Devi Ahilya Vishwavidyalaya, Indore

School of Electronics

1. Name of the Department: School of Electronics, Faculty of Engineering Science

2. Year of establishment 1990

   A.1 Academic programmes offered by the department at present, under the following categories and Sanctions Pertaining to each of the Courses.

Programmes	Number	Course/Subjects
UG	NIL	Not Offered
PG	2	1. M.Sc. (Electronics) 2. M.Sc. (Electronics & Communication)
Integrated Masters	NIL	
M.Tech.	3	1. M.Tech (Embedded Systems) 2. M.Tech. (Spatial Information Technology) 3. M.Tech. (Mobile Computing Technology)
Ph.D.	1	Electronics
Integrated Ph.D.	-	
Certificate	-	-
Diploma	-	-
PG Diploma	-	-
Any other (please specify)	-	-
Total	6	

A.1.1 Details approval/recognition and recommendations issued by the statutory body (for example, (UGC, AICTE, NCTE, PCI, MCI, DCI) governing the programme in case of Professional Programmes letters for the <u>first time</u> and <u>Last Academic Year</u> recognitions

LOA and EOA for three M Tech programmes are kept in one file

If the department offers Distance Education Programmes (DEP) then
Number of programmes offered.   -NA-
Name of Each Programme

Letters for approvals by the Distance Education Council.

A.2 Copy of Ordinances related to the courses in the department

   M Tech Embedded Systems: Ordinance No 113

   M Tech Spatial information Technology: Ordinance No 175

M Tech Mobile Computing Technology: Ordinance No 202

Copies of ordinances for all five programmes are kept in one file

A.3 Number of working days during the last academic year.

All days except Sundays and holidays. As per attendance register for last four years, following is the summary of working days in last four years

2012	2011	2010	2009	2008
200	198	200	189	186

A.4 Number of positions in the Department, their appointment letters, joining reports and sanctions of Each

Positions	Teaching faculty			Non-teaching staff	Technical staff
	Professor	Associate Professor	Assistant Professor		
Sanctioned by the UGC / University / State Government	2	3	4	2	4
Recruited *Yet to recruit*	1+1(CAS) 1	0 2	3 1	2 -	4 -
Number of faculty & non-teaching staff working on contract basis	-	-	4	7	-

A.4.1 Qualifications of the teaching staff

Highest qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent teachers							
D.Sc./D.Litt.							
Ph.D.	2					1	3
M. Phil.							
PG (M. Tech./M.E.)						2	2
Temporary teachers							
Ph.D.						1	1
M. Phil.							
PG (M.Tech./M.Sc.)					2	1	3

Highest qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Part-time teachers (Courses Visiting Faculty)							
Ph.D.							
M.Phil.							
PG (M.Tech./ME)					2	1	3

Emeritus, Adjunct and Visiting Professors and their sanctions.

	Emeritus	Adjunct	Visiting
Number	NIL	NIL	NIL

Semester-wise Record of Courses Visiting Faculty and their Sanctions (2012-13)

S.No.	Academic Session	Sem	Course	Subject	Name	Qualification	Teaching/ Research/ Industry Experience	Number of Hours in the Semester
1	Jul-Dec	1	M.Tech. (ES)	Unix, Linux and Shell Programming	Mr. R Maheshwari	M.Tech.	02 years	40
2	Jan-June	2	M.Tech. (ES)	FPGA & System Architecture	Dr. V. Neema	Ph.D.	04 years	40
3	Jan-June	2	M.Tech. (ES)	Embedded System Programming-.NET framework	Mr. A. Gaur	M.Tech.	12 years	40
4	Jan-June	2	M.Tech. (ES)	VLSI Lab	Mr. P. Jain	M.Tech.	10 years	20
5	Jul-Dec	1	M.Tech. (SIT)	Advanced JAVA	Mr. A. Gaur	M.Tech.	12 years	40

School of Electronics – Self Study Report

				Programming				
6	Jul-Dec	1	M.Tech. (SIT)	Spatial Analysis	Mr. U Patel	M.Tech.	05 years	40
7	Jan-June	2	M.Tech. (SIT)	VB & .NET Programming	Mr. A. Gaur	M.Tech.	12 years	40
8	Jan-June	2	M.Tech. (SIT)	Digital Image Processing	Mr. Atul Bhatia	M.Tech.	07 years	40
9	Jan-June	2	M.Tech. (SIT)	Global Positioning Network	Mr. U Patel	M.Tech.	05 years	40
10	Jan-June	2	M.Tech. (SIT)	J2ME	Mr. Y Maheshram	M.Tech.	10 years	40
11	Jul-Dec	1	M.Tech. (MCT)	Wireless Communication, Networks & Protocols	Mr. A. Gaiwak	M.Tech.	20 years	40
12	Jul-Dec	1	M.Tech. (MCT)	Mobile System Programming I	Mr. A Bhatia	M.Tech.	10 years	40
13	Jan-June	2	M.Tech. (MCT)	Wireless Communication-II	Mr. A. Gaiwak	M.Tech.	20 years	40

A.6 Copies of Latest Biodata of Faculty in positions in the Department
Copies of resumes kept in a file

A.7 1. Copies of Yearly Performa Based Assessment Records of Faculty in positions in the Department
PBAS scores of all permanent faculty are kept in a file

2. Number of teaching posts sanctioned and filled (Professors/Associate

Professors/Asst. Professors)

	Sanctioned	Filled
Professor	2	1
Associate Professors	3	1
Asst. Professors	4	3

3. Faculty profile with name, qualification, designation and specialization (D.Sc./D.Litt./ Ph.D./M.Phil., etc.)

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. students guided for the last 4 years
Dr. Raj Kamal	Ph.D.	Professor (Associated jointly with SCSIT)	Embedded Systems, Mobile Computing, High Performance Computing	41	06
Dr. S. Katiyal	Ph.D.	Professor	VLSI, Control Systems	25	
Dr. A. Kumar	Ph.D.	Head & Professor	DSP, Analog & Digital Communication	21	01
Ms. P. Umale	M.E.	Assistant Professor (Stage 2)	Digital Communication	7	-
Dr. Manju K. Chattopadhyay	Ph.D.	Assistant Professor (Stage 2)	Semiconductor Device Modeling, CMOS &	9	-

			VLSI Design,		
Ms. Kirti Panwar	M.Tech.	Assistant Professor (Stage 2)	Mobile Computing	6	-
Dr. Alka Dubey	Ph.D.	Lecturer (Contractual)	uC 8051	3	-
Mr. Manoj Lokre	M.Tech.	Lecturer (Contractual)	Spatial Analysis	-	-
Mr. Rameez Raja Chowdhary	M.Tech.	Lecturer (Contractual)	Embedded Systems	3	-
Ms Krupali Jhala	M.Sc.	Lecturer (Contractual)	Analog Electronics	3	-

4. List of senior Visiting Fellows, faculty, adjunct faculty, emeritus professors

The school plans to recruit the following as adjunct faculty during 2013-14

1. Prof. P Dandekar, Visiting Professor, IIT Gandhinagar
2. Dr. S Vishwakarma, Assistant Prof, IIT Indore

5. Percentage of classes taken by temporary faculty – programme-wise information each semester wise information

For M.Tech. courses: 20% for session 2013-14. For M Sc courses: 10 % for session 2013-14

Course	Semester	Subject Name
M.Tech. (ES)	1	DBMS & .NET framework
M.Tech. (SIT)	1	Spatial Analysis
M.Tech. (SIT)	1	DBMS & .NET framework
M.Tech. (MCT)	1	DBMS & .NET framework
M Sc	III	Wireless Communication

For M.Tech. courses: 70% for session 2012-13.

Course	Semester	Subject Name
M.Tech. (ES)	1	Unix, Linux and Shell Programming
M.Tech. (ES)	2	FPGA & System Architecture
M.Tech. (ES)	2	Embedded System Programming-.NET framework
M.Tech. (ES)	2	VLSI Lab
M.Tech. (SIT)	1	Advanced JAVA Programming
M.Tech. (SIT)	1	Spatial Analysis
M.Tech. (SIT)	2	VB & .NET Programming
M.Tech. (SIT)	2	Digital Image Processing
M.Tech. (SIT)	2	Global Positioning Network
M.Tech. (SIT)	2	J2ME
M.Tech. (MCT)	1	Wireless Communication, Networks & Protocols
M.Tech. (MCT)	1	Mobile System Programming I
M.Tech. (MCT)	2	Wireless Communication-II
M.Tech. (MCT)	2	Mobile Databases

6. Programme-wise Student Teacher Ratio : 20:1
7. Number of academic support staff (technical) and administrative staff: sanctioned and filled

Positions	Non-teaching staff	Technical staff
Sanctioned by the UGC / University / State Government	2	4
Recruited	2	4
Yet to recruit	-	-
Number of persons working on contract basis	7	-

A.8 Students enrolled in the department during the current academic year, with the following details:

Students	Year	UG		PG		Integrated Masters		M.Tech.		Ph.D.		D.Litt./ D.Sc.	
		*M *F		*M	*F	*M	*F	*M	*F	*M	*F	*M	*F
From the state where the university is located	2012-13	-	-	3	2	-	-	40	7	8	3	NIL	NIL
	2013-14	-	-	10	8			26	15	Nil	Nil		
From other states of India	2012-13			11	9			13	00	Nil	1		
	2013-14			3	2			09	00	Nil	Nil		
NRI students		Nil											
Foreign students		Nil											
Total	**170**			27	21			88	22	8	4	Nil	

*M-Male *F-Female

Externally registered students?   No
If yes, how many students avail of this provision annually?

A.7 Calculation of 'Unit cost' of education

(Unit cost = total annual recurring expenditure (actual) divided by total number of students enrolled)

(a) including the salary component = Rs. 20,000

(b) excluding the salary component = Rs. 1,000

A.8 A. Faculty recharging strategies

1. Faculty members have been encouraged to attend Tutorials, workshops being held at IIT's and other institutes of repute in periodic intervals. Faculties have participated in hands-on training on latest microcontroller technology, wireless communication, and instrumentation design.
2. Faculty members have been encouraged to pursue research work/project vigorously and seek funding from available national bodies.
3. Faculty members have also been encouraged to pursue higher technical degrees

   B.   Number and list of faculty with course details of faculty development programmes, academic staff college programs or other faculty recharge programs

1. Dr. Manju K. Chattopadhyay and Ms. Kirti Panwar attended Short term Course on Mechatronics and Robotics, 15-19 July 2013, IIT Indore.

2. Ms. Pratibha Umale, Dr. Manju K. Chattopadhyay and Kirti Panwar attended UGC Sponsored 101st Orientation Programme, 21 June – 18 July 2011. All Secured 'A' Grade
3. Ms. Pratibha Umale and Dr. Manju K. Chattopadhyay attended UGC Sponsored Refresher course in Computer Application, 28 Sep – 18 Oct 2011 and both Secured 'A' Grade
4. Ms. Kirti Panwar attended UGC Sponsored Refresher course in Electronics, 8th – 28th Nov, 2011 and Secured 'A' Grade
5. Ms. Kirti Panwar attended training program on "Basics of Geometics (Image Processing & GIS) using Open Source Software" organized By DAIICT, Gandhinagar, 18th – 22nd June, 2012 and Three days SOLAR RADIO Workshop, 23rd-25th Nov, 2011 organized by National Centre for Radio Astrophysics, TIFR and the University of Pune, Pune.

Faculty members attended :
6. One day Workshop on "Mobile Computing" (WMC-2012) on 05 March 2012 organized by, School of Electronics and School of Computer Science & IT, DAVV, Indore & ICEIT, DAVV, Indore Chapter.
7. Three days Workshop on "Short Term Training Programme on Embedded System Programming" (SESP-2012) on 24-26 Feb. 2012 organized by, School of Electronics, DAVV, Indore
8. Two days National Workshop on "Mobile System Programming" (NWMSP-2012) on 10-11 Feb 2012 organized by, School of Electronics, DAVV, Indore.
9. Two days National Workshop on "Next Generation Networks"(NWNGN) on 27th – 28th Jan 2012 organized by, Institute Of Engineering and Technology, Devi Ahilya University, Indore.
10. National Workshop on Mobile System Programming by Dr. S.R.N Reddy , Assistant Professor at IGIT, Indraprashtha University, New Delhi. Dated 10-12 Feb. 2012.
11. Short term Training Programme on Embedded System Programming (SESP-12), by Prof. P.W. Dandekar , SVCE Indore. Date 24-26 Feb. 2012.
12. Workshop on Mobile Computing (WCM- 2012), " ICEIT-DAVV Indore Chapter, speaker Prof. H. M. Gupta, IIT Delhi, on 12th March 2012.
13. A motivational lecture on "Secrets of Success", by Mr. Chitlay (World Renowned Spiritual Leader & Humanitarian). Date 06th March'2012, Tuesday.
14. Workshop on "Mentoring Inspirational lecture on Innovations in Computer, Mobile and Tablets" By Dr. Raj Kamal, Professor School of Computer Science and Electronics, DAVV, Indore. Date 21st Jan 2013

A.9 Student projects

- Percentage of students who have done in-house projects including inter-departmental projects M.Sc.: 100%, M.Tech. 5%

- Percentage of students doing projects in collaboration with other universities / industry / institute M.Tech. 95%, M.Sc. 0%

A.10 Awards / recognitions received at the national and international level by

- Faculty: Nil
- Doctoral fellows :

  Following students working for their Ph.D. under Prof Raj Kamal as supervisor, got recognition as following details:
  - A research paper titled "Rule Promotion: A New Fuzzy Approach for Drawing the Inferences in Rule-based Expert System by Savita Kolhe, Raj Kamal, Harvinder S Saini and GK Gupta published in Volume 65, No.3, December, 2011, pp 359-365 has been selected for best paper award in the field of Statistical Methodology by Indian Society of Agricultural Statistics.

  - Paper Machine learning techniques for Mobile Intelligent Systems: A study, Archana Chaudhary, Savita Kolhe and Raj Kamal, Ninth International Conference on Wireless and Optical Communications Networks (WOCN), 20-22 Sept. 2012, published in IEEE Xplore, won award at the conference by Archana Chaudhary

- Students :

  - 04 students got selected for UGC's Rajiv Gandhi fellowship (SC/ST) scheme for Professional Courses for SC/ST candidates for the year 2010-11 during the financial year 2011-12
  - Gold Medal awarded yearly to the topper of M.Sc. Electronics & Communication, M.Tech. Mobile Computing Technology, M.Tech. Spatial Information Technology, M.Tech. Embedded System.

A.11 Record of each of Seminar/ Conference/Workshop organized and the source of funding (national / international) with details of outstanding participants, if any. (2009-13)

The details of seminars/conference/workshop are summarized below. The reports, photograph, list of participants etc are kept in a file

Training program organized
- Short term Training Programme on Embedded System Programming (SESP-12), by Prof. P.W. Dandekar, SVCE Indore. Date 24-26 Feb. 2012.

Three Workshops were organized during current year
1. Workshop on "Mobile Computing" 05th March, 2012 Jointly Organized by School of Electronics and School of Computer Science & IT, Devi Ahilya University, Indore & Institution of Communication Engineers and Information Technologists, Devi Ahilya University, Indore Chapter. Experts were Prof. H. M. Gupta, IIT Delhi and Mr. Nilesh Maheshwari, Founder & CEO at eMorphis Technology Solutions.
2. UGC Sponsored "National Workshop on Mobile System Programming (NWMSP- 2012)" on 10th – 11th Feb, 2012. Expert was Dr. S.R.N Reddy from IGIT, Indraprashtha University, New Delhi

3. Workshop on "Android Application Development" by Mr. Nitin Gharia, Sofmen Technology, Indore on 15th Oct, 2011

Seminars organized

- Seminar on "Personality development and attitude building", By Mr. Sandeep Atre , Edge Maker, Indore on 3rd Sep, 2011
- Student Career Guidance Seminar, By Mr. Deepak Mittal (GM), Tata Communication, Mumbai on 23rd July 2011
- National Workshop on Mobile System Programming by Dr. S.R.N Reddy , Assistant Professor at IGIT, Indraprashtha University, New Delhi. Dated 10-12 Feb. 2012.
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- A motivational lecture on "Secrets of Success", by Mr. Chitlay (World Renowned Spiritual Leader & Humanitarian). Date 06th March'2012, Tuesday.
- Workshop on "Mentoring Inspirational lecture on Innovations in Computer, Mobile and Tablets" By Dr. Raj Kamal, Professor School of Computer Science and Electronics, DAVV, Indore. Date 21st Jan 2013
- National Conference on "Emerging Electronics and Computing Systems" (NCEECS, 2010) & Workshop:

  1. One day Workshop:29th March, 2010 - 01st April, 2010
  2. Two days Paper Presentations: 02nd April, 2010 - 3rd April, 2010.

B. List highlighting the names of eminent scientists/scholars who participated in these events.

1. Padamshri Dr. D. D. Bhawalkar,

2. Prof. P.W. Dandekar, Tata Motors, (now at I.I.T Gandhinagar)

3. Prof Venkatachalan, IIT Bombay

• Second Conference of Shanti Swarup Bhatnagar National Awardees (Biological, Chemical, Earth, Atmosphere, Ocean and Planetary, Engineering, Mathematical, Medical and Physical Sciences) Jointly Organised by Faculty of Science, Life Sciences and Engineering Sciences, July 17-19, 2009

1. Padam Vibhushan Dr. Anil Kakodakar

2. Padam Bhushan Dr. T Alex

3. Padam Shri M. S. Sodha, FNA

4. Padamshri Dr. D. D. Bhawalkar

5. Prof. Ajoy. K. Ghatak, Emeritus Professor, I.I.T. Delhi

A.12 Write up of Code of ethics for research followed by the departments:

• Respect for intellectual property rights of individual and institution
• Follow the principles of ethics and social responsibility

A.12 Student profile course-wise (year 12-13)

Name of the Course	Applications received	Selected		Pass percentage			
		Male	Female	Male		Female	
				Min	Max	Min	Max
M.Tech.	525	50	7				
M.Sc. Electronics & Communication	21	14	7				
M.Sc. Electronics	10	6	4				

A.13 Diversity of students

Name of the Course	% 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.Sc.	10%	10%	80%	Nil
M.Tech.	5%	70%	25%	Nil

A.14 Record of how many students have cleared Civil Services and Defence Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

Year	NET	GATE
2008		
2009	0	5
2010	0	0
2011	0	3
2012	4	3
2013	2	1

A.15 Record of Student progression (2012-13)

Student progression	Percentage against enrolled
UG to PG	NIL
PG to M Tech	7
PG to Ph.D.	1
Ph.D. to Post-Doctoral	NIL
Employed	100
• Campus selection	20
• Other than campus recruitment	80
Entrepreneurs	NIL

A.16 Record of Diversity of staff

Percentage of faculty who are graduates	
of the same university	80
from other universities within the State	10
from universities from other States	10

from universities outside the country	00

A.17 Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the last four years

Nil

A.18 Present details of infrastructural facilities in the department with regard to

a) Library:

- Departmental library is having more than 10000 books
  Titles: 4000; Volumes: 11048
- Book bank facility is provided to students in each semester

b) Internet facilities for staff and students 24x7 Internet Facility is available.

c) Total number of class rooms: 05

d) Class rooms with ICT facility: Multimedia/ LCD in every classroom/Lab and full power back up in the laboratories/class rooms

e) Students' laboratories: 04

f) Research laboratories: 03

A.19 List of doctoral, post-doctoral students and Research Associates

a) From the host university:

1. Parag Parandkar
2. Kapil Kushwah
3. Anoop Tiwari
4. Namit Gupta

b) From other universities :

1. Amit Udawat, RGPV, Bhopal
2. Shitesh Tiwari, RGPV, Bhopal
3. Ajay Kulkarni, RGPV, Bhopal
4. Sadhan Chandra Das
5. Shekhar Sharma, RGPV, Indore
6. Vibha Tiwari, RGPV, Bhopal
7. Sarita Kansal, RGPV, Bhopal

9. Suvarna Joshi, Univ of Pune, Pune

A.19 Records of financial assistance and Number of post graduate students getting financial assistance from the university, UGC, State, AICTE.

13 students in each M.Tech. course i.e. A total of 39 students receive AICTE stipend each year.

