Evaluative Report of the Department - A

1. Name of the Department School of Electronics

2. Year of establishment : 1990

3. Is the Department part of a School/Faculty of the university? Yes

4. Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.) :

   1. Ph.D
   2. M.Tech(Embedded Systems)
   3. M.Tech(Spatial Information Technology)
   4. M.Tech(Mobile Computing Technology)
   5. MSc(Electronics)
   6. MSc(Electronics & Communication)

5. Interdisciplinary programmes and departments involved : Some Subjects are taught with School of Computer Science

6. Courses in collaboration with other universities, industries, foreign institutions, etc. None

7. Details of programmes discontinued, if any, with reasons : None

8. Examination System: Annual/Semester/Trimester/Choice Based Credit System: Semester wise

9. Participation of the department in the courses offered by other departments

10. Number of teaching posts sanctioned, filled and actual (Professors/Associate

<table>
<thead>
<tr>
<th>Positions</th>
<th>Teaching faculty</th>
<th>Non-teaching staff</th>
<th>Technical staff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professor</td>
<td>Associate Professor</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Sanctioned by the UGC / University / State Government</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Recruited</td>
<td>1+1(CAS)</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Yet to recruit</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Positions</td>
<td>Teaching faculty</td>
<td>Non-teaching staff</td>
<td>Technical staff</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------</td>
<td>--------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Number of faculty &amp; non-teaching staff working on contract basis</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Qualification</th>
<th>Designation</th>
<th>Specialization</th>
<th>No. of Years of Experience</th>
<th>No. of Ph.D. students guided for the last 4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Raj Kamal</td>
<td>Ph.D.</td>
<td>Professor (Associate jointly with SCSIT)</td>
<td>Embedded Systems, Mobile Computing, High Performance Computing</td>
<td>41</td>
<td>6</td>
</tr>
<tr>
<td>Dr. S. Katiyal</td>
<td>Ph.D.</td>
<td>Professor</td>
<td>VLSI, Control Systems</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Dr. A. Kumar</td>
<td>Ph.D.</td>
<td>Head &amp; Professor</td>
<td>DSP, Analog &amp; Digital Communication</td>
<td>21</td>
<td>1</td>
</tr>
<tr>
<td>Ms. P. Umale</td>
<td>M.E.</td>
<td>Assistant Professor (Stage 2)</td>
<td>Digital Communication</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Dr. Manju K. Chattopadhyay</td>
<td>Ph.D.</td>
<td>Assistant Professor (Stage 2)</td>
<td>Semiconductor Device Modeling, CMOS &amp; VLSI Design, ARM uC</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Ms. Kirti Panwar</td>
<td>M.Tech.</td>
<td>Assistant Professor (Stage 2)</td>
<td>Mobile Computing</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Dr. Alka Dubey</td>
<td>Ph.D.</td>
<td>Lecturer (Contractual)</td>
<td>uC 8051</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mr. Manoj Lokre</td>
<td>M.Tech.</td>
<td>Lecturer (Contractual)</td>
<td>Spatial Analysis</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>
12. List of senior Visiting Fellows, 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

13. Percentage of classes taken by temporary faculty – programme-wise information
   For M.Tech. courses: 20% for session 2013-14. For M Sc courses: 10% for session 2013-14

14. Programme-wise Student Teacher Ratio : 20:1

15. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual

<table>
<thead>
<tr>
<th>Positions</th>
<th>Non-teaching staff</th>
<th>Technical staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanctioned by the UGC / University / State Government</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Recruited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yet to recruit</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Number of persons working on contract basis</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

16. Research thrust areas as recognized by major funding agencies: Embedded Systems, Mobile Computing Technology, Digital Signal Processing

17. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.
   UGC Sponsored Innovative Programme: Mobile Computing
18. Inter-institutional collaborative projects and associated grants received
   a) National collaboration  b) International collaboration

   None in past 4 years

19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received.

