: 15 Nos.
- b) The total technical staff required for each lab: 2 Nos.
[Each Laboratory must have either a Tech. Asst. / Jr.Tech. Asst. / Mechanic and a Lab Assistant]
- c) Total technical staff required for 15 labs: $(a \times b) = 30$ Nos.
- d) Available technical staff: 15 Nos.
- e) Technical staff category to be filled: $(c - d) = 15$ Nos.

Further, *Mr.B.Vijayakumar* (Lab Assistant) and *Mr.M.Rajan* (Lab Assistant) are *retired* after attaining superannuation during the year 2014 and there is no alternative hand has been posted till date. Also, *Mr.K.Mohammed Nabi* (M.O.G. 'B') is under suspension for a long period.

(IV) Separate building for BME proposal

The proposal for separate building for BME has been submitted to the Vice-Chancellor has been placed before the DCC for approval and the same has been approved by the Committee.

The overall demand for engineers in all industries will increase by substantially. In contrast, engineering jobs in the health service and medical instrument industries are forecasted to increase by many folds. In India, the government is trying hard to reach the goal of 'Health for all' by 2020. Hence the demand for technical personnel in the field of Medical Electronics and Bio Medical Engineering is increasing day by day.

But only a few institutions exist in India to meet this need: Currently not many institutions in India are offering Post Graduate course in Medical Electronics for more than 2 decades and Biomedical Engineering courses both at Under Graduate and at Masters degree in biomedical engineering.

Hence to meet all these requirements and to bring the name of our university in the global map in the field of Medical Electronics and Bio Medical Engineering, establishment of a separate Department of Medical Electronics Engineering is requested to meet the following objectives:

- To develop trained man power in the area of Medical Electronics and Bio Medical Engineering
- To increase the activities in the area of Medical Electronics and Bio Medical Engineering in the university
- To develop newer and affordable healthcare devices and hence
- To invite and attract funds from different funding agents both nationally and internationally.
- To bring name and fame for our university

Also, for the country to remain competitive with the rest of the world on this front, additional avenues may be undertaken to educate learners on biomedical engineering concepts. To this end, the Department of Medical Electronics Engineering would provide avenues to i) increase

the interest of junior/high school students in medical electronics and biomedical engineering, ii) provide training for industry employees to better prepare them for this rapidly changing and growing field, iii) assist instructors at academic institutions to teach medical electronics and biomedical engineering, and iv) educate college students in fundamental medical electronics and biomedical engineering principles.

The following is the projection of space and faculty requirement for the Department of Medical Electronics Engineering. This may be considered and the DCC may kindly recommend the same for necessary further action by the university.

Space Requirement for Conducting M.E – Medical Electronics:

Sl. No	Description	Capacity	No. Rooms / Labs	Area per Room / Lab in Sq. m.	Total Area in Sq. m.
1	M.E. Class Room	25	2	50	100

2	PG Lab	25	1	100	100
3	Research Lab	25	1	100	100
4	Seminar Hall	50	1	150	150
5	Library	50	1	150	150
6	Staff Room	4	4	10	40
Total Space Required					640

Space Requirement for Conducting M.E – Bio Medical Engineering:

Sl. No.	Description	Capacity	No. Rooms / Labs	Area per Room / Lab in Sq. m.	Total Area in Sq. m.
1	M.E. Class Room	25	2	50	100
2	PG Lab	25	1	100	100
3	Staff Room	4	4	10	40
Total Space Required					240

Space Requirement for Conducting B.E – Bio Medical Engineering:

Sl. No	Description	Capacity	No. Rooms / Labs	Area per Room / Lab in Sq. m.	Total Area in Sq. m.
1	B.E. Class Room	60	4	100	400
2	UG Labs	30	5	120	600
3	Seminar Hall	100	1	150	150
4	Computer centre	60	1	150	150
5	HoD Room		1	20	20
6	Staff Room		13	10	130
7	Tutorial room	60	1	70	70
8	Office Room			30	30

9	Store Room			30	30
10	Common Room		4	15	60
Total Space Required					1640

Total space required = 2520 sqm

B.E Bio Medical Engineering curriculum has the following 11 lab courses apart from project work

Devices and circuits lab, Computer Practices Lab, Sensors and Measurements lab, Bio Medical Instrumentation Lab, Integrated Circuits Lab, Microcontrollers and Interfacing Lab, Digital Signal Processing Lab, Diagnostic and Therapeutic Lab, Biochemistry and Human Physiology Lab, Pathology and Microbiology lab, Medical Image Processing Lab