A.20 Methodology of need assessment exercise undertaken before the development of new programme(s)

M.Tech. Mobile Computing Technology started in 2008-10 batch

Course curriculum is updated every year to meet the current market and technical man-power needs.

New Subjects included in the curriculum are:

- DBMS & .Net framework in all the M.Tech. Courses
- Advanced Java Programming in M.Tech.(MCT/SIT)
- Mobile computing programming – Python in M.Tech.(MCT)
- Advanced Microcontrollers – ARM in M.Tech.(ES)
- Linux and Shell programming in M.Tech.(ES/MCT)

A.21 Records of feedback from

a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?

The department committee comprising of all professors, Senior most lecturers and senior most readers takes decision about modification, addition or deletion of course content/ new courses etc. This is as per provisions of ordinance 31 of the University. A workshop for assessment is conducted at the end of every semester. Faculty is guided appropriately.

b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?

At the end of every semester, student feedback is taken on every theory paper taught, also on infrastructure facilities etc. Head of department discuss feedback with individual faculty members and give advice for improvement. When curriculum is revised, the suggestions given by students are kept in view.

c. alumni and employers on the programmes offered and how does the department utilize the feedback?

Feed back is taken from alumni through mail. It is utilized to upgrade the scheme

and syllabus is oriented according to the market needs. Numbers of students are selected in final year to do projects in leading companies due to reputation of School among employees in areas of Embedded Systems, Mobile computing Technology and Spatial Information Technology.

A.22 List the distinguished alumni of the department (maximum 10)

1. Mr. Salil Sharma, Director, SAGE Tech., USA

(SAGE Tech Gold Medal is sponsored by him for Topper of M.Sc. (Electronics))

2. Mr. Deepak Mittal, Tata Communications, Mumbai

3. Ms. Radhika Mittal, IFlex, Mumbai

4. Mr. Sandeep Bhattacharya, Sr. Design Engineer, ST Microelectronics

5. Dr. Prakash Bishnoi , Went for PhD. To Uppsala University, Sweden (550 years old University with many Nobel Laureate, discovered multiwavelength laser)

6. Mr. Akhil Gokhale, Wipro Technologies, Hyderabad

7. Mr. Rupesh Kanojia, Sr. Technologist, MSIT - SAP Basis, Microsoft India (R & D) Pvt. Ltd.

8. Mr. Ajit Rayaroth, Oracle Financial Services Software Ltd.

9. Mr. Dinesh Tripathi, Technical Lead, GE (General Electric Co. USA) in Hyderabad

10. Mr. Deepak Dhadwal, Philips, Bangalore

11. Mr. Rakesh Pritmani, ISRO

12. Mr. Anil Sukheja, ISRO

13. Mr. Amit Karkare, IBM India Pvt. Ltd Noida

14. Mr. Nishit Rawal, Network Security Consultant, Cisco, Bangalore

15. Ms. Mehga Singh (Bannerji), Release Manager, Wipro Infotech, Gurgaon

16. Mr. Anusharan Tiwari, Technical Lead, BrickRed Technologies, Noida

17. Mr. Arun Kumar Arrawatia, Sr. Design Engineer, ST Microelectronics

18. Mr. Suraj Prakash Pradhan, Cadence Design Systems, Delhi

19. Mr. Chandresh Dubey, Sr DSP Engineer, ATC Labs Noida

20. Mr. Vinit Saraswat, City Bank, New Jersey USA

21. Mr. Yogindra Trivedi, CISCO, Venezuela

22. Mr. Santosh Vishwakarma, Assistant Professor, IIT Indore.

A.23 Details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

1. Lecture series on Mahamana Madan Mohan Malviya ji was held on 06/11/2012 and 11/12/2012 Dr.Karan Singh, Hon'ble Justice Shri Girdhar Malviya, and Mrs. Kanta Malviya were the speakers. Series was organized by University

2. Lecture on Swami Vivekanand's Contribution and Message to youth was held on Jan.12, 2013 organized by University.

3. Bharat Ratna Dr. A.P.J. Abdul Kalam's message to University and college students on June 12, 2013 organized by University.

One Short term training programme was conducted by the School.

1. IEEE and UGC sponsored "Short Term Training Programme on Embedded System Programming (SESP - 2012)", 24th -26th Feb 2012. Expert was Prof. P.W. Dandekar, SVCE Indore.

Three Workshops were organized during current year by the School.

1. Workshop on "Mobile Computing" 05th March, 2012 Jointly Organized by School of Electronics and School of Computer Science & IT, Devi Ahilya University, Indore & Institution of Communication Engineers and Information Technologists, Devi Ahilya University, Indore Chapter. Experts were Prof. H. M. Gupta, IIT Delhi and Mr. Nilesh Maheshwari, Founder & CEO at eMorphis Technology Solutions.

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3. Workshop on "Android Application Development" by Mr. Nitin Gharia, Sofmen Technology, Indore on 15th Oct, 2011

4. Workshop on "Mentoring Inspirational lecture on Innovations in Computer, Mobile and Tablets" By Dr. Raj Kamal, Professor School of Computer Science and Electronics, DAVV, Indore on 21st Jan 2013

Two Seminars were organized by the School.

1.Seminar on "Personality development and attitude building", By Mr. Sandeep Atre , Edge Maker, Indore on 3rd Sep, 2011
2.Student Career Guidance Seminar, By Mr. Deepak Mittal (GM), Tata Communication, Mumbai on 23rd July 2011

A.24 Record and List of the teaching methods adopted by the faculty for different programmes.

Related Files are prepared by the respective faculty

A. Teaching Method: School uses both MMP and blackboard teaching. More focus on MMP. A Seminar hall is equipped with Electronic Board. Class room teaching will include both the methods of teaching.

Laboratories: Following laboratories are already running in the department.

- *VLSI & Embedded systems Lab*: EDA Tools- Mentor Graphics HEP-1 and 2, Xilinx9.2, Tanner Tool, Cadence, Synopsis, Active HDL, TI DSP Processor 6000 Series, MATLAB and toolboxes, 8051 & ARM Keil IDEs, Rabbit PIC Microcontrollers and PICTail, VGA with Touch screen QVGA, FPGA and CPLD Development kit.
- *Spatial Information Technology Lab*: LPS GEOMATICA ENVI version 10.1 & 10.2, ArcGIS 9.3, GPS Handheld receiver, GPS Trainer Kit, LabView 7.0 with Data Acquisition Card, GPS Bluetooth Data Logger, GPS Vehicle Tracker
- *Microcontroller & Microprocessor lab:* 8051, 68HC11, 80c196 Emulator, Embedded Workbenches for Intel 8051,Motorola 68HC11, Intel x96 microcontrollers 8031/8051 Microcontroller Trainer Kit
- *Mobile Computing Technology Laboratory:* GSM Trainer Kit, RFID Trainer Kit, CDMA Trainer Kit, RFID Reader and Development Kit, Mobile Exchange Trainer Kit, QAM Trainer Kit. Software Modules for Mobile Application Development.
- *Computer Lab:* 100+ Pentium Computers

B. Evaluation of Student

- The continuous evaluation system is already in place as per ordinance 31. This includes periodic tests, quizzes, assignments, seminars etc in every theory papers taught.
- Introduction of CBCS Scheme: The CBCS scheme is already prevalent in most of leading IITs in their curriculum and its advantages are greatly student's career oriented. The department plans to introduce CBCS scheme from next academic year

C. Industrial Visit: Students will be motivated to visit the electronic industries/organizations to study the actual application of various electronics processes.

D. Expert Lectures Delivery: Various expert lectures on different topic are proposed to organize in 2013-14
- Mobile Computing
- Spatial Information
- Mobile Application
- Real Time Operating System
- Refresher course of Electronics will be organized in Dec, 2013 in collaboration with Academic Staff College, Devi Ahilya University

A.25 Record of Monitoring by the department ensure that programme objectives are constantly met and learning outcomes are monitored

- Regular Faculty meetings are held by the HOD. Register is maintained (Enclosed)

- Innovative Method of learning are monitored by the HOD.

- A manual is prepared and distributed to M.Tech students for guidelines in their M.Tech major Project. (A manual was prepared to guide M.Tech. students about the work and ethics related to it. The manual describes in detail how to prepare the thesis as well. All the formats are given in it.)

- It is compulsory for the students to submit monthly reports about their projects. These are analyzed on monthly basis by the head of the department and respective Course Coordinator. Students are advised for improvement based on this analysis.

- Monthly reports are attached in Major Thesis for record.

- Students are encouraged to publish their work in form of papers and books.

Sample of an analysis of M.Tech. (MCT) Monthly reports:

M Tech (Mobile Computing Technology) 2010-12

Roll No.	Name of student	Grade	Remarks
10MTMCT01	ANURAG CHATURVEDI	REPORT NOT SENT	
10MTMCT02	ARVIND KUMAR MADDHESHIYA	REPORT NOT SENT	
10MTMCT03	CHANDRA SHEKHAR GOHIYA	C+	1. No work done reported for Jan 2. Send snap shots of results for the month of Feb
10MTMCT04	DEEPAK BICHOLIA	C+	1. Send snap shots of results for the month of Feb 2. Performance is below average 3. Explain why you spend only 4 hours per day for project
10MTMCT05	JITENDRA NANDIYA	D	1. Title is not suitable. Give appropriate title to your work 2. send specific work done with results snapshots and send results obtained so far 3. second report not received
10MTMCT06	KRISHNA CHAITANYA T.	B+	1.Work seems to be done jointly with Pravin Thogarla. Joint project is not acceptable.2. Write a different suitable title of your project
10MTMCT07	MAYANK SHUKLA	A	Performance is ok
10MTMCT08	MEENAKSHI AKHAND	D	Unsatisfactory work
10MTMCT09	NEETI SAXENA	C	1. Title is not suitable. Give appropriate title to your work 2. Eleborate your work and send results obtained so far3. No progress is seen monthwise.
10MTMCT10	NITIN KUMAR GHARIA	B+	1. Title is not suitable. Give appropriate title to your work 2. Eleborate your work and send results obtained so far
10MTMCT11	PRAVEEN THOGARLA	B+	Performance is ok
10MTMCT13	RAHUL DUBEY	C	1.Report for Feb not received 2. actual work done by you is unclear
10MTMCT14	RITU CHHALOTRE	-	
10MTMCT15	RITU VERMA	C+	1.Title need to be specific and well meaning 2. Elaborate your work in 100 words
10MTMCT16	RUPALI PATIL	REPORT NOT SENT	
10MTMCT17	SHASHWATI MUSALGAONKAR	A	1.Title need to be specific and well meaning 2. Mention nmae of month w.r.t. point no.5 3. Send snapshots of results

A.26 Details and Highlight of the participation of students and faculty in extension activities in the department.

Students participate in Blood donation camps and other charity programs. Thje also participate in University organized Computer awareness programmes, Khan River Cleaning Campaign, Environment awareness program. Department also follows University's Green Initiative. A Lecture on Ozone layer is scheduled in September by subject expert.

A.27 Details of "beyond syllabus scholarly activities" of the department.

Faculties help students to prepare for various competitive exams. Informal guidance and counseling are continuously provided to students by different faculty members of the department

A.28 Information about programme/ department accreditation/grading by other agencies? If yes, give details. –Nil-

A.29 Write up of highlight the contributions of the department in generating new knowledge, basic or applied.

School has contributed by promoting technical education and research in the important and fast growing areas of Communication, Signal Processing, Networking, VLSI and Embedded Systems, GIS, Mobile Computing Technology.

School has contributed for implementing following vision :

1. Creation a tate-of-the-art education, training and research in the field of VLSI Design, Embedded Systems, Digital Signal Processing, Computer Networking, GIS Data Processing at Postgraduate and Doctoral level.

2. Imparting quality technical education of international standard and imbibe skills for solving real life problems.

3. Inculcating national/global perspective in attitude among students so as to equip them to face challenges ahead. To cultivate adoption of ethics, morality and healthy practices in professional life among students so as to enable them becoming better citizens of the country.

(i) Department is running three innovative M. Tech. courses started first time in the Country and two M.Sc. Program

(a)M.Tech. (Embedded System)

Specialization: Advanced Microcontrollers, CMOS & VLSI Design, RTOS, Embedded Systems, DSP.

(b) M.Tech. (Spatial Information Technology)

Specialization: Remote Sensing, Digital Image Processing, DBMS & . NET, ArcGIS, DSP

(c)M.Tech. (Mobile Computing Technology)

Specialization: Mobile System Programming – Python, Advanced Java, Mobile Computing, Mobile Communication, DSP

(d) M.Sc. (Electronics & Communication)

Specialization: Computer Networks, Wireless & Mobile Communication.

(e) M.Sc. (Electronics)

Specialization: Microcontrollers, VLSI Design & Embedded Systems.

Year-wises Publications in the department:

2012-13

1. A.Kulkarni and A.Kumar, "Adaptive Backstepping control for uncertain underactuated systems with input constraints", Proceedings of Science Direct International Conference on Modeling Optimization and Computing, pp. 1001-1010, 2012.
2. A.Kulkarni and A.Kumar, "Dynamic Recurrent Wavelet Neural Network Observer Based Tracking Control for a Class of Uncertain Nonaffine Systems", International Journal of Intelligent Systems and Applications, Vol.11, pp. 53-61, 2012.
3. Suvarna Joshi and Abhay Kumar, Correlation filter based Fingerprint Verification System, International conference on VLSI ,communication and instrumentation,19–22, Kottayam, Kerala, India, April 2011.
4. Suvarna Joshi and Abhay Kumar, Wavelet Based Rotation Invariant Fingerprint Recognition, CiiT International Journal of Digital Image Processing, March 2012.
5. Suvarna Joshi and Abhay Kumar, Feature extraction using DWT with application , to offline signature identification,,ICSIP 2012, Lecture Notes in Electrical Engineering, Vol. 222, 2013, pp 285-294.
6. Suvarna Joshi and Abhay Kumar, Bimodal Biometrics Authentication system using iris and offline signature, International Conference on Human Computer Interaction, accepted.
7. Manju K. Chattopadhyay, Raj Kamal, Emerging Technologies in Random Access Memories, International Journal of Advances in Engineering Science and Technology, 2(1), pp.84-88, 2013

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Book Published

8. Digital Systems Principles and Design, Raj Kamal – A Text Book, http://www.pearsoned.co.in/Raj Kamal www.pearsoned.co.in/Raj Kamal Pearson Education, Anna Univ. Edition, 2012
9. Switching Theory and Logic Design, Raj Kamal - A Text Book, http://www.pearsoned.co.in/Raj Kamal www.pearsoned.co.in/Raj

Kamal Pearson Education, JNTUniv, Kakinada Edition, 2012,

10. Mobile Computing, Raj Kamal, Oxford University Press, 1st Edition, Oct. 2007; 2nd Edition, 2012
11. Microcontrollers. – Architecture, Programming, Interfacing and System Design,, Raj Kamal- A Text Book, http://www.pearsoned.co.in/Raj Kamal www.pearsoned.co.in/Raj Kamal Pearson Education, Singapore, First Edition and First Print, 2005, Translation in Mandarin (Chinese) by Pearson, Taiwan 2009, 2nd Edition, 2012
12. Design of Data Acquisition System, Pratibha Umale, LAP LAMBERT Academic Publishing, Germany
13. Self Learning and Evaluation System using Windows Mobile, Kirti Panwar, Lambert Academic Publishing (2011-08-18) (ISBN-13 : 978-3-8454-3605-0)

International Journal
14. Security Orchestration at Process Level, International Journal of Computer Science, Information Technology, & Security (IJCSITS) Vol2, No.3 June 2012,
15. Service Integration towards Security Orchestration, Aradhana Goutam, Raj Kamal, and Maya Ingle, Journal of Procedia, Technology, (ISSN: 2212-0173) Elsevier, 2012 (Accepted) [International Conference on Information and Technology (ICIET'12, Mumbai, 20th Jan 2012]
16. A Kulkarni and A Kumar, "Dynamic Recurrent Wavelet Neural Network Observer Based Tracking Control for a Class of Uncertain Nonaffine Systems" International Journal of Intelligent Systems and Applications (IJISA), Accepted, 2012.
17. S Joshi and A Kumar, "Wavelet Based Rotation Invariant Fingerprint Recognition", CIIT International Journal of Digital Image Processing (Accepted), 2012
18. An efficient Deadlock-free NARCO based fault tolerant routing algorithm in NoC Architecture", The International Journal of Emerging Technology and Advanced Engineering(IJETAE) (online), approved by National Science Library (NSL), National Institute of Science Communication And Information Resources (NISCAIR), Council of Scientific and Industrial Research, New Delhi, India, Vol. 2 , Issue 2, Feb. 2012, ISSN 2250–2459.
19. Performance comparison of XY,OE and DyAd routing algorithm by Load Variation analysis of 2-Dimensional Mesh topology based Network-on-chip", BIJIT; "BVICAM's International Journal of Information technology" having ISSN 0973-5658.
20. Reliability issue in QCA based Serial Subtractor , Nano Sci Tech 2012, Panjab University, Chandigarh, Feb 15-18,2012.
21. Study of Autorun Worm: An analytical approach towards Orchestrator model for system security, Maya Ingle, Raj Kamal , Aradhana Goutam," CIT Journal Research, Vol-1, issue-4,Dec-Feb 2011,page no 83-88
22. An intelligent multimedia interface for fuzzy logic based inference in crops, Savita Kolhe, Raj Kamal, Harvinder S. Saini and G. K. Gupta, Expert System with Applications 38:12 (2011) pp. 14592-14601. (5-Year

Impact Factor = 3.162)

23.   Rule Promotion: A new fuzzy logic approach for drawing inferences in Rule Based expert System, Savita Kolhe, Raj Kamal, H.S. Saini ,and G.K.Gupta, www.isas.org.in/isas Journal of Indian Society of Agricultural Statistics, 65(3) (2011) 359-365 [NAAS Impact Rating 5.1]

24. Quantitative Analysis of Spin hall effect in Nanostructures", accepted for publication in BIJIT, "BVICAM's International Journal of Information Technology" " having ISSN 0973-5658.

25. Performance Analysis of variation in Power Consumption and Frequency on different topologies of Ring VCO in 70 nm CMOS technology", accepted for publication in BIJIT, "BVICAM's International Journal of Information Technology" having ISSN 0973-5658.

26. "Low Power with improved noise margin for DOMINO CMOS Nand Gate", accepted for publication in International Journal for Computational Engineering Research.

27. Exploring Alternative Topologies for Network-on-Chip Architectures, BIJIT BVICAM's International Journal of Information Technology", ISSN 0973-5658, July-Dec'2011, Vol. 3 No.3.

28. "LSCMA Blind Adaptive Algorithm with Comparison of Optimization Capabilities for Smart Antenna Systems", IACSIT International Journal of Engineering and Technology (IJET), ISSN: 1793-8244 (Online Version); 1793-8236 (Print Version), International Association of Computer Science & Information Technology Press, Singapore.

29. "Quantitative analysis of Spin hall effect in nanostructures", 26th International Conference on Low Temperature Physics (LT26), Beijing, China, August 10-17, 2011.

30. "Ultra Compact Low Power Low Voltage Current Starved VCO in 32nm CMOS Technology", 2011 International Conference on Modeling, Simulation and Visualization Methods (MSV'11), , USA, July 18-21, 2011.

31. "Investigation of Power Management and Effective Routing Algorithms for NoC Design", 2011 International Conference on Wireless Networks (ICWN'11), USA July 18-21, 2011.

32. "Comparative Analysis of Two Topologies of Ad Hoc on Demand Distance Vector Protocol Under Black Hole Attack", 2011 International Conference on Wireless Networks (ICWN'11), USA, July 18-21, 2011.

33. "CMA Blind Adaptive Beam-forming Algorithm with Comparison of Optimization Capabilities for Smart Antenna Systems", 2011 International Conference on Wireless Networks (ICWN'11), USA, July 18-21, 2011.

34. S Joshi and A Kumar, "Correlation Filter based Fingerprint Verification System", International conference on VLSI ,communication and instrumentation, 19–22, Kottayam, Kerala, India , April 2011

35. S Joshi and A Kumar, "Wavelet Based Rotation Invariant Fingerprint Recognition", International journal of computer applications, 2011.

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36. "Multi level logic and its applications to Interface with Digital system",

The Indian Journal of Technical Education (IJTE) ISSN 0971-3034 pp. 327-331.

37. "Low Power High Speed with Improved Noise Margin For Domino CMOS Inverter", Indian Journal of Applied Research, April,2012, vol. 1, issue 7, ISSN 2249-555X.

38. "Time Independent & Reconfigurable Null Conventional Logic", National conference on Innovations in Communication System and Systems Design (ICSSD-2012), 2-3 March, 2012, GGITS, Jabalpur.

39. "Understanding System on Chip Design Languages as SoC Design Alternative", 6th National Conference; INDIACom-2012 Computing for Nation Development, Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi, Feb. 23 – 24, 2012.

40. "Quantitative Analysis of Spin hall Effect in nanostructures", 6th National Conference; INDIACom-2012 Computing for Nation Development, Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi, Feb. 23 – 24, 2012.

41. "Comparison of Different AOA Estimation Techniques For SAS", 6th National Conference; INDIACom-2012 Computing for Nation Development, Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi, Feb. 23 – 24, 2012.

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42. Computer Architecture, [Nicholas Carter (original author) and Raj Kamal (Adaptation/ Revision author)] Published as Schaum Series McGraw-Hill, International Indian Edition, Ist Edition May 2006, 2nd Edition 2010.

43. Device Modeling Of AlGaN/GaN High Electron Mobility Transistors (HEMTs): - An Analytical Approach, Manju K. Chattopadhyay, LAP LAMBERT Academic Publishing (October 29, 2010) ISBN-13: 978-3838396293

44. Image Compression and Processing, Aradhna Gautam Dissertation Published as book by Lambert Publs. Germany, 2010.

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DR. RAJ KAMAL

46. Knowledge Engineering for an Expert System on Crop Disease Management. Savita Kolhe, Raj Kamal, Harvinder S. Saini and G. K. Gupta, Journal of Computer Science, (Accepted), 2010

47. A fuzzy-logic based on-line disease diagnosis system for soybean, Savita Kolhe, Raj Kamal, Harvinder S. Saini and G. K. Gupta, Soybean Research, Vol 7, 2009

48. Low-power LFSR Kernel Architecture in Mobile Transmitter and Receiver Protocols and Software Defined Radios, C N Khairnar, Sanjiv Tokekar and Raj Kamal, International Journal of Recent Trends in Engineering (ISSN: 1797-9617),Vol. 2, No. 1, pp20-26, Nov 2009

49. A web-based intelligent disease diagnosis system using a new fuzzy logic

approach for drawing the inferences in crops, Submitted to World Congress On Nature and Biological Inspired Computing (NaBIC2009), Savita Kolhe, Raj Kamal, H.S. Saini ,and G.K.Gupta, Communicated, Proceedings to be published in IEEE Computer Society and indexed by both EI (Compendex) and ISTP (Published in IEEE Xplore), December 9-11, pp. 812-817, 2009

50. KMSCD:Knowledge Management System for Crop Diseases, Savita Kolhe, Raj Kamal, H.S. Saini ,and G.K.Gupta, presented at World Congress on Nature and Biologically Inspired Computing (NaBIC 2009), IEEEExplore

51. "Applying HPC and Virtual Reality for Modeling of Traction Systems", International Journal of Academic Research, Azerbaijan, May 2010 issue, vol. 2, No. 3, pp.107-116.

52. "Modeling and Reliability Analysis of CNT and MEMS based Wireless Sensor

   Network", International Journal of Academic Research, Journal of Mathematics   and

   Technology, Azerbaijan, February 2010 issue, vol. 1, issue 1, pp. 136-146.

53. Simulation and Synthesis of Synchronous Optical Network Standard Synchronous Transport Signal STS-12 Transmitter", PACE, A journal of Research of Prestige Institute of Management, India, Vol. 1 No.1, Jan. 2010   issue,

   pp. 61-67.

54. "Efficient Memory Mapping in GSM phones", International Journal of Recent

   trends in Engineering, Academy Publishers and ACEEE, Finland, November, 2009.

55. Journal of Electronics and Computers Volume 2, Number 1, ISSN:0975-3796: "Need of Image Compression for Position Explorer Engine based on Cell Phone", International Conference TRACE-2010, PP 233-238, 2010

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56. "A Novel way of Intelligent Network Identification in GSM Networks", 2nd

   International Conference on Future Networks, (ICFN 2010), Sanya, China, Jan. 22-24, 2010.

57. "Comparison of Learning Approaches in AI", 2nd International Conference   on

   Computer and Electrical Engineering (ICCEE 2009), Dubai , UAE, 28 - 30 December 2009.

58. "Critical Evaluation of Connection Admission Control methods in ATM Networks", 2009 International conference on Information and Multimedia Technology(ICIMT-2009), Jeju Island, South Korea, 18-19 December, 2009.

59. Evaluation of AI Applications, 2009 International conference on Information and Multimedia Technology(ICIMT-2009), Jeju Island, South Korea, 18-19 December, 2009.

60. Wireless Telemetry controlled Robot, International Conference on Computer Technology and Development, ICCTD 2009, Kota Kinabalu, Malaysia, November 13 - 15, 2009.
61. A Novel technique for Colour Sensing of Object using RADAR, International Conference on Information Technology ICIT 2009, Venice, Italy, October 28-30, 2009.
62. A Low Power Muscle Stimulation Technique, International Krygyz-Kazakh Electronics & Computer Conferences (IKECCO 2009), Almaty, Kazakhstan 12-13 October, 2009.
63. Comparative Evaluation of Sensor Network Routing Protocols, International Conference on Computer and Information Science ICCIS 2009 Amsterdam, The Netherlands, September 23-25, 2009.
64. Qos Guaranteed Routing Protocols for Sensor Networks, International Conference on Computer Science and Software Engineering ICCSSE 2009,
   Singapore, August 26-28, 2009.
65. Evaluation of Planning Approaches in AI, International Conference on Computer Science and Information Systems Engineering, ICCSISE 2009, Singapore, August 26-28, 2009.
66. Maintaining QoS in Digital watermarking Schemes, International Conference on Computer Science and Information Systems Engineering ICCSISE 2009 Singapore, August 26-28, 2009.
67. Fuzzy Logic Based Congestion Control approach in GSM Networks, International Conference on Computer Science and Information Systems Engineering, ICCSISE 2009, Singapore, August 26-28, 2009. Embedded Handheld Spirometer with a Graphical LCD Display, International Conference on Bioinformatics and Computational Biology (BioComp'09) under WORLDCOMP'09 - The 2009 World Congress in Computer Science, Computer Engineering and Applied Computing, Las Vegas, Nevada, USA, July 13-16, 2009.
68. Efficient FPGA Implementation of Multiplexers, International Conference on Modeling, Simulation & Visualization Methods (MSV'09) under WORLDCOMP'09- The 2009 World Congress in Computer Science, Computer
   Engineering and Applied Computing, Las Vegas, Nevada, USA, July 13-16, 2009.
69. Kirti Panwar "Best Route Finder Smart Vehicle" in the II International Conference on Opportunities and challenges in Global Business organized by International Institute of Foreign Trade and Research, Indore, Feb 13-14, Page: 14, 2010
70. Kirti Panwar "Interactive Local Transportation System using GIS and GS" in the II International Conference on Opportunities and challenges in Global Business organized by International Institute of Foreign Trade and Research, Indore, Feb 13-14, Page: 14, 2010
71. Ms. Pallavi Yarde, Ms. Rashmit Khanuja, Mr. Arun Pandey, "Innovated Transportation System (InTS): as a solution for the Challenges of Operation Management", International Conference at IIFTR, Indore , Page 12, 2010

72. Ms. Amrita Tiwari, Ms. Nikita Shukla, "Visualization of Location Based Services using SVG", International Conference at IIFTR, Indore in 2010
73. Ms. Parul Jain, Ms. Surabhi Jain, Mr. Tushar Kumar Shrivastava "Spatial Database Intelligence in Traffic Control (SDITC) ", International Conference at IIFTR, Indore in 2010

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74. Comparison of CAN, TTCAN and FlexRay and their suitability in safety critical applications, Proc. National Conference on Emerging, Electronic and Computing Systems, April 02-03, 2010
75. Kirti Panwar "Dominant use of Variable over Signal for Behavior Modeling in   VHDL" in the National Conference of Shanti Swarup Bhatnagar Award Winners organized by Devi Ahilya University, July 17-19, 2009, Page: 35, Indore.
76. Kirti Panwar, Uma Rajchandani, Ashwani Kumar "VGA Signal Generation using FPGA (Spartan 3E)" in the National Conference of Shanti Swarup Bhatnagar Award Winners organized by Devi Ahilya University, July 17-19, 2009, Page: 34, Indore.

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77. A fuzzy-logic based on-line disease diagnosis system for soybean, Savita Kolhe, Raj Kamal, Harvinder S. Saini and G. K. Gupta, Soybean Research, Vol 7, 2009
78. Low-power LFSR Kernel Architecture in Mobile Transmitter and Receiver Protocols and Software Defined Radios, C N Khairnar, Sanjiv Tokekar and Raj Kamal, International Journal of Recent Trends in Engineering (ISSN: 1797-9617),Vol. 2, No. 1, pp20-26, Nov 2009
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80. KMSCD:Knowledge Management System for Crop Diseases, Savita Kolhe, Raj Kamal, H.S. Saini ,and G.K.Gupta, presented at World Congress on Nature and Biologically Inspired Computing (NaBIC 2009), IEEEExplore
81. Applying HPC and Virtual Reality for Modeling of Traction Systems", International Journal of Academic Research, Azerbaijan, May 2010 issue, vol. 2, No. 3, pp.107-116.
82. Modeling and Reliability Analysis of CNT and MEMS based Wireless Sensor
   Network, International Journal of Academic Research, Journal of Mathematics and Technology, Azerbaijan, February 2010 issue, vol. 1, issue 1, pp. 136-146.

83. Simulation and Synthesis of Synchronous Optical Network Standard Synchronous Transport Signal STS-12 Transmitter, PACE, A journal of Research of Prestige Institute of Management, India, Vol. 1 No.1, Jan. 2010   issue, pp. 61-67.

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86. "A Novel way of Intelligent Network Identification in GSM Networks", 2nd

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    Singapore, August 26-28, 2009.

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98. "Embedded Handheld Spirometer with a Graphical LCD Display", International Conference on Bioinformatics and Computational Biology (BioComp'09) under WORLDCOMP'09 - The 2009 World Congress in Computer Science, Computer Engineering and Applied Computing, Las Vegas, Nevada, USA, July 13-16, 2009.

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105. Comparison of CAN, TTCAN and FlexRay and their suitability in safety critical applications, Proc. National Conference on Emerging, Electronic and Computing Systems, April 02-03, 2010

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107. Kirti Panwar, Uma Rajchandani, Ashwani Kumar "VGA Signal Generation using FPGA (Spartan 3E)" in the National Conference of Shanti Swarup Bhatnagar Award Winners organized by Devi Ahilya

University, July 17-19, 2009, Page: 34, Indore.

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108. Modeling the system tasks and deploying the Orchestrator tasks for Communication of Messages from the Music files in a Robotic Orchestra, Raj Kamal and H. S. Saini , CSI Communications, Nov. 2008

109. Low-power LFSR Kernel architecture in mobile transmitter and receiver protocols and software defined radios, C N Khairnar, Raj Kamal, and Sanjiv Tokekar, Communicated, 2008

110. Manju K. Chattopadhyay, Sanjiv Tokekar, "Thermal model for dc characteristics of algan/gan hemts including self-heating effect and non-linear polarization" Microelectronics Journal 39 (2008) 1181–1188

111. Manju K. Chattopadhyay "Thermal Model for AlGaN/GaN HEMTs Including Self-Heating Effect and Non-linear Polarization" Microwave 08, international conference on Microwave Devices and circuits, Nov 21-24, 2008 Jaipur

112. "E- Governance: Windows to Success", Proc. of the National Conference   on Business Technologies(IT that drives Business), TRUBA College of Engineering and Technology , Indore, Mar. 13-15, 2009.

113. Kirti Panwar, Ashwini S. Patankar " Can 3G Affirm Security Measures: An Insight View " Communicated to National Conference on "Business Technologies" organized by Truba College of Engineering & Technology TBTC'09, Indore from 13-14 March, 2009

114. "HMIS: Hospital Management Information System - An Economical
Investment to Manage Healthcare Information", Proc. of the National Conference on Business Technologies(IT that drives Business), TRUBA College of Engineering and Technology , Indore, Mar. 13-15, 2009.

115. "Mobile Location Based Services using XML" at geomatrix'09 in IIT Bombay, dated 29 Feb – 1 March.

116. "Optimum XML Parsing for Mobile Based Location Services" at TBTC'09 in Truba Collage of Engineering, dated 13-14 March

117. "Mixed Signal Hardware Description Languages VHDL-AMS and Verilog
AMS-Compared and Contrasted", Proc. of the 3rd National Conference; INDIACom-2009 Computing For Nation Development, Bharati Vidyapeeth's
Institute of Computer Applications and Management, New Delhi, Feb. 26 – 27, 2009.

118. "Biotelemetry based wireless patient monitoring system", Proc. of the
3rd National Conference; INDIACom-2009 Computing For Nation Development, Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi, Feb. 26 – 27, 2009.

119. "Adaptable Power Data Compression / Decompression Technique", Proc. of the 3rd National Conference; INDIACom-2009

Computing For Nation Development, Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi, Feb. 26 – 27, 2009.

120. "Small Signal and Large Signal Device Modeling using VHDL-AMS Language", Proc. of Third National IT Conference on IT Enabled Practices and Emerging Management Paradigms, Prestige Institute of Management and Research, Indore, Sept. 12-13, 2008.

121. Aparna Deo "Digital Audio Effects: Matlab Implantations" NCAFIS-08 organized by :SCSIT, DAVV, dated 16-17 August, 2008.

122. Mobile Devices with Embedded Local Intelligence and Spatial Databases for the Supply Chain Management Applications, Raj Kamal and Preeti Saxena, Nirma International Conference on Supply Chain, Jan.9-11, 2008

A.30 Write up of Future plans of the department.

A. Plan on improvement in Infrastructure:

(i) School has modern Building with beautiful garden, fully Wi-Fi, Departmental Library with 10000+ books, 24x7 Internet, Multimedia/ LCD in every classroom/Lab and full power back up in the laboratories/class rooms. Since school runs 5 courses, improvement of infrastructure is going on.

(ii) Plan is for improvement in the research activities, the department laboratories need to be strengthened. This will also help the present and future students of M.Tech./M.Sc. programmes.

(iii) Plan is for new laboratories in the broad area of Wireless Communication, Digital Communication, Advanced Embedded System, Spatial Database, RTOS to be set up.

(iv) Improvement in Placement Cell activities and Alumni Cell activities planned.

B. Plan for research activity & promotion:

(i)*MOUs and Collaborations*: In past, the department has signed MOU with I^{2}IT Pune, RRCAT Indore and CEERI, Pilani which shall help promote vigorous research activities among departmental faculty. The department plans to sign MOU with IIT, Indore.

(ii)*Research projects carried out*: Many research projects have been sanctioned to departmental faculty by different funding organization. Recently in the year 2008, UGC has granted Innovative Programme Project to start M.Tech. (Mobile Computing Technology) with seed funding of Rs. 50 lacs. In addition, UGC has also sanctioned Rs. 19 lacs under Infrastructure grant and XI Plan. This will have positive impetus to R&D Development in the department.

C. Setting up of new Laboratories: School is planning to set up new advanced laboratories:

- *Database Laboratory*
- *RTOS Laboratory*
- *Research Centre for Mobile Computing Technology*

D. Starting of New Courses: Department is planning to start new courses:

- *M.Tech. (VLSI & Microelectronics)*
- *M.Tech. (ICT)*
- *M.Tech. (5 year) along with IET, DAVV*

E. Plan on improvement in Relationship with stakeholders

Parent-teachers meet: School organizes Parent-teachers meet regularly which has definitely improved the relationship between faculty and parents. The meet was organized on 08th Sep, 2007 & on 24th Jan, 2009. Such interactions have also enabled us to know parent's expectations from us. School also plans to hold a number of teacher-students meeting (outside the regular class), and teacher–teacher meeting. Such interaction is expected to lead to improvement in the academic quality and overall environment of the School.

Alumni Activities: Last Alumni Meet was organized on 09th Jan, 2010. This enabled students to interact with their seniors. Alumni from abroad also came to attend the meet. The School maintains separate Alumni Cell in the department. The functioning of the cell spans from organizing expert lectures for soft skill development of students, to organizing Cultural Activities of department and other Co-curricular and Extra-curricular activities for the benefit of the students.

A.31 Record of any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

The SWOC analysis was done by internal or by external agency   : Internal

Five identified strengths from SWOT analysis

1. Innovative M. Tech. courses, all the courses are first of their own kind in the Country. All the M. Tech. and M. Sc courses are AICTE/ UGC approved

2. Reputation of our courses in Leading top grade companies in the field is very high (Example, Tata Motors, Crompton Greaves, Tata Elxsi, ST Microelectronics (A S.J. Thomson France Group Company), CISCO and others)

3. Very good research and text books publications

4. Excellent ICT infrastructure and power backup

5. Significant percentage of students perform one final year project in Companies and therefore the student placement is very good

Five identified weaknesses:

1. Shortage of permanent faculty needing the reliance on Visiting and contractual faculty

2. Need of more student centric teaching approach

3. Need of additional technical staff for laboratories and projects

4. Need to upgrade and Maintain very high teaching and research standards due to inadequate permanent Ph. D. and experienced faculty due to inadequate budgetary support of the State

5. Need to upgrade and maintain very high laboratory standards due to inadequate budgetary support of the State which means reliance on Student fees only for upgrading and maintenance

Five opportunities
1. New International and National level collaborations proposed to be undertaken in near future so as to enhance capacity building in knowledge creation

2. Research skill and aptitude of the faculty and the students used for new innovations.

3. Exploration of avenues for linkage of strength in VLSI, Embedded, Signal Processing and Mobile computing technology with the industry

4. Optimum use of flexibility approach to explore the unexplored domains so as to upgrade curriculum from time to time with the advent of ICT and virtual class room technology .

5. Enhanced use of animation and video lectures in class room lectures so as to build better bridge between teacher and the taught.

Five Challenges
1. To become national and global leader in VLSI, Embedded, Signal Processing and Mobile computing technology areas

2. Imbibing Entrepreneur skills so that alumni can set their own units

3. New innovations and adaptability to emerging demands of identified areas.

4. Research work on VLSI less than 20 nm technology, 4G mobile technology and high performance signal processing

5. Mobilization of knowledge creation with knowledge propagation.

A.32 Write up of efforts for Quality Sustenance and Assurance in the department

1. Periodical meetings, discussions and organization of seminars on the current topics in VLSI, Mobile, Signal Processing and Computing technology sustain quality in teaching and laboratory.

2. Full final year M. Tech projects in leading industries

3. Internet, Wi-Fi, Multimedia projection systems are used in all class rooms. Power point Presentations are available on the web site, which helped faculty to communicate the subject objectives and planning to students

4. Publications of Mobile Computing, Embedded systems and Microcontroller books

5. Feedback from stakeholders regularly taken, analyzed and monitored.

Students' feedback is taken at the end of every semester for all the subjects and for all concerned faculty members. The design of the questionnaire is as prescribed by NAAC.
For 2013-14 feedback will be taken two times at the end of the semester.
1. First Feedback taken in May, 2013.
2. Second Feedback will be taken in Dec, 2013.

The IQAC committee of the School statistically analyzes the form in a format for the feedback giving due weight to each quality related parameter. Scores obtained by each teacher for each course that he/she taught is conveyed in confidentiality to him/her.

A grievances resolution mechanism as follows: Grievance from students are mostly received and tackled through discussion with Class Representative and Class Coordinators of respective classes

6. Workshop on Quality Issues on Effective teaching and learning Processes on May, 10, 2013.

7.   Workshop on Quality issues on Paper Setting and Evaluation, on Sep, 27, 2012.

8.   Workshop on CBCS on May 15, 2013 (Lectures by Prof. Rege and her team from College of Engineering. Pune, one of oldest Engineering Institutions in the Country)

9.   Special lectures on "Fostering Excellence in Research" organized by University on January 15, 2013. List of Speakers is as follows:

(1) Prof. Priyankar Upadhyay UNESCO Chair Professor, Banaras Hindu University (BHU), Varanasi.