Qualification and number of posts required for B.E Bio Medical Engineering

Designation	Number of posts required	Qualifications		
		Under graduate	Post graduate	Ph.d
ASSISTANT PROFESSOR (9 Posts)	4	B.E . Bio Medical Engg./ B.E Medical Electronics	M.E Medical Electronics/ M.E Bio Medical Engg.	--
	2	B.E ECE/B.E Electronics and Instrumentation	M.E Medical Electronics/ M.E Bio Medical Engg.	--
	1	B.E Computer Science and Engg.	M.E Bio Medical Engg.	--
	2	BSc	M.Sc in Anatomy/Physiology, MSc in Biochemistry / Pathology / Microbiology	--
ASSOCIATE PROFESSOR (3 Posts)	1	B.E . Bio Medical Engg./ B.E Medical Electronics	M.E Medical Electronics/ M.E Bio Medical Engg.	BME
	2	B.E Bio Medical Engg./ B.E Medical Electronics/ B.E ECE/ B.E Electronics and Instrumentation/ B.E in Computer Science& Engg.	M.E Medical Electronics/ M.E Bio Medical Engg.	BME
PROFESSOR (1 Post)	1	B.E . Bio Medical Engg./ B.E Medical Electronics/ B.E ECE/B.E Electronics and Instrumentation	M.E Medical Electronics/ M.E Bio Medical Engg.	Bio Medical Engg.

Qualification and number of posts required for M.E Medical Electronics

Designation	Number of posts required	Qualifications		
		Undergraduate	Post graduate	Ph.d
ASSISTANT PROFESSOR (2 Posts)	1	B.E . Bio Medical Engg./ B.E Medical Electronics	M.E Medical Electronics/ M.E Bio Medical Engg.	--
	1	B.E ECE/B.E Electronics and Instrumentation	M.E Medical Electronics/ M.E Bio Medical Engg.	--
ASSOCIATE PROFESSOR (1 Post)	1	B.E . Bio Medical Engg./ B.E Medical Electronics/ B.E ECE/B.E Electronics and Instrumentation	M.E Medical Electronics/ M.E Bio Medical Engg.	Bio Medical Engineering
PROFESSOR (1 Post)	1	B.E . Bio Medical Engg./ B.E Medical Electronics/ B.E ECE/B.E Electronics and Instrumentation	M.E Medical Electronics/ M.E Bio Medical Engg.	Bio Medical Engineering

Qualification and number of posts required for M.E Bio Medical Engineering

Designation	Number of posts required	Qualifications		
		Undergraduate	Post graduate	Ph.d
ASSISTANT PROFESSOR (2 Posts)	1	B.E . Bio Medical Engg./ B.E Medical Electronics	M.E Medical Electronics/ M.E Bio Medical Engg.	---
	1	B.E Electronics and Instrumentation ECE/B.E	M.E Medical Electronics/ M.E Bio Medical Engg.	---
ASSOCIATE PROFESSOR (1 Post)	1	B.E . Bio Medical Engg./ B.E Medical Electronics/ B.E ECE/B.E Electronics and Instrumentation	M.E Medical Electronics/ M.E Bio Medical Engg.	Bio Medical Engineering
PROFESSOR (1 Post)	1	B.E . Bio Medical Engg./ B.E Medical Electronics/ B.E ECE/B.E Electronics and Instrumentation	M.E Medical Electronics/ M.E Bio Medical Engg.	Bio Medical Engineering

TOTAL NUMBER OF POSTS REQUIRED FOR THE PROPOSED NEW DEPARTMENT OF MEDICAL ELECTRONICS ENGINEERING

DESIGNATION	NUMBER OF POSTS REQUIRED
ASSISTANT PROFESSOR	13
ASSOCIATE PROFESSOR	5

PROFESSOR

3

**NON - TEACHING STAFF (ADMINISTRATIVE AND TECHNICAL)
PROPOSAL FOR DEPARTMENT OF MEDICAL ELECTRONICS ENGINEERING**

EXPECTED FINANCIAL COMMITMENT

NON RECURRING EXPENDITURE:

i) Building construction:

Requested area	Approximate expenditure
2520 sq.m	Rs.5.25 crore (Civil+ Electrical + all amenities)

RECURRING EXPENDITURE :

Category	Field of specialization	Number of posts required	Qualification
SUPERINTENDENT	AS PER UTY NORMS	1	AS PER UTY NORMS
ASSISTANT	AS PER UTY NORMS	2	AS PER UTY NORMS
TECHNICAL STORE KEEPER	BIOMEDICAL / ECE	1	AS PER UTY NORMS
LAB ASSISTANT	BIOMEDICAL / ECE/ LIFE SCIENCES	5	AS PER UTY NORMS
OFFICE ASSISTANT	AS PER UTY NORMS	1	AS PER UTY NORMS
PROFESSIONAL ASSISTANT	BIOMEDICAL / ECE	3	AS PER UTY NORMS

A: i) Salary to the Teaching Staff

Designation	No. of posts requested	Pay band +AGP In Rs.	Salary at present (At minimum basic pay) in Rs.	Total per month in Rs.	Total per year in Rs.
Professor	3	(37400 – 67000)+10000	104962	314886	3778632
Associate Professor	5	(37400-67000)+ 9000	102832	514160	6169920
Assistant Professor	13	(15600-39100) + 6000	49708	646204	7754448
Total					1,77,03,000

i) Salary to the Teaching Staff for 5 years :