(2) Prof. V. K. Singh, Director, Indian Institute of Science Education and Research (IISER), Bhopal.

(3) Prof. H. Padh. Vice- Chancellor, Sardar Patel University, Vallabh Vidya Nagar, Gujarat.

CRITERION I: Curriculum Design and Development

1.1.1 Academic Year of Revision, Curriculum of Each Course, Objective and Course plans of each paper taught in the course

Whether uploaded on website

Yes ☑   No ☐

1.1.1.A Eligibility for admission to each course

1.1.1.B   Whether reflects Vision and mission reflection

Yes ☑   No ☐

1.1.1C Write on reflection of vision and mission

- Curriculum Updation and Revision done every semester
- Last done in June 2013
- Course Plans available on website

View of experts from industry and academia and alumni on curriculum is taken regularly

1.1.2 Details of process followed in last revision of Curriculum

A. Need Assessment

Based on the feedback received from Industry and peers

B. Faculty involved in curriculum design (List of members)

Dr. Raj Kamal

Dr. Abhay Kumar

Dr. S. Katiyal

Ms. P. Umale

Dr. Manju K. Chattopadhyay

Ms. Kirti Panwar

C. Records of Departmental Committees/Board approvals of the designed curriculum

Record is kept in a file no. 1.1.2C

D. Records of External Experts Opinion of the designed curriculum

Record is kept in a file 1.1.2D

E. Records of External Experts Feedback of the designed curriculum

Record is kept in a file 1.1.2E

F. Records of Student Feedback opinion on the existing curriculum

Yes, available in file no. 1.1.2.F

G. Records of Syllabi of National tests, Eligibility Tests and Examinations for example, GATE, NET, Service Commissions, National Councils, for the each curriculum, if any,

Yes, available in file no. 1.1.2.G

1.1.3   Detailed write up out each course in reference to

* Employability
  Our courses are technologically intensive and job oriented. This has resulted into nearly 100% placement of our students.

* Innovation
  One of the M Tech course M Tech Mobile computing Technology was sanctioned by UGC in 2008 under Innovative Programme. Remaining two courses are also in the front line area of electronic technology.

* Research
  As per the curriculum of M Tech course, student need to carry ou two semesters for their project work. This project work is usually research oriented. Like wise, M Sc students also carry out research projects in their final semester.

1.1.4   Records of UGC/AICTE/National Council, Regulating bodies Guidelines for the development and restructuring the curriculum, if any,
Department Faculty members, if any, involved in leading any curricular reform which has created a national impact?

The M.Tech. Courses are governed by AICTE guidelines. The necessary documentations are kept in record.

1.1.5   A. Record of Interactions, Opinions and Feedbacks for the designed curriculum with External Research Bodies: Yes, available in file
B. Records of Interactions, Opinions and Feedbacks for the designed curriculum with Industrial Experts, particularly in case of Professional Courses: Yes, available in file
C. Records of Interactions, Opinions and Feedbacks for the designed curriculum with Stake Holders, such as eminent personalities, Visitors to the departments, parents Yes, available in file
D. Records of Alumni opinion on the existing curriculum (may be taken in an Alumni Register) Yes, available in file

1.1.6   List of Department Courses which are also introduced in University affiliated colleges also. List of colleges who introduced those courses -NA-

1.1.7   Details of additional skill-oriented programmes designed for the colleges, Employees, Faculty relevant to regional needs -
       Skill oriented courses are in the pipeline

1.2   Academic Flexibility :

1.2.1   List of Courses taught in Department on campus

       ∗ Overseas programmes offered on campus : NIL

       ∗ Programmes available for colleges to choose from : -Nil-

1.2.2   Records on the following provisions with reference to academic flexibility

      a. List of Core/ Elective options

      List is kept in a file containing detailed syllabi of courses

      b. List of Enrichment courses: NIL

      c. List of Courses offered in modular form: NIL

      d. List of courses/papers with Credit accumulation and transfer facility: NIL

      e. Details of Lateral and vertical mobility within and across programmes, courses and disciplines: NIL

1.2.3   Records of International students

      No international student has taken admission since last five years

1.2.4   Records of Courses developed targeting international students, if any

      Not Applicable

1.2.5   Record of dual degree and twinning programmes

      Such programmes are not offered.

4.2.6   A. List of students, Admission Process, Fee structure of each programme

List of admitted students since last five years and the fee structure is kept in the file.

      B. Record of Teacher qualification and salary parity and differences (if any) at par with the aided programmes

These files are kept centrally at Establishment section of the univ.

1.2.7   Operational details of distance Education Course in the department (if applicable)

      Not Applicable

1.2.8   Details of Choice Based Credit System (CBCS)

      Not Available at present in M.Tech. Courses Available only in

M.Sc.

1.2.9   Records of Departmental Academic Calendars of each semester

      Yes, available on the department's web page and also a copy is kept in file

1.2.10   Records of Inter-disciplinary programmes, Name of interdisciplinary program and details of students undertaken those programmes.

      NONE

1.3   Curriculum Enrichment

1.3.1   A. Record of academic years in which each of the courses was revised

The courses are revised annually with approval from Board of Studies. The last revision was done in June, 2013

B. Records of review, up-gradation,

Kept in file

C. Records of social relevancy,

Specialization papers of our courses lead to application of electronics gadgets towards agriculture such as microcontroller based sensor networks, city transport such as GPS and GIS enabled automobiles, and, mobile education such as educational games and programs developed for mobile devices.

D. Records of job orientation

Available in a file marked 'Placement'

E. Records of knowledge intensive nature of each course

Many MNCs contact us/HOD for recruitment /Project placement of our students directly in a specific domain of their activity.These email correspondences are kept in a file.

F. Records of meeting the emerging need of students

Many workshops and one conference have been organized by the department which has provided an opportunity for experts of electronics across the country to gather in our department. We have pondered over the issue of emerging need of students which is kept in the minutes of those events.

G. Records of meeting the emerging need of stakeholders

We hold parent, alumni meetings. The records are available in file.

1.3.2   Details of the last four years during which how many new programmes at UG and PG levels were introduced

* Inter-disciplinary –Nil-
* programmes in emerging areas in
  ▪ M.Tech (Mobile Computing Technology) started in 2008
  ▪ M.Tech (Spatial Information Technology) started in 2007

1.3.3   A. Details of strategies adopted for the revision of the existing programmes

The strategies includes

a. Peer to peer interaction

b. Opinion sought from visiting experts in the department

c. Our own understanding and need of latest technology

B. Percentage of courses underwent a syllabus revision in last four years 100%

1.3.4   A. Details of Value-added courses offered

All courses are as per today's technological needs. Our students are well taken in the market

B. Details of these courses access to student

Details are available to prospective students by website and brochures distributed at the time of admission.

1.3.5   Details of higher order skill development programmes in consonance with the national requirements (for example, innovative M. Tech. /M.E. courses, CCNA, CCSP, ….)

All our M.Tech. courses cater to market needs and develop the skills of students in the fields of GIS, Embedded systems, Mobile computing, JAVA, DSP, VLSI design.

1.4   Feedback System

1.4.1   A. Copy of Feedback form to obtain feedback from students/student class representatives regarding the curriculum Kept in the file

B. Details of action and use of on feedback from students

Feedback is taken at the end of each semester. The feedback is analysed and report is generated. HOD does the counseling of teachers for improvement

1.4.2   A. Method used for eliciting feedback on the curriculum from national and international faculty: Through emails, kept in file

B. Conducting webinars None

C. Curriculum development Workshops Internally done

D. Curriculum development online discussions: Through online groups

E. Impact of Workshop and discussions   Feedback is taken and analysed

1.4.3   Specify the mechanism through which affiliated institutions give feedback on curriculum enrichment and the extent to which it is made use of. NA

1.4.4   What are the quality sustenance and quality enhancement measures undertaken by the Department in ensuring the effective development of the curricula?

The efforts for the above includes

    a. We strictly follow academic calendar
    b. We ensure punctuality and regularity of classes
    c. Exam are conducted on time
    d. Results are declared in time
    e. Grades are declared after showing evaluated copies to students for transparency

1.4.5 Any other information regarding Curricular Aspects which the UTD would like to include.

Academic system is purely internal including continuously evaluation which includes many tests, seminars, quizzes in periodic interval. Teacher of subject is also the paper setter of the subject. This ensure better academic quality.

2.1   Student Enrolment and Profile

2.1.1   Copy of Advertisements and website info for ensuring publicity and transparency in the admission process

   Kept on the website at IT centre

2.1.2   A. Write up details of the process of admission put in place by the department

. B. List of the criteria for admission: (*e.g.*: (i) merit, (ii) merit with entrance test, (iii) merit, entrance test and interview, (iv) common entrance test conducted by state agencies and national agencies (v) other criteria followed

   MSc Courses: Merit basis

   M.Tech. Courses: On basis of GATE score

2.1.3   Details of admission process in the affiliated colleges if department is monitoring the same. –NA-

   2.1.4   Student profile analysis (2012-13)
      Urban 75%
      Poor 25%
      General 50 %
      Category 50%
      Girls 10%
      Boys 90%
      SC/ST 10%

2.1.5   Strategies adopted to increase/improve access for students belonging to the following categories:
   * SC/ST
   * OBC
   * Women
   * Persons with varied disabilities
   * Economically weaker sections
   * Outstanding achievers in sports and other extracurricular activities
      Departmental follows policy of University and MP government in this regard

2.1.6   Number of students admitted in department in the last four academic years:

Categories	Year 2009-10		Year 2010-11		Year 2011-12		Year 2012-13		Year 2013-14	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
SC	6	4	5	5	11	2	07	00	6	4
ST	2	0	0	2	0	0	04	00	1	0
OBC	4	4	12	4	6	3	09	02	12	5
General	46	26	47	13	44	8	49	14	29	16
Total	58	34	64	24	55	13	69	16	48	25

2.1.7   A. Record of demand ratio for the various programmes of the university departments

> MSc Almost all the students who apply and satisfy the minimum criteria are admitted
> M.Tech. Courses: 600:60

B. If yes then highlight the significant trends explaining the reasons for increase/decrease.

Programmes	Number of applications	Number of students admitted	Demand Ratio
UG			
PG	550	80	55:8
Integrated Masters			
M.Phil.			
Ph.D.			
Integrated Ph.D.			
Certificate			
Diploma			
PG Diploma			
Any other (please specify)			

2.1.8   A. Record of any programme discontinued/staggered in the last four years?
B. If yes, write-up of the reasons.
> Nil

2.1.8   Record of Admissions (2013-14)

Programmes	Total Number of admissions	Number of 1st division pass students in qualifying	Number of 2nd division pass students in qualifying	Entrance test Marks% (Min)
UG	-	-	-	-
PG	23	21	02	-
Integrated Masters	-	-	-	-
M.Tech.	50	50	00	-
Ph.D.	-	-	-	-
Integrated Ph.D.	-	-	-	-
Certificate				
Diploma				
PG Diploma				
Any other – Pre Ph.D. Course	-	-	00	40%

Record of Admissions (2012-13)

Programmes	Total Number of admissions	Number of 1st division pass students in qualifying	Number of 2nd division pass students in qualifying	Entrance test Marks% (Min)
UG	-	-	-	-
PG	25	20	05	-
Integrated Masters	-	-	-	-
M.Tech.	60	60	00	-
Ph.D.	-	-	-	-
Integrated Ph.D.	-	-	-	-
Certificate				
Diploma				
PG Diploma				
Any other – Pre Ph.D. Course	12	12	00	40%

2.2   Catering to Diverse Needs of Students

2.2.1   A. Record of organization of orientation/ induction programme for freshers

Yes , available in the file

B. Details such as the duration, issues covered, experts involved and mechanism for using the feedback in subsequent years.

Yes , available in the file

2.2.2   A. Record of analysis of the "differential requirements of the student population" after admission and before the commencement of classes

B. Record of key issues identified and addressed

2.2.3   A. Record of bridge/remedial/ add-on courses Departmental faculty conducts remedial classes for preparation of competitive exams like NET and GATE during winter & summer vacations

B. Time table and details of the courses offered in the department-wise for all courses: Yes , available in the file

2.2.4   A. Record of the academic growth of students from disadvantaged sections of society, economically disadvantaged, physically handicapped, slow learners, etc

Individual faculty identifies slow learners in his/her course and then deals with individual accordingly

B. Main findings

Most of the students are benefitted by the extra efforts and their overall performance is improved.

2.2.5   Record of identification and responses to the learning needs of advanced learners Individual faculty identifies advanced learners in his/her course and then deals with individual accordingly.

2.3   Teaching-Learning Process

2.3.1   Records of Plan and organisation of the teaching, learning and evaluation schedules (teaching plan, evaluation schedules and methods, etc.)

Yes, available in the file number 2.3.1

2.3.2 A. Record and website info of providing course outlines and course schedules prior to the commencement of the academic session

Yes, available in the file 2.3.2

B. Methods used for effective implementation

HOD monitors the implementation meticulously

2.3.3   A. Record of difficulties in completing the curriculum within the stipulated time frame and calendar

No difficulty normally arises.

B. Write up of the challenges encountered and the departmental measures to

overcome these.

        If any due to say medical reasons of a faculty, HOD resolves it with the help of Course Coordinators.

2.3.3   A. Record of student-centric learning activities: Feedback and reports of the activites are kept.

        B. List of participatory learning activities which are adopted by the faculty that contributes to holistic development and improved student learning, besides facilitating life-long learning and knowledge management.: Quizzes, multiple choice based questions, discussions, seminars are arranged.

2.3.4   List, record with photographs of activities such as invited experts/people of eminence to deliver lectures and/or organize seminars for students
        Yes, available in CDs and albums

2.3.6   Record of Encouragement to blended learning by using e-learning resources
        Copies of ppts available

2.3.7   Record of facilities such as virtual laboratories, e-learning, open educational resources and mobile education used by the faculty for effective teaching CDs available in the Library

2.3.8   Record of activities of designated group among the faculty to monitor the trends and issues regarding developments in Open Source Community and integrate its benefits in the university's educational processes

2.3.9   Record of steps taken to convert traditional classrooms into 24x7 learning places
        24x7 internet facility is provided to the students

2.3.10   A. Record of actions taken to avail the services of counsellors/mentors/advisors for each class or group of students for academic, personal and psycho-social guidance
        Course Coordinators and mentors are appointed for each course. Registers are maintained by each mentor for each group regarding guidance. Counseling given.
        B. Details of the process and the number of students who have benefited.
        Time slots in Time table of second half of Saturday are assigned for this purpose.

2.3.11   A. Record of innovative teaching approaches/methods/practices adopted/put to use by the faculty during the last four years?
        Hard Copies of powerpoint presentations prepared by the faculty is available with respective faculty.
        B. Write up of improvement in learning by innovative methods   ICT techniques

used, quizzes , MCQs used to evaluate the students.

C. Record of recognition to the faculty due recognition for innovation in teaching

1. Dr. Raj Kamal
   - Invited Expert Member on Board of Studies in Information Technology, Sambalpur University, Orissa, 2013
   - Recognition as reviewer for prestigious Research Journal "IEEE Transactions on Very Large Scale Integration Systems", 2011
   - Recognition as Fellow Indian Electronics and Telecommunication Engineers Society

2. Dr S. Katiyal: serving as Director CDC
3. Dr. A. Kumar: Dean of Engineering Sciences, served as referee for IEEE Publications and other Journals, Served as Programme Committee Member to many conferences.
4. Ms. Pratibha Umale: Serving as member of Board of Studies- Faculty of Engineering Sciences.
5. Dr. Manju K. Chattopadhyay: Serving as member of Board of Studies – Holkar Science College, Reviewer for Elsevier journal, International Journal for computing, other conferences

2.3.12 Record of actions for creating e a culture of instilling and nurturing creativity and scientific temper among the learners: Google groups of students are made batch wise. Teachers mail the assignments, notices and other relevant information to the students on these groups

2.3.13 A. Record of student projects (if mandatory in each of the learning programme) Maintained in departmental library'register. The project reports are also submitted in hard as well as soft copy in the departmental library.

B. Number of projects executed within the university

MSc 100%

M.Tech. 5%

C. Names of external institutions associated with the University for Student Project Work

Academic institiutes such as IIT Bombay, IIT Indore, IIT Kharagpur and Companies such as, Tata Elexi, ST Microelectronics, CG Corel, Infinum, Impetus, Aquilonios etc

D. Role of faculty in facilitating such projects: Faculty guide the students who wish to pursue their Major projects in the department.

2.3.14 A. Record of shortfall in qualified faculty to meet the requirements of the

curriculum

   B. Record of actions for shortfall supplementation: Qualified Visiting faculty are appointed so that teaching and learning doesn't suffer.

2.3.15   Number of percentage of faculty enabled to prepare computer-aided teaching/ learning materials 80%

2.3.16   A. Record of Student feedback for evaluation of teachers by the students

Kept in a feedback file

B. Record of Alumni feedback for evaluation of teachers by the students

Kept in Alumni file

C. Methods used and Impact of the evaluation feedback used to improve the quality of the teaching-learning process: The concerned faculty is given counseling and advice on scopes of improvement by the head of the department.

2.4   Teacher Quality

2.4.1   Record of how the plan and management of human resources was done to   meet the changing requirements of the curriculum

a. Faculty 's participation in various training subjects in relevant subject of curriculum

b. Participation is done during vacation period so that normal schedule is not disturbed

c. In-house training of the faulty has been arranged and organized tomeet the challenging requirement of the curriculum

2.4.3   Diversity in its faculty recruitment

Department / School	% of faculty from the same university	% of faculty from other universities within the State	% of faculty from universities outside the State	% of faculty from other countries
School of Electronics	80%	10%	10%	0

2.4.4   A. List of qualified faculty appointed for new programmes/emerging areas of study (Bio-technology, Bio-informatics, Material Science, Nanotechnology, Comparative Media Studies, Information Technology, Diaspora Studies, Forensic Computing, Educational Leadership, etc.)?

Nil-

   B. Number of faculty members appointed to teach new programmes during the last four years

Contractual appointment in Sep 2010 : 06 numbers

July 2013: 03 numbers

2.4.5 List of academic recharge and rejuvenation of teachers

    A. List of faculty availed and provided research grants by the University Nil

    B. List of faculty availed and on study leave Nil

    C. List of faculty nominated to national/international conferences/seminars, in-service training, organizing national/international conferences etc.

Conference in 2010 organizing committee etc list table

2.4.7 List of faculty received awards / recognitions for excellence in teaching at the state, national and international level during the last four years –Nil-

2.4.8 List of faculty underwent staff development programmes during the last four years (add any other programme if necessary)?

Academic Staff Development Programmes	Number of faculty
Refresher courses	3
HRD programmes	NIL
Orientation programmes	3
Staff training conducted by the university	9
Staff training conducted by other institutions	-
Summer / Winter schools, workshops, etc.	12

2.4.9 Percentage of the faculty have

    ∗ been invited as resource persons in Workshops / Seminars / Conferences organized by external professional agencies =   20%

    ∗ participated in external Workshops / Seminars / Conferences recognized by national/ international professional bodies =   80 %

    ∗ presented papers in Workshops / Seminars / Conferences conducted or recognized by professional agencies =   20 %

    ∗ teaching experience in other universities / national institutions and other institutions =   60 %

    ∗ industrial engagement =   0 %

    ∗ international experience in teaching =   10 %

2.4.10 List and details of organization of academic development programmes (*e.g.*: curriculum development, teaching-learning methods, examination reforms, content / knowledge management, etc.) for its faculty aimed at enriching the

teaching-learning process

At the end of every semester an in-house workshop dedicated to teaching learnig process is organized where student feedback is also discussed.

2.4.11   A. List of faculty encouraged

* Mobility of faculty between universities for teaching

1. Dr. S. Katiyal served as Associtae professor at ABIIIT Gwalior, during 2006-2007

* Faculty exchange programmes with national and international bodies NIL

B. Record of schemes helping in enriching the quality of the faculty by such mobility and faculty exchanges –Nil-

2.5   Evaluation Process and Reforms

2.5.3   A. Record of time taken by the department for declaration of examination results each semester Approximately 2 weeks

B. Record of means adopted for the mode / media adopted for the publication of examination results (Website, SMS, email, etc.). Results declared and uploaded on departmental Webpage

2.5.4   A. Record of ensuring transparency in the evaluation process : Evaluated exam copies, test copies etc. are shown to the students before finalizing the grades

B. Measures taken to ensure confidentiality : Result handling is done by the course coordinators under strict supervision of Centre Superintendent

C. Record of the Pre-examination processes – Examination Time table generation, student list generation, Invigilators, Attendance sheet, Records are kept with exam coordinator and respective course coordinators

D. Results of students course wise and its analysis Sample copy is attached below:

M.Tech. Embedded Systems
Batch 2011-2013
Provisional Result Semester-IV

S.No.	Roll No.	Name of Student	SGPA I (36)	SGPA II (36)	SGPA III (20)	SGPA IV (20)	CGPA (112)
1	11MTES01	ALEKH JAIN	8.83	7.56	7	8	7.95
2	11MTES03	AMARNATH TIWARI	8.72	7.56	9	9	8.45
3	11MTES04	AMIT RATHORE	8.19	8.22	7	8	7.96
4	11MTES05	BHUPENDRA SINGH	8.56	7.67	9	9	8.43
5	11MTES06	DEVENDRA CHAKRAWARTI	8.22	7.94	8	10	8.41
6	11MTES07	JITENDRA PATIDAR	7.67	6.89	7	8	7.36
7	11MTES08	Ms. KAVITA KOLHE	7.92	7.22	7	8	7.54
8	11MTES09	Ms. KHUSHBU SINGH	9.19	8.89	9	9	9.03
9	11MTES10	MANGILAL CHOUHAN	8.44	7.33	9	10	8.46
10	11MTES11	MANVENDRA DUBEY	5.67	6.44	7	WH	WH
11	11MTES12	PINTU	7.47	7.11	8	8	7.54
12	11MTES13	PRADEEP SINGH JHALA	8.36	7.11	6	9	7.65
13	11MTES14	PRATIK PUROHIT	8.33	7.22	8	10	8.21
14	11MTES15	PRIYANK SUNHARE	7.94	7.17	9	10	8.25
15	11MTES16	Ms. SANYUKTA MAITI	8.03	7.61	9	10	8.42
16	11MTES17	SATISH DWIVEDI	7.11	6.22	6	8	6.79
17	11MTES18	SHAH KRISHNA MAHENDRA BHAI	9.25	8.28	7	10	8.67

WH: Withheld

MTech (Spatial Information Technology) [2011-13]
Provisional Result

Roll No.	Name of student	SGPA-I (36)	SGPA-II (36)	SGPA-III (20)	SGPA-IV (20)	CGPA	GGPA	%	DIVISION
11MTSIT01	ABHAY PAWAR	8.03	8.11	8.00	10.00	8.40	8.40	78.68	First with Dist.
11MTSIT02	ANKIT DUBEY	7.19	7.11	6.00	7.00	6.92	6.92	66.23	First
11MTSIT03	ANSHUL JAIN	8.00	8.00	7.00	10.00	8.18	8.18	76.80	First with Dist.
11MTSIT04	ASHWANI K. NIKHRE	7.33	7.56	8.00	9.00	7.82	7.82	73.80	First
11MTSIT05	JAYDEO KUMAR DHARPURE	7.97	7.56	8.00	8.00	7.85	7.85	74.03	First
11MTSIT06	KAPIL	7.61	8.17	9.00	9.00	8.29	8.29	77.70	First with Dist.
11MTSIT07	MANOJ LOKARE	7.92	8.28	6.00	8.00	7.71	7.71	72.83	First
11MTSIT08	Ms. MEGHAVI PRASHNANI	8.81	8.44	9.00	10.00	8.94	8.94	83.18	First with Dist.
11MTSIT09	NISHANT KHARE	6.11	6.72	7.00	9.00	6.98	6.98	66.75	First
11MTSIT10	RANJEET K PASWAN	6.11	5.67	7.00	9.00	6.64	6.64	63.90	First
11MTSIT11	SATYENDRA BELWANSHI	5.83	6.67	6.00	8.00	6.52	6.52	62.85	First
11MTSIT12	SHIVRAM SINGH KUSHWAH	6.31	6.06	7.00	8.00	6.65	6.65	63.98	First
11MTSIT13	SWAPNIL JOSHI	8.97	9.06	8.00	10.00	9.01	9.01	83.78	First with Dist.
11MTSIT14	UMESH CHOUDHARY	7.39	7.67	6.00	7.00	7.16	7.16	68.25	First

M.Tech (Mobile Computing Technology) Batch: 2011-13
Provisional Result

Sr. No.	Roll No.	Student's Name	SGPA I	SGPA II	SGPA III	SGPA IV	CGPA	GGPA	Percentage(%)
1	11MTMCT01	Mr. ABHISHEK KORI	7.22	7.22	7.00	10.00	7.68	7.68	72.61
2	11MTMCT02	Mr. ADI SURENDRA MOHANRAJU M	7.78	7.39	8.00	8.00	7.73	7.73	73.03
3	11MTMCT03	Mr. ASHISH KUMAR GUPTA	7.42	6.17	7.00	8.00	7.04	7.04	67.24
4	11MTMCT04	Mr. ASHISH MORE	5.89	5.50	6.00	9.00	6.34	6.34	61.36
5	11MTMCT06	Mr. CHETAN KUMAR SURYESH	7.06	6.94	6.00	9.00	7.18	7.18	68.41
6	11MTMCT07	Mr. DHEERAJ PATIDAR	8.25	7.78	8.00	8.00	8.01	8.01	75.38
7	11MTMCT08	Mr. DIGAMBER NATH TIWARI	6.22	6.00	5.00	8.00	6.25	6.25	60.60
8	11MTMCT09	Ms. DURGESH RATHAUR	8.89	8.89	9.00	9.00	8.93	8.93	83.11
9	11MTMCT11	Mr. LOKESH SURAGE	7.92	6.83	8.00	9.00	7.78	7.78	73.45
10	11MTMCT12	Mr. MALAY CHITRANSHI	8.53	8.61	9.00	9.00	8.72	8.72	81.35
11	11MTMCT13	Ms. NEELAM SONI	8.33	8.33	8.00	7.00	8.04	8.04	75.64
12	11MTMCT15	Mr. PATIL PAVAN KUMAR	6.53	7.50	7.00	8.00	7.19	7.19	68.50
13	11MTMCT16	Ms. PRIYANKA RAGHUWANSHI	9.03	9.11	9.00	8.00	8.87	8.87	82.61
14	11MTMCT17	Mr. PUNIT PARAG JAIN	7.33	7.11	8.00	8.00	7.50	7.50	71.10
15	11MTMCT18	Mr. RAHUL AGRAWAL	8.14	8.28	7.00	9.00	8.13	8.13	76.39
16	11MTMCT19	Mr. RINKESH KUMAR JAIN	9.03	8.83	9.00	10.00	9.13	9.13	84.79
17	11MTMCT20	Ms. SHAIL DIXIT	8.56	8.67	8.00	10.00	8.75	8.75	81.60
18	11MTMCT23	Mr. SUSHANT KHARE	8.11	8.22	9.00	10.00	8.64	8.64	80.68
19	11MTMCT24	Mr. UNDALE HEMANTRAJ KRISHNADAS	5.44	5.89	9.00	9.00	6.86	6.86	65.72
20	11MTMCT25	Mr. VIKAS KUMAR	7.22	7.17	7.00	7.00	7.13	7.13	67.99

School of Electronics, DAVV, Indore
MSc(Electronics & Communication) Batch 2011-13
Provisional Result Fourth Sem

Roll No.	Student's Name	SGPA 1	SGPA 2	SGPA 3	SGPA 4	CGPA 4
11ECN01	ADITYA KARN	8.35	7.12	8.21	8.85	8.08
11ECN02	AMIT RANJAN	7.59	7.59	7.79	8.31	7.79
11ECN05	OZA JAY ATULBHAI	7.76	8.18	7.21	8.38	7.89
11ECN06	MANISH GOYAL	8.35	7.94	7.79	9.04	8.25
11ECN07	MEHUL PRAFULBHAI MAKWANA	6.94	7.12	5.14	7.96	6.80
11ECN08	MOHD. SHAHID GOURI	6.71	5.53	5.86	5.85	6.00
11ECN10	MUNISH MOHAMMAD	7.35	7.41	6.86	8.38	7.48
11ECN11	NEHA DESHBHARTAR	6.88	6.88	6.50	7.58	6.94
11ECN12	NEHA GEHLOT	4.82	3.82	4.57	5.42	4.61
11ECN13	PARAS TALWAR	8.53	7.65	7.50	8.12	7.96
11ECN14	POOJA BOHARA	8.88	8.47	8.36	9.54	8.79
11ECN15	PRABHAT KUMAR SINGH	6.94	6.24	6.07	7.50	6.66
11ECN16	PRITESH SHARMA	8.59	7.53	6.71	8.42	7.83
11ECN17	PRIYANKA PANCHOLI	8.71	8.29	8.00	9.69	8.64
11ECN18	SAJID KHAN	8.47	7.88	7.86	10.00	8.49
11ECN19	SOURABH JAIN	6.12	5.71	5.43	7.27	6.09
11ECN22	VINAYAK SHARAN	9.12	8.06	8.57	9.12	8.70
11ECN23	YOGESH CHAVHAN	7.29	7.12	6.29	8.58	7.29

Msc Electronics
Batch 2011-13
Provisional result

Roll No.	Student's Name	Enrolment No.	SGPA	SGPA 2	SGPA 3	SGPA 4	CGPA
11ELE01	MANISH GUPTA	DE/11/79	9.59	8.82	9.36	9.23	9.25
11ELE02	NIKHIL KUMAR SHAR	DE/11/80	8.24	7.53	7.93	8.85	8.10
11ELE04	RAHUL MITTAL	DE/11/1055	8.53	8.06	7.29	8.31	8.07

2.6.   Student Performance and Learning Outcomes

2.6.1   A. Write up of articulation of its Graduate Attributes of the department: Course curriculum is highly skill oriented, technology intensive and meets the demand of the market.

B. Record of facilitation of monitor the implementation and outcome Placement cell interacts with the prospective employers and monitors the student performance

2.6.2   A. Record of learning outcomes for its academic programmes: For M.Tech courses specialized workshops such as mobile application development was organized in 2012. The students feedback demonstrates better learning facilitations.

B. Record of making students and staff are made aware of these: These events are made public on our website for the benefit of students and staff.

2.6.3   Write up of department teaching, learning and assessment strategies structured to facilitate the achievement of the intended learning outcomes: Teaching learning and assessment are well documented in Ordinance 31 of the university. The department strictly adheres to it.

2.6.4   Record of collection and analysis of data on student learning outcomes and use it to overcome the barriers to learning : Every semester weak students are identified based on their SGPA/ CGPA and suitable remedial classes are arranged.

2.6.5   Write up of new technologies deployed by the department in enhancing student learning and evaluation and how does it seek to meet fresh/ future challenges The entire building has been made wi-fi enabled so that students can access online resources 24X7 without having barriers of being in laboratories.

2.6.6 Any other information regarding Teaching, Learning and Evaluation which the department would like to include.   Nil

CRITERION III: RESEARCH, CONSULTANCY AND EXTENSION
        III.1 Year-wises Publications in the department:

123.   A.Kulkarni and A.Kumar, "Adaptive Backstepping control for uncertain underactuated systems with input constraints", Proceedings of Science Direct International Conference on Modeling Optimization and Computing, pp. 1001-1010, 2012.

124.   A.Kulkarni and A.Kumar, "Dynamic Recurrent Wavelet Neural Network Observer Based Tracking Control for a Class of Uncertain Nonaffine Systems", International Journal of Intelligent Systems and Applications, Vol.11, pp. 53-61, 2012.

125.   Suvarna Joshi and Abhay Kumar, Correlation filter based Fingerprint Verification System, International conference on VLSI ,communication and instrumentation,19–22, Kottayam, Kerala, India, April 2011.

126.   Suvarna Joshi and Abhay Kumar, Wavelet Based Rotation Invariant Fingerprint Recognition, CiiT International Journal of Digital Image Processing, March 2012.

127.   Suvarna Joshi and Abhay Kumar, Feature extraction using DWT with application , to offline signature identification,,ICSIP 2012, Lecture Notes in Electrical Engineering, Vol. 222, 2013, pp 285-294.

128.   Suvarna Joshi and Abhay Kumar, Bimodal Biometrics Authentication system using iris and offline signature, International Conference on Human Computer Interaction, accepted.

129.   Manju K. Chattopadhyay, Raj Kamal, Emerging Technologies in Random Access Memories, International Journal of Advances in Engineering Science and Technology, 2(1), pp.84-88, 2013

130.   Digital Systems Principles and Design, Raj Kamal – A Text Book, http://www.pearsoned.co.in/Raj Kamal www.pearsoned.co.in/Raj Kamal Pearson Education, Anna Univ. Edition, 2012

131.   Switching Theory and Logic Design, Raj Kamal - A Text Book, http://www.pearsoned.co.in/Raj Kamal www.pearsoned.co.in/Raj Kamal Pearson Education, JNTUniv, Kakinada Edition, 2012,

132.   Mobile Computing, Raj Kamal, Oxford University Press, 1st Edition, Oct. 2007; 2nd Edition, 2012

133.   Microcontrollers. – Architecture, Programming, Interfacing and System Design,, Raj Kamal- A Text Book, http://www.pearsoned.co.in/Raj Kamal www.pearsoned.co.in/Raj Kamal Pearson Education, Singapore, First Edition and First Print, 2005, Translation in Mandarin (Chinese) by Pearson, Taiwan 2009, 2nd Edition, 2012

134.   Design of Data Acquisition System, Pratibha Umale, LAP LAMBERT Academic Publishing, Germany

135.   Self Learning and Evaluation System using Windows Mobile, Kirti

Panwar, Lambert Academic Publishing (2011-08-18) (ISBN-13 : 978-3-8454-3605-0)

International Journal

136.   Security Orchestration at Process Level, International Journal of Computer Science, Information Technology, & Security (IJCSITS) Vol2, No.3 June 2012,

137.   Service Integration towards Security Orchestration, Aradhana Goutam, Raj Kamal, and Maya Ingle, Journal of Procedia, Technology, (ISSN: 2212-0173) Elsevier, 2012 (Accepted) [International Conference on Information and Technology (ICIET'12, Mumbai, 20th Jan 2012]

138.   A Kulkarni and A Kumar, "Dynamic Recurrent Wavelet Neural Network Observer Based Tracking Control for a Class of Uncertain Nonaffine Systems" International Journal of Intelligent Systems and Applications (IJISA), Accepted, 2012.

139.   S Joshi and A Kumar, "Wavelet Based Rotation Invariant Fingerprint Recognition", CIIT International Journal of Digital Image Processing (Accepted), 2012

140.   An efficient Deadlock-free NARCO based fault tolerant routing algorithm in NoC Architecture", The International Journal of Emerging Technology and Advanced Engineering(IJETAE) (online), approved by National Science Library (NSL), National Institute of Science Communication And Information Resources (NISCAIR), Council of Scientific and Industrial Research, New Delhi, India, Vol. 2 , Issue 2, Feb. 2012, ISSN 2250–2459.

141.   Performance comparison of XY,OE and DyAd routing algorithm by Load Variation analysis of 2-Dimensional Mesh topology based Network-on-chip", BIJIT; "BVICAM's International Journal of Information technology" having ISSN 0973-5658.

142.   Reliability issue in QCA based Serial Subtractor , Nano Sci Tech 2012, Panjab University, Chandigarh, Feb 15-18,2012.

143.   Study of Autorun Worm: An analytical approach towards Orchestrator model for   system security, Maya Ingle, Raj Kamal , Aradhana Goutam," CIT Journal Research, Vol-1,   issue-4,Dec-Feb 2011,page no 83-88

144.   An intelligent multimedia interface for fuzzy logic based inference in crops, Savita Kolhe, Raj Kamal, Harvinder S. Saini and G. K. Gupta, Expert System with Applications 38:12 (2011) pp. 14592-14601. (5-Year Impact Factor = 3.162)

145.   Rule Promotion: A new fuzzy logic approach for drawing inferences in Rule Based expert System, Savita Kolhe, Raj Kamal, H.S. Saini ,and G.K.Gupta, www.isas.org.in/isas Journal of Indian Society of Agricultural Statistics, 65(3) (2011) 359-365 [NAAS Impact Rating 5.1]

146.   Quantitative Analysis of Spin hall effect in Nanostructures", accepted for publication in BIJIT, "BVICAM's International Journal of Information Technology" " having ISSN 0973-5658.

147.   Performance Analysis of variation in Power Consumption and Frequency on different topologies of Ring VCO in 70 nm CMOS

technology", accepted for publication in BIJIT, "BVICAM's International Journal of Information Technology" having ISSN 0973-5658.

148. "Low Power with improved noise margin for DOMINO CMOS Nand Gate", accepted for publication in International Journal for Computational Engineering Research.

149. Exploring Alternative Topologies for Network-on-Chip Architectures, BIJIT BVICAM's International Journal of Information Technology", ISSN 0973-5658, July-Dec'2011, Vol. 3 No.3.

150. "LSCMA Blind Adaptive Algorithm with Comparison of Optimization Capabilities for Smart Antenna Systems", IACSIT International Journal of Engineering and Technology (IJET), ISSN: 1793-8244 (Online Version); 1793-8236 (Print Version), International Association of Computer Science & Information Technology Press, Singapore.

151. "Quantitative analysis of Spin hall effect in nanostructures", 26th International Conference on Low Temperature Physics (LT26), Beijing, China, August 10-17, 2011.

152. "Ultra Compact Low Power Low Voltage Current Starved VCO in 32nm CMOS Technology", 2011 International Conference on Modeling, Simulation and Visualization Methods (MSV'11), , USA, July 18-21, 2011.

153. "Investigation of Power Management and Effective Routing Algorithms for NoC Design", 2011 International Conference on Wireless Networks (ICWN'11), USA July 18-21, 2011.

154. "Comparative Analysis of Two Topologies of Ad Hoc on Demand Distance Vector Protocol Under Black Hole Attack", 2011 International Conference on Wireless Networks (ICWN'11), USA, July 18-21, 2011.

155. "CMA Blind Adaptive Beam-forming Algorithm with Comparison of Optimization Capabilities for Smart Antenna Systems", 2011 International Conference on Wireless Networks (ICWN'11), USA, July 18-21, 2011.

156. S Joshi and A Kumar, "Correlation Filter based Fingerprint Verification System", International conference on VLSI ,communication and instrumentation, 19–22, Kottayam, Kerala, India , April 2011

157. S Joshi and A Kumar, "Wavelet Based Rotation Invariant Fingerprint Recognition", International journal of computer applications, 2011.

National Journal

158. "Multi level logic and its applications to Interface with Digital system", The Indian Journal of Technical Education (IJTE) ISSN 0971-3034 pp. 327-331.

159. "Low Power High Speed with Improved Noise Margin For Domino CMOS Inverter", Indian Journal of Applied Research, April,2012, vol. 1, issue 7, ISSN 2249-555X.

160. "Time Independent & Reconfigurable Null Conventional Logic", National conference on Innovations in Communication System and

Systems Design (ICSSD-2012), 2-3 March, 2012, GGITS, Jabalpur.

161. "Understanding System on Chip Design Languages as SoC Design Alternative", 6th National Conference; INDIACom-2012 Computing for Nation Development, Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi, Feb. 23 – 24, 2012.

162. "Quantitative Analysis of Spin hall Effect in nanostructures", 6th National Conference; INDIACom-2012 Computing for Nation Development, Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi, Feb. 23 – 24, 2012.

163. "Comparison of Different AOA Estimation Techniques For SAS", 6th National Conference; INDIACom-2012 Computing for Nation Development, Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi, Feb. 23 – 24, 2012.