Designation	No. of posts requested	2 nd Year	3 rd Year	4 th Year	5 th Year
Professor	3	3857112	3968424	4083048	4201200
Associate Professor	5	6347760	6530940	6719580	6913920
Assistant Professor	13	7969728	8191404	8419632	8654880
Total		18174600	18690768	19222260	1,97,70,000

ii) Calculation of salary with the average pay in the pay band

Designation	No. of posts requested	Avg. pay +AGP in Rs.	Salary at present (At avg. basic pay) in Rs.	Total per month in Rs.	Total per year in Rs.
Professor	3	52200+10000	136486	409458	4913496
Associate Professor	5	52200+9000	134356	671780	8061360
Assistant Professor	13	27350+6000	74735	971555	11658660

Total	2,46,33,516
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B. i) Salary to the Non Teaching Staff

Designation	No. of posts requested	Pay band +GP In Rs.	Salary at present (At minimum basic pay) in Rs.	Total per month in Rs.	Total per year in Rs. (without HRA +CCA)
Superintendent	1	(9300-34800)+4800	30033+HRA+CCA	30033+HRA+CCA	360396
Steno Gr III	1	(5200-20200)+2800	17040+HRA+CCA	17040+HRA+CCA	204480
Junior Assistant	1	(5200-20200)+2400	16188+HRA+CCA	16188+HRA+CCA	194256
Technical Store Keeper	1	(9300-34800)+4300	28968+HRA+CCA	28968+HRA+CCA	347616
MOG 'B'	3	(5200-20200)+2000	15336+HRA+CCA	46008+HRA+CCA	552096
Lab Assistant	2	(5200-20200)+2400	16188+HRA+CCA	32376+HRA+CCA	388512
Junior Technical Assistant	3	(5200-20200)+2600	16614+HRA+CCA	49842+HRA+CCA	598104
Office Assistant	1	(4800-10000)+1300	12933+HRA+CCA	12933+HRA+CCA	155196
Sweeper	1	(4800-10000)+1300	12993+HRACCA	12993+HRACCA	155196
Total					29,55,846

ii) Calculation of salary with the average pay in the pay band

Designation	No. of posts requested	Avg. pay+GP In Rs.	Salary at present (At avg. basic pay) in Rs.	Total per month in Rs.	Total per year in Rs. (without HRA +CCA)
Superintendent	1	22050+4800	57190+HRA+CCA	57190+HRA+CCA	686280
Steno Gr III	1	12700+2800	33015+HRA	33015+HRA+CCA	396180

			+CCA		
Junior Assistant	1	12700+2400	32163+HRA +CCA	32163+HRA+CCA	385956
Technical Store Keeper	1	22050+4300	56125+HRA +CCA	56125+HRA+CCA	673500
MOG 'B'	3	12700+2000	31311+HRA +CCA	93933+HRA+CCA	1127196
Lab Assistant	2	12700+2400	32163+HRA +CCA	64326+HRA+CCA	771912
Junior Technical Assistant	3	12700+2600	32589+HRA +CCA	97767+HRA+CCA	1173204
Office Assistant	1	7400+1300	18531+HRA +CCA	18531+HRA+CCA	222372
Sweeper	1	7400+1300	18531+HRA +CCA	18531+HRA+CCA	222372
Total					56,58,972

This proposal is placed before the members for kind consideration and approval.

Item No.19.05.02 Gian Programme :

The Convenor of DCC placed a proposal of organizing the GIAN Programme in the department for approval. The Committee members carefully considered the proposal and approved.

The department is in the process of organizing GIAN programme by inviting Prof. **Arogyaswami J. Paulraj** from Stanford University. This is for the kind consideration and approval of the members.

Global Initiative of Academic Network
(Faculty from outside India only can use this format)

Name of Faculty : **Arogyaswami J. Paulraj**

Affiliation : Stanford University

Address : Room 232, Packard Building
350 Serra Mall, MC 9510

Stanford, CA 94305-9510

Fax: +1 (650) 723-8473

Email : apaulraj@stanford.edu

Course Title : **MIMO Wireless**

Broad Area : **Wireless Communication**

Item No.19.05.03 Electronic Museum

A museum to highlight the historic developments and evolution of Electronics and Communication is planned to be established in the free space available in the Ground Floor of the ECE Department.

Item No.19.05.04 NBA Accreditation

The department is contemplating to apply for Accreditation of NBA for the Courses offered in the ECE Department.


Dr.S.MUTTAN
CONVENOR


Dr.P.V.RAMAKRISHNA
MEMBER


Dr.Y.V.RAMANA RAO
MEMBER


Dr.S.SHENBAGADEVI
MEMBER


Dr.M.MEENAKSHI
MEMBER


Dr.M.A.BHAGYAVENI
MEMBER


Dr.V.JEYALAKSHMI
MEMBER


Dr.P.SAKTHIVEL
MEMBER


Dr.M.SASIKALA
MEMBER


Dr.O.UMAMAHESWARI
MEMBER


Dr.M.KANNAN (MIT)
MEMBER


Dr.K.LATHA (DEEE)
MEMBER