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164. Computer Architecture, [Nicholas Carter (original author) and Raj Kamal (Adaptation/ Revision author)] Published as Schaum Series McGraw-Hill, International Indian Edition, Ist Edition May 2006, 2nd Edition 2010.

165. Device Modeling Of AlGaN/GaN High Electron Mobility Transistors (HEMTs): - An Analytical Approach, Manju K. Chattopadhyay, LAP LAMBERT Academic Publishing (October 29, 2010) ISBN-13: 978-3838396293

166. Image Compression and Processing, Aradhna Gautam Dissertation Published as book by Lambert Publs. Germany, 2010.

167.

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DR. RAJ KAMAL

168. Knowledge Engineering for an Expert System on Crop Disease Management. Savita Kolhe, Raj Kamal, Harvinder S. Saini and G. K. Gupta, Journal of Computer Science, (Accepted), 2010

169. A fuzzy-logic based on-line disease diagnosis system for soybean, Savita Kolhe, Raj Kamal, Harvinder S. Saini and G. K. Gupta, Soybean Research, Vol 7, 2009

170. Low-power LFSR Kernel Architecture in Mobile Transmitter and Receiver Protocols and Software Defined Radios, C N Khairnar, Sanjiv Tokekar and Raj Kamal, International Journal of Recent Trends in Engineering (ISSN: 1797-9617),Vol. 2, No. 1, pp20-26, Nov 2009

171. A web-based intelligent disease diagnosis system using a new fuzzy logic approach for drawing the inferences in crops, Submitted to World Congress On Nature and Biological Inspired Computing (NaBIC2009), Savita Kolhe, Raj Kamal, H.S. Saini ,and G.K.Gupta, Communicated, Proceedings to be published in IEEE Computer Society and indexed by both EI (Compendex) and ISTP (Published in IEEE Xplore), December 9-11, pp. 812-817, 2009

172.   KMSCD:Knowledge Management System for Crop Diseases, Savita Kolhe, Raj Kamal, H.S. Saini ,and G.K.Gupta, presented at World Congress on Nature and Biologically Inspired Computing (NaBIC 2009), IEEEExplore

173.   "Applying HPC and Virtual Reality for Modeling of Traction Systems",
 International Journal of Academic Research, Azerbaijan, May 2010 issue, vol. 2, No. 3, pp.107-116.

174.   "Modeling and Reliability Analysis of CNT and MEMS based Wireless   Sensor
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 Technology, Azerbaijan, February 2010 issue, vol. 1, issue 1, pp. 136-146.

175.   Simulation and Synthesis of Synchronous Optical Network Standard
 Synchronous Transport Signal STS-12 Transmitter", PACE, A journal of Research of Prestige Institute of Management, India, Vol. 1 No.1, Jan. 2010   issue,
 pp. 61-67.

176.   "Efficient Memory Mapping in GSM phones", International Journal   of   Recent
 trends in Engineering, Academy Publishers and ACEEE, Finland, November, 2009.

177.   Journal of Electronics and Computers Volume 2, Number 1, ISSN:0975-3796: "Need of Image Compression for Position Explorer Engine based on Cell Phone", International Conference TRACE-2010, PP 233-238, 2010

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178.   "A Novel way of Intelligent Network Identification in GSM Networks",   2nd
 International Conference on Future Networks, (ICFN 2010), Sanya, China, Jan. 22-24, 2010.

179.   "Comparison of Learning Approaches in AI", 2nd International Conference   on
 Computer and Electrical Engineering (ICCEE 2009), Dubai , UAE, 28 - 30 December 2009.

180.   "Critical Evaluation of Connection Admission Control methods in ATM
 Networks", 2009 International conference on Information and Multimedia Technology(ICIMT-2009), Jeju Island, South Korea, 18-19 December, 2009.

181.   Evaluation of AI Applications, 2009 International conference on Information and Multimedia Technology(ICIMT-2009), Jeju Island, South Korea, 18-19 December, 2009.

182.   Wireless Telemetry controlled Robot, International Conference on Computer Technology and Development, ICCTD 2009, Kota Kinabalu,

Malaysia, November 13 - 15, 2009.

183. A Novel technique for Colour Sensing of Object using RADAR, International Conference on Information Technology ICIT 2009, Venice, Italy, October 28-30, 2009.

184. A Low Power Muscle Stimulation Technique, International Krygyz-Kazakh Electronics & Computer Conferences (IKECCO 2009), Almaty, Kazakhstan 12-13 October, 2009.

185. Comparative Evaluation of Sensor Network Routing Protocols, International Conference on Computer and Information Science ICCIS 2009 Amsterdam, The Netherlands, September 23-25, 2009.

186. Qos Guaranteed Routing Protocols for Sensor Networks, International
Conference on Computer Science and Software Engineering ICCSSE 2009,
Singapore, August 26-28, 2009.

187. Evaluation of Planning Approaches in AI, International Conference on
Computer Science and Information Systems Engineering, ICCSISE 2009,
Singapore, August 26-28, 2009.

188. Maintaining QoS in Digital watermarking Schemes, International Conference on Computer Science and Information Systems Engineering ICCSISE 2009 Singapore, August 26-28, 2009.

189. Fuzzy Logic Based Congestion Control approach in GSM Networks,
International Conference on Computer Science and Information Systems Engineering, ICCSISE 2009, Singapore, August 26-28, 2009.Embedded Handheld Spirometer with a Graphical LCD Display, International Conference on Bioinformatics and Computational Biology (BioComp'09) under WORLDCOMP'09 - The 2009 World Congress in Computer Science, Computer Engineering and Applied Computing, Las Vegas, Nevada, USA, July 13-16, 2009.

190. Efficient FPGA Implementation of Multiplexers, International Conference on Modeling, Simulation & Visualization Methods (MSV'09) under
WORLDCOMP'09- The 2009 World Congress in Computer Science, Computer
Engineering and Applied Computing, Las Vegas, Nevada, USA, July 13-16, 2009.

191. Kirti Panwar "Best Route Finder Smart Vehicle" in the II International Conference on Opportunities and challenges in Global Business organized by International Institute of Foreign Trade and Research, Indore, Feb 13-14, Page: 14, 2010

192. Kirti Panwar "Interactive Local Transportation System using GIS and GS" in the II International Conference on Opportunities and challenges in Global Business organized by International Institute of Foreign Trade and Research, Indore, Feb 13-14, Page: 14, 2010

193. Ms. Pallavi Yarde, Ms. Rashmit Khanuja, Mr. Arun Pandey, "Innovated Transportation System (InTS): as a solution for the Challenges

of Operation Management", International Conference at IIFTR, Indore , Page 12, 2010

194.   Ms. Amrita Tiwari, Ms. Nikita Shukla, "Visualization of Location Based Services using SVG", International Conference at IIFTR, Indore in 2010

195.   Ms. Parul Jain, Ms. Surabhi Jain, Mr. Tushar Kumar Shrivastava "Spatial Database Intelligence in Traffic Control (SDITC) ", International Conference at IIFTR, Indore in 2010

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196.   Comparison of CAN, TTCAN and FlexRay and their suitability in safety critical applications, Proc. National Conference on Emerging, Electronic and Computing Systems, April 02-03, 2010

197.   Kirti Panwar "Dominant use of Variable over Signal for Behavior Modeling in   VHDL" in the National Conference of Shanti Swarup Bhatnagar Award Winners organized by Devi Ahilya University, July 17-19, 2009, Page: 35, Indore.

198.   Kirti Panwar, Uma Rajchandani, Ashwani Kumar "VGA Signal Generation using FPGA (Spartan 3E)" in the National Conference of Shanti Swarup Bhatnagar Award Winners organized by Devi Ahilya University, July 17-19, 2009, Page: 34, Indore.

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199.   A fuzzy-logic based on-line disease diagnosis system for soybean, Savita Kolhe, Raj Kamal, Harvinder S. Saini and G. K. Gupta, Soybean Research, Vol 7, 2009

200.   Low-power LFSR Kernel Architecture in Mobile Transmitter and Receiver Protocols and Software Defined Radios, C N Khairnar, Sanjiv Tokekar and Raj Kamal, International Journal of Recent Trends in Engineering (ISSN: 1797-9617),Vol. 2, No. 1, pp20-26, Nov 2009

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202.   KMSCD:Knowledge Management System for Crop Diseases, Savita Kolhe, Raj Kamal, H.S. Saini ,and G.K.Gupta, presented at World Congress on Nature and Biologically Inspired Computing (NaBIC 2009), IEEEExplore

203.   Applying HPC and Virtual Reality for Modeling of Traction Systems",
International Journal of Academic Research, Azerbaijan, May 2010 issue, vol. 2, No. 3, pp.107-116.

204.   Modeling and Reliability Analysis of CNT and MEMS based

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Network, International Journal of Academic Research, Journal of Mathematics and Technology, Azerbaijan, February 2010 issue, vol. 1, issue 1, pp. 136-146.

205.   Simulation and Synthesis of Synchronous Optical Network Standard

Synchronous Transport Signal STS-12 Transmitter, PACE, A journal of Research of Prestige Institute of Management, India, Vol. 1 No.1, Jan. 2010   issue,
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206.   Efficient Memory Mapping in GSM phones", International Journal of   Recent

trends in Engineering, Academy Publishers and ACEEE, Finland, November, 2009.

207.   Journal of Electronics and Computers Volume 2, Number 1, ISSN:0975-3796: "Need of Image Compression for Position Explorer Engine based on Cell Phone", International Conference TRACE-2010, PP 233-238, 2010

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208.   "A Novel way of Intelligent Network Identification in GSM Networks",   2nd
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209.   "Comparison of Learning Approaches in AI, 2nd International Conference   on
Computer and Electrical Engineering (ICCEE 2009), Dubai , UAE, 28 - 30 December 2009.

210.   Critical Evaluation of Connection Admission Control methods in ATM
Networks, 2009 International conference on Information and Multimedia Technology(ICIMT-2009), Jeju Island, South Korea, 18-19 December, 2009.

211.   Evaluation of AI Applications, 2009 International conference on Information and Multimedia Technology(ICIMT-2009), Jeju Island, South Korea, 18-19 December, 2009.

212.   Wireless Telemetry controlled Robot, International Conference on Computer Technology and Development, ICCTD 2009, Kota Kinabalu, Malaysia, November 13 - 15, 2009.

213.   "A Novel technique for Colour Sensing of Object using RADAR", International Conference on Information Technology ICIT 2009, Venice, Italy, October 28-30, 2009.

214.   "A Low Power Muscle Stimulation Technique", International Krygyz-Kazakh Electronics & Computer Conferences (IKECCO 2009), Almaty, Kazakhstan 12-13 October, 2009.

215.   "Comparative Evaluation of Sensor Network Routing Protocols", International Conference on Computer and Information Science ICCIS 2009 Amsterdam, The Netherlands, September 23-25, 2009.

216.   "Qos Guaranteed Routing Protocols for Sensor Networks", International
Conference on Computer Science and Software Engineering ICCSSE 2009,
Singapore, August 26-28, 2009.

217.   "Evaluation of Planning Approaches in AI", International Conference on
Computer Science and Information Systems Engineering", ICCSISE 2009,
Singapore, August 26-28, 2009.

218.   "Maintaining QoS in Digital watermarking Schemes", International
Conference on Computer Science and Information Systems Engineering
ICCSISE 2009 Singapore, August 26-28, 2009.

219.   "Fuzzy Logic Based Congestion Control approach in GSM Networks",
International Conference on Computer Science and Information Systems
Engineering, ICCSISE 2009, Singapore, August 26-28, 2009.

220.   "Embedded Handheld Spirometer with a Graphical LCD Display",
International Conference on Bioinformatics and Computational Biology
(BioComp'09) under WORLDCOMP'09 - The 2009 World Congress in
Computer Science, Computer Engineering and Applied Computing, Las
Vegas, Nevada, USA, July 13-16, 2009.

221.   "Efficient FPGA Implementation of Multiplexers", International
Conference on Modeling, Simulation & Visualization Methods (MSV'09)
under
WORLDCOMP'09- The 2009 World Congress in Computer Science,
Computer
Engineering and Applied Computing, Las Vegas, Nevada, USA, July 13-
16, 2009.

222.   Kirti Panwar "Best Route Finder Smart Vehicle" in the II
International Conference on Opportunities and challenges in Global
Business organized by International Institute of Foreign Trade and
Research, Indore, Feb 13-14, Page: 14, 2010

223.   Kirti Panwar "Interactive Local Transportation System using GIS
and GS" in the II International Conference on Opportunities and
challenges in Global Business organized by International Institute of
Foreign Trade and Research, Indore, Feb 13-14, Page: 14, 2010

224.   Ms. Pallavi Yarde, Ms. Rashmit Khanuja, Mr. Arun Pandey,
"Innovated Transportation System (InTS): as a solution for the Challenges
of Operation Management", International Conference at IIFTR, Indore ,
Page 12, 2010

225.   Ms. Amrita Tiwari, Ms. Nikita Shukla, "Visualization of Location
Based Services using SVG", International Conference at IIFTR, Indore in
2010

226.   Ms. Parul Jain, Ms. Surabhi Jain, Mr. Tushar Kumar Shrivastava
"Spatial Database Intelligence in Traffic Control (SDITC) ", International
Conference at IIFTR, Indore in 2010

National

227.   Comparison of CAN, TTCAN and FlexRay and their suitability in safety critical applications, Proc. National Conference on Emerging, Electronic and Computing Systems, April 02-03, 2010

228.   Kirti Panwar "Dominant use of Variable over Signal for Behavior Modeling in VHDL" in the National Conference of Shanti Swarup Bhatnagar Award Winners organized by Devi Ahilya University, July 17-19, 2009, Page: 35, Indore.

229.   Kirti Panwar, Uma Rajchandani, Ashwani Kumar "VGA Signal Generation using FPGA (Spartan 3E)" in the National Conference of Shanti Swarup Bhatnagar Award Winners organized by Devi Ahilya University, July 17-19, 2009, Page: 34, Indore.

2008-09

230.   Modeling the system tasks and deploying the Orchestrator tasks for Communication of Messages from the Music files in a Robotic Orchestra, Raj Kamal and H. S. Saini , CSI Communications, Nov. 2008

231.   Low-power LFSR Kernel architecture in mobile transmitter and receiver protocols and software defined radios, C N Khairnar, Raj Kamal, and Sanjiv Tokekar, Communicated, 2008

232.   Manju K. Chattopadhyay, Sanjiv Tokekar, "Thermal model for dc characteristics of algan/gan hemts including self-heating effect and non-linear polarization" Microelectronics Journal 39 (2008) 1181–1188

233.   Manju K. Chattopadhyay "Thermal Model for AlGaN/GaN HEMTs Including Self-Heating Effect and Non-linear Polarization" Microwave 08, international conference on Microwave Devices and circuits, Nov 21-24, 2008 Jaipur

234.   "E- Governance: Windows to Success", Proc. of the National Conference on Business Technologies(IT that drives Business), TRUBA College of Engineering and Technology , Indore, Mar. 13-15, 2009.

235.   Kirti Panwar, Ashwini S. Patankar " Can 3G Affirm Security Measures: An Insight View " Communicated to National Conference on "Business Technologies" organized by Truba College of Engineering & Technology TBTC'09, Indore from 13-14 March, 2009

236.   "HMIS: Hospital Management Information System - An Economical Investment to Manage Healthcare Information", Proc. of the National Conference on Business Technologies(IT that drives Business), TRUBA College of Engineering and Technology , Indore, Mar. 13-15, 2009.

237.   "Mobile Location Based Services using XML" at geomatrix'09 in IIT Bombay, dated 29 Feb – 1 March.

238.   "Optimum XML Parsing for Mobile Based Location Services" at TBTC'09 in Truba Collage of Engineering, dated 13-14 March

239.   "Mixed Signal Hardware Description Languages VHDL-AMS and Verilog AMS-Compared and Contrasted", Proc. of the 3rd National Conference; INDIACom-2009 Computing For Nation Development, Bharati

Vidyapeeth's
Institute of Computer Applications and Management, New Delhi, Feb. 26 – 27, 2009.

240. "Biotelemetry based wireless patient monitoring system", Proc. of the
3rd National Conference; INDIACom-2009 Computing For Nation Development, Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi, Feb. 26 – 27, 2009.

241. "Adaptable Power Data Compression / Decompression Technique", Proc. of the 3rd National Conference; INDIACom-2009 Computing For Nation Development, Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi, Feb. 26 – 27, 2009.

242. "Small Signal and Large Signal Device Modeling using VHDL-AMS Language", Proc. of Third National IT Conference on IT Enabled Practices and Emerging Management Paradigms, Prestige Institute of Management and Research, Indore, Sept. 12-13, 2008.

243. Aparna Deo "Digital Audio Effects: Matlab Implantations" NCAFIS-08 organized by :SCSIT, DAVV, dated 16-17 August, 2008.

244. Mobile Devices with Embedded Local Intelligence and Spatial Databases for   the Supply Chain Management Applications, Raj Kamal and Preeti Saxena, Nirma   International Conference on Supply Chain, Jan.9-11, 2008

III.2 Number of papers published in peer reviewed journals (national / international)

Monographs

Chapters in Books

Books with ISBN with details of publishers

Number listed in International Database (For *e.g.* Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)

Citation Index – range / average

SNIP

SJR

Impact Factor – range / average

h-index

III.3 List and Records and Details of patents and income generated -Nil-

III.4 List and Record of Areas of consultancy and income generated   -Nil-

III.6 List and Record of Faculty selected nationally/internationally to visit

other laboratories in India and abroad -Nil-

III.6 List and Record of Faculty serving in

National committees b) International committees c) Editorial Boards d) any other (please specify)

III.7   Research thrust area recognized by funding agencies for the department : Mobile Computing, Embedded Systems, GIS, Remote Sensing, DSP, Digital Image Processing, VLSI Design

III.8 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 and grants received project-wise. Nil

III.9 List and details of Inter-institutional collaborative projects and grants received All India collaboration b) International Nil

III.10 List and details of Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, etc.; total grants received.

UGC Innovative programme for setting up lab and classes for M.Tech (Mobile Computing Technology) in year 2008

III.11 List and Details of Research facility / centre with

- state recognition
- national recognition
- international recognition

    Nil

III.12 List and details of Special research laboratories sponsored by / created by industry or corporate bodies Nil

3.1   Promotion of Research

3.1.1   A. Composition of Departmental Research Committee, List of members and minutes of its meeting :
1. Dr. Abhay Kumar: Dean & Chairman
2. Dr. S. Katiyal : BOS Chairman
3. Dr. Raj Kamal: VC Nominee,
4. Dr. P. K. Sen: VC Nominee

  B. Records of DRC regarding monitoring and addressing issues related to research: Meetings held as per requirements

  C. Record of DRC recommendations which have been implemented and their

impact. : List of students for Ph.D. in year 12-13:

3.1.2 Information of research centers in its affiliated / constituent colleges which are monitored by the DRC of the department –Nil-

3.1.3 Details of the
  * advanced funds for the sanctioned projects
  * providing seed money
  * Simplification of procedures related to sanctions / purchases to be made by the investigators
  * Autonomy to the principal investigator/coordinator for utilizing overhead charges
  * Timely release of grants
  * Timely auditing
  * Submitted utilization certificates to the funding authorities

3.1.4 Record of interdisciplinary research promoted
  * with other departments /schools of the university and -Nil-
  * collaboration with national/international institutes/industries -Nil-

3.1.5 Details of workshops/ training programmes/ sensitization programmes conducted by the department to promote a research culture on campus

1. National Workshop on Mobile System Programming by Dr. S.R.N Reddy , Assistant Professor at IGIT, Indraprashtha University, New Delhi. Dated 10-12 Feb. 2012.

2. Short Term Training Programme on Embedded System Programming (SESP-12), by Prof. P.W. Dandekar , SVCE Indore. Date 24-26 Feb. 2012.

3. Workshop on Mobile Computing (WCM- 2012), " ICEIT-DAVV Indore Chapter, speaker Prof. H. M. Gupta, IIT Delhi, on 12th March 2012.

4. A motivational lecture on "Secrets of Success", by Mr. Chitlay (World Renowned Spiritual Leader & Humanitarian). Date 06th March'2012, Tuesday.

5. Workshop on "Mentoring Inspirational lecture on Innovations in Computer, Mobile and Tablets" By Dr. Raj Kamal, Professor School of Computer Science and Electronics, DAVV, Indore. Date 21st Jan 2013

3.1.6 A. Details of visits of researchers of eminence to visit the campus as adjunct professors –Nil-

B. Impact of such efforts on the research activities of the university: -

3.1.7 A. Percentage of the total budget of the department which is earmarked for research

As per needs. No separate budget.

B. Details of heads of expenditure, financial allocation and actual utilization

3.1.8 A. Details of University funded research and awarded Post Doctoral Fellowships/Research Associateships

B. List of students registered with record of source of funding by the university and other sources –NA-

3.1.10 A. List and percentage of faculty which have utilized the sabbatical leave for pursuit of higher research in premier institutions within the country and abroad: -Nil-

B. Record of the output of these scholars -

3.1.11 A. Details with photographs of national and international conferences organized

1. National Conference on "Emerging Electronics and Computing Systems" (NCEECS, 2010) & Workshop:

- days Workshop:29th March, 2010 - 01st April, 2010
- days Paper Presentations: 02nd April, 2010 - 3rd April, 2010.

2. Second Conference of Shanti Swarup Bhatnagar National Awardees (Biological, Chemical, Earth, Atmosphere, Ocean and Planetary,

Engineering, Mathematical, Medical and Physical Sciences) Jointly Organised by Faculty of Science, Life Sciences and Engineering Sciences, July 17-19, 2009

    B. List highlighting the names of eminent scientists/scholars who participated in these events.

1. Padam Vibhushan Dr. Anil Kakodakar
2. Padam Bhushan Dr. T Alex
3. Prof. P.W. Dandekar, Tata Motors
4. Prof Venkatachalan, IIT Bombay

3.2	Resource Mobilization for Research
3.2.1	Record of Financial provisions made in the university budget for supporting students' research projects
3.2.2	A. Record of special efforts to encourage its faculty to file for patents –Nil- B. List of registered and accepted patents.
3.2.3	Details of ongoing research projects of faculty: -Nil-

	Year wise	Number	Name of the project	Name of the funding agency	Total grant received
A. University awarded projects					
Minor projects					
Major projects					
B. Other agencies - national and international (specify)					
Minor projects					
Major projects					

3.2.4   A. Record of projects sponsored by the industry/corporate houses –Nil-

            B. Details such as the name of the project, funding agency and grants received.

3.2.5   A. Details of Department recognition for their research activities by national / international agencies (UGC-SAP, CAS; Department with Potential for Excellence; DST-FIST; DBT, ICSSR, ICHR, ICPR, etc.) and the quantum of assistance received: –Nil-

            B. Record of any two significant outcomes or breakthroughs achieved by this recognition. -

3.2.6   List details of

         a. research projects completed and grants received (funded by National/International agencies).   –Nil-

         b. Inter-institutional collaborative projects and grants received
            i) All India collaboration   –Nil-
            ii) International   –Nil-

3.3   Research Facilities

3.3.1   A. Infrastructure in the department to facilitate research: Internet facility is available 24x7, Central library of the University subscribes to International Journals in almost all fields. Books on advanced topics are purchased in the Departmental Library.

            B. Strategies have been evolved to meet the needs of researchers in emerging disciplines:

3.3.2   A. Information and Resources catering to the needs of researchers of the department.

            B. Details of the facility. Advanced software related to Microcontrollers, Mobile Computing, Spatial Information Technology, viz.   ArcGIS,   MATLAB,

LabVIEW, Proteus, Kiel, Oracle, Eagle, Python, .NET Framework, Visual Studio, Xilinx, are available in the department. Various kits are available for development eg. Spartan 3, ARM based kits. Laptops,

3.3.3 Record of University Science Instrumentation Centre (USIC) facilities been made available to research scholars Not used yet

3.3.4 Record of provision of residential facilities (with computer and internet facilities) for research scholars, post-doctoral fellows, research associates, summer fellows of various academies and visiting scientists (national/international) : University Hostels and guest house are available at reasonable rates.

3.3.5 Details of Uses of the Facilities of IUC, CAT, NRCS, IIT Indore and other specialized Research Centers for research : Faculty and M.Tech. Students are encouraged to do their research based major projects in these institutes. Library facilities are utilized.

3.4 Research Publications and Awards

3.4.1 Research journal published, if any, from the department(s)? If yes, indicate the composition of the editorial board, editorial policies and state whether it/they is/are listed in any international database. –Nil-

3.4.2 Details of publications by the faculty:

* Number of papers published in peer reviewed journals (national / international)

* Monographs
* Chapters in Books
* Books edited
* Books with ISBN with details of publishers

* Number listed in International Database (For *e.g.* Web of Science, Scopus, Humanities International Complete, EBSCO host, etc.)
* Citation Index – range / average
* SNIP
* SJR
* Impact Factor – range / average : 0.5
* h-index

3.4.3   Details of

∗ faculty serving on the editorial boards of national and international journals

1. Dr Raj Kamal: 1. IEEE Trans on VLSI Sytems

∗ faculty serving as members of steering committees of international conferences recognized by reputed organizations / societies

1.   Dr Raj Kamal:
2.   Dr A Kumar:
3.   Dr S. Katiyal:

3.4.4   Details of

∗ research awards received by the faculty and students

1. Dr. A Kumar: Young Scientist research award by DST in 2001

∗ national and international recognition received by the faculty from reputed professional bodies and agencies : -

3.4.5   A. Number of successful M.Phil. and Ph.D. scholars guided per faculty during the last four years (July 2008- June 2013)

1. Dr. Raj Kamal:

Ph.D.

M.Tech. (10 number)

2012-13 Two: Dr. Mrs. Manju Korwal Chattopadhyay

Mr. Pintu More

2011-12 Two :Mrs. Aparna Sanjay Deo

Mr. Pintu More

2010-11 : Ms. Kirti Panwar

Ms. Pranjal Sekhawat

2. Dr.S. Katiyal

3. Dr. A. Kumar

Ph.D. :01

M Tech :01

4. Ms. Kirti Panwar:

B. University participate in *Shodhganga* by depositing the Ph.D. theses with INFLIBNET for electronic dissemination through open access

3.4.6   A. Record of Promotion e interdisciplinary research

B. Number of interdepartmental / interdisciplinary research projects undertaken – Nil-

C. Mention the number of departments involved in such endeavours

3.4.8   List of University instituted research awards to the faculty of the Department NIL

3.4.9   Details of incentives given to the faculty for receiving state, national and international recognition for research contributions - -Nil-

3.5   Consultancy

3.5.1   Important consultancies undertaken by the department during the last four years. –Nil-

3.5.2   A. Department participation in university-industry cell

B. If yes, what is its scope and range of activities -Nil-

3.5.3   Record of publicizing the expertise of the department for consultancy services Faculty information is available on the website of the department. A number of books have been published by the faculty members. Senior members are invited for talks/ keynote speeches.

3.6   Extension Activities and Institutional Social Responsibility (ISR)

3.6.1   A. Department records of sensitization of faculty and students on its Institutional Social Responsibilities : occasional participation in workshop on IPR

B. List the social outreach programmes which have created an impact on students' campus experience during the last four years. –Nil-

3.6.2   Promotion of neighborhood network and student engagement and holistic development of students and sustained community development?

3.6.3   Record of participation of the students and faculty in extension activities including participation in NSS, NCC, YRC and other National/ International programmes –Nil-

3.6.4   Records of tracking the students' involvement in various social movements / activities which promote citizenship roles–Nil-

3.6.6 Write up of the values inculcated and skills learnt during extension activities. – Nil-

3.6.7 Department community in its outreach activities –Nil-

3.6.8 Details of awards received by the institution for extension activities and/contributions to social/community development during the last four years – Nil-

3.7 Collaboration

A. MOU Copies and Record of collaboration with other agencies impacted the visibility, identity and diversity of activities on campus

B. Record of benefits academically and financially because of collaborations

3.7.2 Records of linkages resulted in
* Curriculum development
* Internship
* On-the-job training
* Faculty exchange and development
* Research
* Publication
* Consultancy
* Extension
* Student placement
* Any other (please specify)

3.7.3 A. Copy of MoUs with institutions of national/international importance/other universities/ industries/corporate houses etc.
B. Record of enhanced the research and development activities

3.7.4 Have the university-industry interactions resulted in the establishment / creation of highly specialized laboratories / facilities?

3.7.5 Any other information regarding Research, Consultancy and Extension, which the university would like to include.

CRITERION IV: INFRASTRUCTURE AND LEARNING RESOURCES

4.1 Physical Facilities

4.1.1 A. Details of Department physical infrastructure
B. Maintenance of Laboratories for its optimal utilization

C. Maintenance of Computers for its optimal utilization Annual maintenance contract is given. All computers have Anti-Virus software installed on them.

D. Maintenance of UPSes, Power Supplies Annual maintenance contract is given.

- E. Maintenance of support services, sanitation, first aid boxes First Aid Box is available with Ms. Vasanti Parulkar (Lab Assistant)

- A sweeper on daily wages is appointed – Mrs Sangeeta for cleaning/mopping

- Annual maintenance contract is given for maintenance of Aqua guard in water coolers.

F. Maintenance of building, garden, indoor games structure

- A gardener cum peon takes care of garden

- Table tennis equipment is made available to the students in the department

- Badminton equipment also available

4.1.2   Record of new initiatives for Infrastructure for promote a good teaching-learning environment- Internet, Wi-fi, Power-Point Projectors, Video Equipment, Speakers

4.1.3   Physical ambience for the faculty in terms of adequate research laboratories, computing facilities and allied services   Separate cubicles are allotted to faculty members. Facilities viz. computer, printer, internet provided

4.1.4   List of Facilities like office room, common room and separate rest rooms for women students and staff
        Separate girls rest room, wash rooms (separate for gents and ladies) available in the department

4.1.5   List of the infrastructure facilities that are disabled-friendly -Nil-

4.2   Library as a Learning Resource

4.2.1   Details of departmental library facilities:

4.2.2   Provide details of the departmental library:
    ∗ Total area of the library (in Sq. Mts.)

* Total seating capacity 50 students
* Working hours (on working days, on holidays, before examination, during examination, during vacation)
    ➢ On working days: 9 am- 6 pm
    ➢ On holidays : Not open
    ➢ During vacation : 9 am- 6pm , as the department is open in vacations also.

* Layout of the library (individual reading carrels, lounge area for browsing and relaxed reading, IT zone for accessing e-resources) Tables and chairs are laid with appropriate arrangements for light and air. Two staff are available all the time in library for maintaining discipline A computer is available in Library. Wi-fi enabled zone is utilized by students using their tablets and laptops.
* Clear and prominent display of floor plan: Yes
* Adequate sign boards; Yes
* Fire alarm; Yes
* Access to differently-abled users and No
* Mode of access to collection : Books are visible from the book shelves. Staff available in the library may be approached for keys of book shelves.

4.2.3   Departmental library holdings:
   a)   Print (books, back volumes and theses): 10000+
   b)   Average number of books added during the last three years: 300
   c)   Non Print (Audio Video, CDs, Downloaded Articles): Kit Manuals available in DVDs.
   d)   Electronic (e-books, e-journals): CDs included with newly purchased books
   e)   Special collections (e.g. text books, reference books, standards, patents):
        ➢ Books on preparation of GATE, NET
        ➢ Biographies of great people
        ➢ Inspirational story books
        ➢ Reference books of foreign publishers on Remote Sensing, GIS, DSP, Image Processing, Mobile Communication, ARM Microcontrollers etc

4.2.4   Records of tools the library deploys to provide access to the collection

* OPAC No, rather a Foxpro based software is available with the departmental library for maintaining the record.
* Electronic Resource Management package for e-journals: Available through Central Library
* Federated searching tools to search articles in multiple databases -NA-
* Library Website -NA-
* In-house/remote access to e-publications: Available through Central Library

4.2.5   Use of ICT deployed in the library

* Library automation
* Total number of computers for public access: One for departmental library, All the PCs in the department have internet connection , thus are connected to central library for econtents
* Total numbers of printers for public access   -Nil-
* Internet band width speed   □ 2mbps □ 10 mbps □ 1 GB
* Institutional Repository
* Content management system for e-learning
* Participation in resource sharing networks/consortia (like INFLIBNET) Through Central Library

4.2.6   Details (per year) with regard to

* Ratio of library books to students enrolled: 10000:200
* Average number of books added during the last four years: 300
* Assistance in searching Databases
* INFLIBNET/IUC facilities

4.2.8   Annual departmental library budget and the amount spent for purchasing new books and journals. 2.00 lakhs

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4.3   IT Infrastructure

4.3.1   Details of Department IT and ICT Infrastructure

4.3.2   Details of the computing facilities i.e., hardware and software.

- Number of systems with individual configurations 88

- Computer-student ratio 1:1

- Dedicated computing facilities 10 numbers - provided to faculty

- LAN facility: Antivirus and Internet connections is provided through LAN

- Proprietary software : MATLAB, LabVIEW, Geomatica, ArsGIS, Keil for 8051, Kiel for ARM Microcontrollers, Eclipse, Eagle, Tanner Tools, Mentor Graphics, Cadence, Python.

- Number of nodes/ computers with internet facility 88

- Any other (please specify)

4.3.3   Plans and strategies for deploying and upgrading the IT infrastructure and associated facilities : The region is Wi-fi enabled. Department plans to purchase more PCs and laptops

4.3.4   Details on access to on-line teaching and learning resources and other knowledge and information database/packages provided to the staff and students for quality teaching, learning and research : Faculty and Staff are encouraged to download lectures from resources such as NPTEL, MIT and other web resources. Students are also given links on various topics.

4.3.5   IT facilities available to individual teachers for effective teaching and quality research: PCs available with printer for each faculty and non-teaching staff.

4.3.8   A. Details of ICT-enabled classrooms/learning spaces available : All the labs and classes are ICT-enabled with internet connectivity.
 B. Record of utilization for enhancing the quality of teaching and learning: All the teachers use it fully.

4.3.9   Records of Faculty and computer- aided teaching-learning materials : PPTs made available on departmental website. Hard copies of the ppts are also available in course-plan files of each faculty.

4.3.10 Department availing of of the National Knowledge Network connectivity

4.3.12 Record of Availing of web resources such as Wikipedia, dictionary and other education enhancing resources

4.3.13 Department budget for the update, deployment and maintenance of computers

4.3.14 Details of plans envisioned for the gradual transfer of teaching and learning from closed university information network to open environment   ?

4.4 Any other information regarding Infrastructure and Learning Resources which the

university would like to include.

CRITERION V: STUDENT SUPPORT AND PROGRESSION

5.1   Student Mentoring and Support

5.1.1   Department system, structural and functional characteristics for student support and mentoring

Class coordinators and mentors are appointed for each batch at the beginning of the course. Students are welcome to discuss and solve their queries. Meetings with HOD and class representatives are regularly held.

5.1.2   Record of 'apart from classroom interaction', the provisions available for academic mentoring

Non-formal talks and discussions done by the teachers outside the classrooms with interested students.

5.1.3   Record of department students utilization of personal enhancement and development schemes such as career counseling, soft skill development, career-path-identification, and orientation to well-being for its students.

Orientation programme are organized each year at departmental as well as University level. Seminars are part of course curriculum for soft skill development. Besides, department also organizes group discussions, spoken English classes, motivational lectures etc. Class coordinators monitor the growth of students.

5.1.4   Department publish its updated prospectus and handbook info annually on website and online access of course plans, syllabi and result - Yes, it is done twice a year.

5.1.5   A. Records of the Timely dissipation of financial aid

C. Tables for type and number of scholarships/free-ships given to the students during the last four years the following categories: UG/PG/M.Phil/Ph.D./Diploma/others : AICTE scholarship to the M.Tech students on GATE seats is transferred to their bank accounts.

5.1.6   Table of percentages of students receive financial assistance from state government, central government and other national agencies (Kishore Vaigyanik Protsahan Yojana (KVPY), SN Bose Fellow, etc.)

Type of scholarship	Course	No. of students
AICTE	M.Tech. (Embedded	13

	Systems)	
AICTE	M.Tech. (Mobile Computing Technology)	13
AICTE	M.Tech. (Mobile Computing Technology)	13
State Govt.	M.Tech. & MSc	-
Central Govt.	Inspire	1 student at present

5.1.7 Department use of International Student Cell, number and list of foreign students
-Nil-

5.1.8 Department support services available for
* Students participating in various competitions/conferences in India and abroad : Registration fee, boarding lodging, travel is sponsored by the department for presenting quality research work.
* Physically challenged / differently-abled students –Nil-
* SC/ST, OBC and economically weaker sections: As per State govt. rules
* Health centre, health insurance etc. : Central facility of the University is available
* Skill development (spoken English, computer literacy, etc.) : Spoken Engkish classes are held in the department as well as University level.
* performance enhancement for slow learners : Remedial classes are arranged by the faculty
* exposure of students to other institutions of higher learning/ corporates/business houses, etc. : Students do their Major Project Work at reputed academic institutions like IITs or at MNCs
* publication of student magazines – Not at present-
* Record of student participation in sports and extracurricular activities: Students participated in Inter UTD level games organized by the university. A faculty appointed as sports coordinator manages the participation.

5.1.9 Placement Records

PLACEMENT – 2012

M.Tech. (EMBEDDED SYSTEMS), Batch: 2010-12

S.NO.	NAME	BRANCH	COMPANY NAME
1	MURTUZA SAIFEE	ES	UPSIDE LEARNINGS, PUNE
2	AMITESH BAJAJ	ES	ADVANCE TECHNOLOGY, CHANDIGARH
3	PRIYA VED	ES	WIPRO, TRIANNATPURAM
4	JITENDRA TOMAR	ES	ELECTRONICS FOR YOU, NEW DELHI
5	ANKIT KANUNGO	ES	TRANS AUTOMATION
6	RANJEET JHA	ES	ID SOLUTIONS, DELHI
7	VIKAS MISHRA	ES	SDCET ENEE. COLLEGE JAIPUR
8	HARISH MAHESHWARI	ES	POORNIMA ENGG. COLLEGE JAIPUR
9	MILAP DHRUV	ES	MASIBUS AUTOMATION AND INSTRUMENTATION PVT LTD AHEMDABAD
10	MAYANK KOTHARI	ES	ADVANCE TECHNOLOGY, CHANDIGARH

M.Tech. (Mobile Computing Technology), Batch: 2011-13

S.NO.	NAME	BRANCH	COMPANY NAME
1	KRISHNA CHAITANYA	MCT	PRIMESOFT IP SOLUTIONS, HYDERABAD
2	PRAVEEN THOGARIA	MCT	PRIMESOFT IP SOLUTIONS, HYDERABAD
3	NITIN K GHARIYA	MCT	SOFMEN TECHNOLOGIES PVT LTD, INDORE
4	RITU VERMA	MCT	GOUR SOFTWARE & SERVICES PVT LTD
5	VIPIN SAHU	MCT	DIGIRAATIS , NEW DELHI
6	VIPUL NARKHEDE	MCT	RIGGER TECHNOLOGY SERVICES, GURGAON
7	MAYANK SHUKLA	MCT	ST- MICRO , G. NOIDA
8	RAHUL DUBEY	MCT	CAP GEMINI, BENGLORE

M.Tech. (SPATIAL INFORMATION TECHNOLOGY), Batch: 2011-13

S.NO.	NAME	BRANCH	COMPANY NAME
1	PIYUSH BISEN	SIT	CMC LIMITED,BANGALORE
2	UDAY SINGH	SIT	MSR TECHNOLOGIES, NEW DELHI
3	MAHENDRA	SIT	Indian Metrological Department, Delhi
4	BIJENDRA	SIT	CMC, BENGLORE

5.1.10 Number of students selected during campus interviews by different employers (list the employers and the number of companies who visited the campus during the last four years).

5.1.11 A. Record of registered Alumni Association Kept in Alumni register

B. Record of activities and contributions to the development of the depart

Various activities are organized using the alumni fund for eg. Alumni meet, Invited talks,

C. Record of alumni meets: Kept in Alumni file

5.1.12   A. Committee members and record of student grievance redressal

Boys:

1. Dr. Abhay Kumar

2. Dr. S. Katiyal

Girls:

1. Dr. Abhay Kumar

2. Dr. Manju Chattopadhyay

B. Details of the nature of grievances reported and the redressal None

5.1.13   A. Record of anti-ragging committee

1. Dr. Abhay Kumar

2. Dr. S. Katiyal

3. Ms. Pratibha Umale

4. Dr. Manju Chattopadhyay

B. List of instances reported during the last four years and what action has been taken in these cases None reported

5.1.14 Details of the cooperation rendered by parents, industry and its stakeholders to ensure the overall development of its students
1. Alumni meet is organized
2. Parent meet is organized
3. Faculty members call the parents directly to update the parents if the attendance/ performance of the student falls.
4. Parents respond to the calls/ letters sent to them by faculty members regarding the progress of their ward.
5. Industry people help by providing suugestions for changes in course curriculum.

5.1.18 A. List of participation of women students in intra- and inter-institutional sports competitions and cultural activities
Women students participate in Inter- UTD sports activities organized by the University
B. List of participation of women students in intra- and inter-institutional sports competitions and cultural activities

5.2 Student Progression

5.2.1 Analysis of progression and trends for the last four years.

Student Progression	%
UG to PG*	-
PG to M.Tech.*	10
PG to Ph.D.	5
Ph.D. to Post-Doctoral	-
Employed • Campus selection • Other than campus recruitment	25 75

5.2.2 Programme-wise pass percentage during the time span stipulated

Programme	2012-13	2011-12	2010-11	2009-10	2008-09
M.Tech. (Embedded	100	100	100	100	100

Systems)					
M.Tech. (Spatial Information Technology)	100	100	100	100	100
M.Tech. (Mobile Computing Technology)	100	100	100	100	-
M.Sc (Elec. & Comm)	95	100	100	100	100
M.Sc (Elec.)	100	100	100	100	100

5.2.3 Records of Number and percentage of students who appeared/qualified in examinations like UGC-CSIR-NET, UGC-NET, SLET, ATE / CAT / GRE / TOFEL / GMAT / Central / State services, Defense, Civil Services, etc.

Gate Qualified Students

1 Amit Ranjan M.Sc. (ECN) Batch:2011-13 2013

2 Ratna Potdar M.Sc.(ECN) Batch:2010-12 2013

3 Amarnath Tiwari M.Tech(ES) Batch:2011-13 2013

4 Alekh Jain M.Tech(ES) Batch:2011-13 2013

5 Priyank Sunahre M.Tech(ES) Batch:2011-13 2013

6 Kirti Panwar M.Tech(MCT) Batch:2009-11 2013

7 Ashish Suryavanshi M.Tech(MCT) Batch:2012-14 2013

8 Mahendra K. Shrivastav M.Tech(MCT) Batch:2012-14 2013

9 Ajeet Gautam M.Tech(MCT) Batch:2012-14 2013

10 Naveen Rathore M.Tech(MCT) Batch:2012-14 2013

11 Rajul Jain M.Tech(SIT) Batch:2012-14 2013

12 Vaishali Tamrakar M.Tech(SIT) Batch:2012-14 2013

13 Piyush Mandorva M.Tech(MCT) Batch:2012-14 2013

14 Jitendra Patidaar M.Tech(ES) Batch:2011-13 2013

15 Biswajeet Tikadaar M.Sc.(ECN) Batch:2010-12 2012

16 Amarnath Tiwari M.Tech(ES) Batch:2011-13 2012

17 Pradeep S. Jhala M.Tech(ES) Batch:2011-13 2012

18 Alekh Jain M.Tech(ES) Batch:2011-13 2012
19 Dheeraj Patidaar M.Tech(MCT) Batch:2011-13 2012
20 Abhay Pawar M.Tech(SIT) Batch:2011-13 2012
21 Priyank Sunahre M.Tech(ES) Batch:2011-13 2012
22 Pintu M.Sc.(ECN) Batch:2009-11 2011
23 Rajkumar Jaiswar M.Sc.(ECN) Batch:2009-11 2011
24 Kirti Panwar M.Tech(MCT) Batch:2009-11 2011
25 Souvik Saha M.Sc.(ELE) Batch:2009-11 2011
26 Arpit Mahajan M.Tech.(ES) Batch:2010-12 2011
27 Uday Singh M.Tech. (SIT) Batch:2010-12 2011

NET Qualified Students

1 Kirti Panwar M.Tech.(MCT) Batch: 2009-11 2013
2 Ratna Potdar M.Sc.(ECN) Batch:2010-12 2013
3 Kapil K. Kushwaha M.Sc.(ECN) Batch:2009-11 2012
4 Kirti Panwar M.Tech.(MCT) Batch: 2009-11 2012
5 Ratna Potdar M.Sc.(ECN) Batch:2010-12 2012
6 Mahesh Yadav M.Tech(ES) Batch: 2008-10 2012
7 Manish Joshi M.Sc.(ELE) Batch: 1996-98 2012

5.2.4   List category-wise with details regarding the number of Ph.D./D.Litt./D.Sc. theses submitted/ accepted/ resubmitted/ rejected in the last four years -Nil-

5.3   Student Participation and Activities

5.3.1   A. List the range of sports, cultural and extracurricular activities available to students
         B. Sports and extracurricular calendar and details of students' participation.
5.3.2   Details of the achievements of department students in co-curricular, extracurricular and cultural activities at different levels: University / State / Zonal / National / International, etc. during the last four years.
5.3.3   A. Gathered data and feedback from pass-out graduates Available in Alumni/ Visitors register
          B. Gathered data and feedback from employers : Feeedback is only taken from the students who go for Major project work, not for employment.

C. Use of the data for the growth and development of the department: The data is used to

5.3.4   Department special drives / campaigns for its faculty and students to promote heritage consciousness

5.3.5   A. Records of Department involvement and encourage its students to publish materials like catalogues, wall magazines, departmental magazine, and other material

Department supports only research based publications.

B. List the major publications/ materials brought out by the students during the last four academic sessions.

5.3.6   A. Departmental Student and Alumni association or or any other similar body

Alumni association is present. Separate bank account is there for Alumni fund.

B. Details on its constitution, activities and funding.

Each semester, students submit Rs 300/- as contribution to Alumni fund. A Committee constituting the head of the department, one faculty member and class representatives isformed each year.

5.3.7   Details of student representatives in Board of Studies, various academic and administrative bodies :

Meetings of HOD with class representatives is held regularly. Their suggestions on various departmental issues are given due weightage

5.3.8 Any other information regarding Student Support and Progression which the university would like to include.

CRITERION VI: GOVERNANCE, LEADERSHIP AND MANAGEMENT

6.1   Institutional Vision and Leadership

6.1.1   State the vision and the mission of the department in line with the University

6.1.2   Mission statement definition for the department's distinctive characteristics in terms of addressing the needs of the society, the students it seeks to serve, the institution's tradition and value orientations, its vision for the future,

The mission statement of the school is in line with the preamble that we strive to created skilled manpower in the broad technological domains of Embedded systems, Spatial technology and Mobile Computing. All these three areas are on the forefront of electronics technology domain and cater to various aspects of societal needs such as consumer electronics and appliances.

6.1.3   Write-up of

* ensuring the organization's management system development, implementation and continuous improvement
* interacting with its stakeholders

    The interaction with stakeholders takes place in the form of formal alumni meeting that our school organizes once a year typically. Interaction with peers takes place in a formal way – by organizing seminars or group discussions.

* Reinforcing a culture of excellence

    The department strives to maintain and create newer technical facilities for departmental laboratories. This is supported generously by UGC funding and other funding. The labs and library are kept open at all times for the budding engineers of our department. Faculty and staff do participate in many workshops/ conferences so as to build concepts in the technologically challenging aspects.

* identifying organizational needs and striving to fulfill them

    The organization needs are mainly categorized in (a) having adequate faculty (b) Having trained and skilled technical staff (c) Modern departmental library and (d) Well equipped laboratories. The department does fare well on the above counts.

6.1.4   Records of Departmental and other committees meetings

The participative culture of our school is inclusive in that even the staff at the bottom is engaged in advisory role for the betterment of infrastructural facility maintenance. The faculty of department holds a meeting – twice a month on an average- to chalk out strategies for smooth running of academic work in a given semester. Similarly, HOD also holds a meeting with non-teaching staff to understand and remove difficulties, if any while carrying out experimental work in the laboratories.

6.1.6   Write-up of a culture of participative decisions in the department All the major decisions are taken after discussion in faculty meeting. The outcomes and record of meeting is noted in the meeting – register.

6.1.7   Record of Grooming leadership at various levels

As a matter of practice, faculty members up to level of lecturers are being assigned important administrative work   by throwing HOD's

confidence to their side and most of them carry out assigned task very efficiently and that too in an independent manner. The variety of work – academic and administrative- carried out by our junior and senior faculty – spread over a period of time- are well documented and kept in record.

6.1.10   Record of knowledge management strategy

6.1.11   Write up on
*   Contributing to national development

Our alumni and final year M Tech students are serving many MNC's and national laboratories, thus making a great contribution in the national development.

*   Fostering global competencies among students

We keep on updating our curriculum keeping the ltest technology in the syllabi while deleting obsolence from them. This results into delivery of state of art knowledge in the special technical domain.

*   Inculcating a sound value system among students

Our department believes in transferring value system from teachers to students. Our teachers and staff are punctual, regular and well meaning for the sake of student's cause. This value system is automatically transferred to students when they interact with such group of dedicated faculty in the department.

*   Promoting use of technology

Each M Tech and M Sc course has its own newsgroup created on the web. All assignments and important instruction are communicated by teachers/HOD through newsgroup. In addition, departmental building is full Wi-Fi enabling students to download lectures on their Laptop/Tablets easily.

*   Quest for excellence

The department keeps on getting involved in cutting edge are of research and development and the quest of excellence is a natural outcome of it.

6.2   Strategy Development and Deployment
6.2.1   Perspective plan for development and write-up of policies and strategies to
*   work for Vision and for achieving the mission

The vision and mission of the department summarizes to creating worthy manpower to cater the area of embedded systems, wireless network and geo-informatics. The three M Tech courses and two M Sc programmes are essential steps in realizing vision and mission set for our department.

∗ Enhancing Teaching and learning

Each course taught in our department is primarily focussed on integration of software with hardware. The software skills of electronics students are generally found to be subtle and hence a great exercise in terms of organizing domain specific expert lectures. This greatly enhances teaching-learning process. Students enrolled in our department come across the country. Naturally there are some language and culture barrier among them which are tackled with imparting soft skill classes to create a homogenous gathering. This also has good impact on teaching learning process.

∗ Enhancing Research and development

M Tech students are assigned small classroom projects so that they can be trained with tools- both software and hardware. This helps them in taking up bigger research oriented one year project as a part of their curriculum. Individual faculty members are encouraged to take minor and major research projects

∗ Enhancing Community engagement

Academic community and fraternity are always consulted and engaged in delivering expert lectures for our students and faculty.

∗ Enhancing Human resource planning and development

Human resource of the department such as faculty and students of the department are encouraged to take up newer academic projects pertaining to their expertise. Department provides necessary equipment and contingent expenses.

∗ Enhancing Industry interaction

The interaction with industry of our department is all time high in that all of our M Tech students find 100% internship with them. They also provide stipend to the tune of Rs. 20,000 on an average to our students. One completion of one year project with them (internship), almost all of them are absorbed for placement there itself.

∗ Enhancing Internationalisation: NIL

6.2.2 Departmental organizational structure and decision making processes and their effectiveness.

The department function under active leadership of HOD but departmental functions are governed by ordinance 31 of the university which mandates constitution of departmental committee to take decisions on matters pertaining to academic nature.

6.2.3   Write up of functioning independently and autonomously and ensure accountability

6.2.5   Record of last four years, have there been any instances of court cases filed by and against the department, What were the critical issues and verdicts of the courts on these issues : NIL

6.2.6   Performance audit of the department by external experts

6.3   Faculty Empowerment Strategies

6.3.1   Outcome of the reviews of self appraisal and PBAS and important decisions taken on that

Reviews on self-appraisal and PBAS are generally considered for the cases of CAS promotions of individual faculty. However, PBAS scores are discussed in the departmental committee comprising of all professors, senior most reader and senior most lecturer. The fall in PBAS score, if any, specially pertaining to category III (Research and Development) are taken seriously and suitable counseling of the concerned faculty is done so that he/she continues to do good research work and thus increase PBAS score.

6.3.3   List of teachers availing welfare schemes available for teaching and non-teaching staff. NONE

6.3.4   List and number of attracted and retained eminent faculty in last 4 years : NIL

6.3.5   Gender audit during the last four years of the department achievements and pass percentages and its salient findings.

6.4   Financial Management and Resource Mobilization

6.4.1   Statements of audited income and expenditure of academic and administrative activities of the last four years.

The annual report of the university is enclosed

4.2.7   Efforts taken by the department for resource mobilization.

This issue pertains with university administration

6.4.6   Record of endowment funds created

This issue pertains with university administration

6.5   Internal Quality Assurance System

6.5.1   Details of department internal quality assurance and sustenance system, give

details.

As per NAAC guidelines, a departmental IQAC has been constituted with following members:

1. Dr. Abhay Kumar, Prof. & Head, Chairman
2. Dr. Sumant Katiyal, Prof & Director, CDC
3. Dr. Manju Chattopadhyay, Coordinator
4. Ms. Kirti Panwar

6.5.2   Internal workshops to improve teaching, learning and evaluation
Many IQAC sponsored workshops are conducted in the university and our faculty members have participated in them.

6.5.3   Record of continuously review the teaching learning process
Done Through feedback process.

6.5.4   Any other information regarding Governance, Leadership and Management which the university would like to include.

CRITERIA VII: INNOVATIONS AND BEST PRACTICES

7.1   Environment Consciousness

7.1.1   Department Area Green Audit details

7.1.2   Departmental initiative to make the campus eco-friendly?

* Energy conservation :
  The department has very few number of AC's installed (Only 04), therefore energy gets conserved

* Use of renewable energy : NIL

* Water harvesting: Yes

* Check dam construction :no

* Efforts for Carbon neutrality:no

* Plantation : A large number of samples have been planted in the recent past. The surrounding of the department is lush green with flowery plants overshadowing all across.

* Hazardous waste management: NA

* e-waste management: A e-waste disposal mechanism is in place in the university where every UTD gets the e-waste disposed through Store's subsection of the university.

* any other (please specify)

7.2   Innovations

7.2.1   Give details of innovations introduced during the last four years which have created a positive impact on the functioning of the department
Following are the innovations introduced over a period of time:

ii.   Creation of Smart Classroom: One of the classroom in the department was converted into smart classroom wherein an interactive whiteboard was installed. This facilitates teacher and learner both in terms of flexibility of imparting knowledge with ease.

iii.   Multimedia Classrooms: all the classrooms and labs of the department has been fitted with multimedia projectors. Now the delivery of lectures are mostly through powerpoint presentations.

All the above measures have created positive impact in the teaching learning process.

7.3   Best Practices

7.3.1   Give details of any two best practices which have contributed to better academic

and administrative functioning of the department.

iv.   Credit based system

The school follows credit based academic system which helps in specifying hours of teaching, tutorials, and lab hours. This also allows adoption of CCE pattern of evaluation of students enrolled

v.   Conduct of Special Lectures, Seminars etc

During a given semester, numerous expert lectures are organized in specific domains in the form of seminar and expert lecture series for the benefit of students. Besides, university also organizes lecture series on many occasions on topics like: Personality development, Career counseling, Environment etc.

1. Format for Record of Best Practices of the department

1. Title of the Practice

    This title should capture the keywords that describe the practice.

    The best practices followed in the department are:

    i   Credit based system

    The school follows credit based academic system which helps in specifying hours of teaching, tutorials, and lab hours. This also allows adoption of CCE pattern of evaluation of students enrolled

    ii   Design and updation of curriculum

    Under ordinance 31, department has been vested power of design, develop and modify the course content, addition/deletion of courses. This is done through a departmental committee meeting- wherein a curriculum of all the courses are discussed at length- followed by peer review by experts and other stakeholders before finalizing syllabi for a particular course.

    vi.   Transparency in Evaluation

    Every subject taught is evaluated in terms of conduct of two unit tests and one major tests, apart from quizzes and assignments. Each such activity is evaluated with suitable weightage and all test answer sheets are displayed to students for discussions and analysis. This also removes chances of re-evaluation.

    vii.   Conduct of Special Lectures, Seminars etc

    During a given semester, numerous expert lectures are organized in specific domains in the form of seminar and expert lecture series for the benefit of students. Besides, university also organizes lecture series on many occasions on topics like: Personality development, Career counseling, Environment etc.

    viii.   Departmental Faculty meeting

    Under ordinance 31 of the university governing academic and administrative matters of UTD, there is a provision of departmental committee which advices HOD on academic related matters. This departmental committee -consisting of all professors, senior most reader and senior most lecturer - deliberate over all major academic issues and concerns. Meeting of departmental committee is held regularly.

2. Objectives of the Practice

What are the objectives / intended outcomes of this "best practice" and what are the underlying principles or concepts of this practice (in about 100 words)?

The objectives are the following:

The academic environment of the department should be not only student's friendly, but also should strive to motivate them to learn newer concepts. The credit based semester system followed in our department is boon in following tight scripted academic calendar supplemented by timely declaration of results. The need of re-evaluation does not arise since all answer sheets are shown to students for their analysis and satisfaction, which in turn is a time saving proposition. Slow learners in a particular course are identified continuously on the basis of marks secured in unit tests, and are thus highly enriched by attending seminars and expert lectures conducted in the department over a period of time.

3.   The Context

What were the contextual features or challenging issues that needed to be addressed in designing and implementing this practice (in about 150 words)?

Some of the challenging issues are:

i.   Commencement of session in time

The department has ensured that admission–cum-counseling process should end up by last week of June every year so that regular classes could begin in the first week of July every year. This is in fact a daunting task which has been taken care of by the department by way of speedy processing of the data.

ii.   Maintenance of homogeneity in learning

The courses being run in the school draws students from varied disciplines such as computer science, Electronics and instrumentation. The content of every course maps about 40% of software aspects and 60 % of hardware aspects. The students belonging to computer science discipline feel comfortable in their domain of subjects whereas students of communication and instrumentation feel comfortable in their domain. To get all students even on the platform of academic content delivery, it is felt prudent to familiarize all students across domain so that there is left no scope of producing 'slow learners'. This is achieved by way of pre-sem preparations in which basics of courses across domain are delivered in initial 2-3 weeks time.

iii.   Identifying slow learners

Slow learners, if any, are identified based upon their scores in the unit test and quizzes conducted over span of semester. Remedial classes and /or expert lectures and seminars are organized to bring confidence in them. It has been seen that performance of such 'slow learners' bounce back to greater levels.

4.   The Practice

Describe the practice and its uniqueness in the context of India higher education. What were the constraints / limitations, if any, faced (in about 400 words)?

Many universities in India are yet to implement semester based and credit based academic system – a unique proposition in our record. Transparency in evaluation is another benchmark feature of ours which are rarely found at other Universities. Also, we have a student feedback system in place wherein we gather feedback data from students for all subjects taught in a particular semester and the data is also analyzed for the sake of record. We also follow Mentorship for individual or a group of students for necessary counseling of students.

5.   Evidence of Success

Provide evidence of success such as performance against targets and benchmarks, review results. What do these results indicate? Describe in about 200 words.

Some of the bench mark criterion of academic success

i.   Project Placement (Internship): Almost all of our M Tech students (96%) undergo internship in leading MNC's and national laboratories.

ii.   Placements: Our students get 100% placements both in campus and off campus. In fact, students serving as internee in MNC's, get absorbed there itself after completion of one year project work.

iii.   Pass percentage: The pass percentage of our students are 100%. About 30 % students pass with distinction every year. This achievement is achieved because of continuous academic monitoring of slow learners and adequate academic support provided to them.

6.   Problems Encountered and Resources Required

Please identify the problems encountered and resources required to implement the practice (in about 150 words).

We have been implementing best practices over last many years and therefore, system has been streamlined now and we no more face any obstacle worth mentioning.

7.   Notes

Optional. Please add any other information that may be relevant for adopting/ implementing the Best Practice in other institutions (in about 150 words).