   UGC Sponsored Innovative Programme: Mobile Computing Technology Programme. Grant Received: 50 lacs (In last 4 years)

20. Research facility / centre with

   - state recognition
   - national recognition
   - international recognition

   None

21. Special research laboratories sponsored by / created by industry or corporate bodies

   None in last 4 years

22. Publications:

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

   Year-wises Publications in the department:

   2012-13


   5. Suvarna Joshi and Abhay Kumar, Feature extraction using DWT with


2011-12

Books Published


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


International Journal


24. Quantitative Analysis of Spin hall effect in Nanostructures”, accepted for publication in BJIIT, “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 BJIIT, “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.


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

National Journal

2010-11

Books Published


Journal Papers

Dr. Raj Kamal


48. 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

49. 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


52. Simulation and Synthesis of Synchronous Optical Network Standard


**International Conference Papers**


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
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

National Journal

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
2009-10


78. 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

79. 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


International Conference Papers


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


99. 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

100. 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


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

103. 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


2008-09

107. 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

108. 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 “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. Kirti Panwar, Ashwini S. Patankar “Can 3G Affirm Security


114. “Mobile Location Based Services using XML” at geomatrix’09 in IIT Bombay, dated 29 Feb – 1 March.


121. 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.

- Monographs
- Chapters in Books
- Edited 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 : 0.5
- h-index
23. Details of patents and income generated: None

24. Areas of consultancy and income generated: Embedded Systems

25. Faculty selected nationally / internationally to visit other laboratories / institutions/industries in India and abroad: None

26. Faculty serving in
   a) National committees
   b) International committees
   c) Editorial Boards
   d) any other (please specify)
   1. Dr. Rajkamal, Dr. S. Katiyal, Dr. A. Kumar serve as Technical Support committee of many Conferences
   2. Dr. S. Katiyal, Dr. Manju K. Chattopadhyay serving as member, Board of Studies, Holkar Science College, Indore
   3. Dr. A. Kumar Serving as Dean, Faculty of Engineering Science
   4. Ms. P. M. Umale Serving as member, Board of Studies, Electronics Science.

27. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).
   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

28. 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%

29. Awards / recognitions received at the national and international level by
   • Faculty: Nil

   Doctoral / post doctoral fellows: Following students working for their Ph.D. under Prof Raj Kamal as supervisor, got recognition as following details:


• 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

30. Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any.

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


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

31. 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
32. Student profile programme-wise:

<table>
<thead>
<tr>
<th>Name of the Course</th>
<th>Applicati ons received</th>
<th>Selected Male</th>
<th>Selected Female</th>
<th>Pass percentage Male</th>
<th>Pass percentage Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.Tech.</td>
<td>525</td>
<td>50</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.Sc. Electronics &amp; Communicatio n</td>
<td>21</td>
<td>14</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.Sc. Electronics</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

33. Diversity of Students

<table>
<thead>
<tr>
<th>Name of the Course</th>
<th>% of students from the same university</th>
<th>% of students from other universities within the State</th>
<th>% of students from universities outside the State</th>
<th>% of students from other countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.Sc.</td>
<td>10%</td>
<td>10%</td>
<td>80%</td>
<td>Nil</td>
</tr>
<tr>
<td>M.Tech.</td>
<td>5%</td>
<td>70%</td>
<td>25%</td>
<td>Nil</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Year</th>
<th>NET</th>
<th>GATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>2010</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2011</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>2012</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>2013</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

35. Student progression

<table>
<thead>
<tr>
<th>Student progression</th>
<th>Percentage against enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG to PG</td>
<td>NIL</td>
</tr>
<tr>
<td>PG to M Tech</td>
<td>7</td>
</tr>
<tr>
<td>PG to Ph.D.</td>
<td>1</td>
</tr>
<tr>
<td>Ph.D. to Post-Doctoral</td>
<td>NIL</td>
</tr>
<tr>
<td>Employed</td>
<td></td>
</tr>
<tr>
<td>• Campus selection</td>
<td>100</td>
</tr>
<tr>
<td>• Other than campus</td>
<td>80</td>
</tr>
<tr>
<td>Student progression</td>
<td>Percentage against enrolled</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>recruitment</td>
<td></td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td>NIL</td>
</tr>
</tbody>
</table>

36. Diversity of staff

<table>
<thead>
<tr>
<th>Percentage of faculty who are graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>of the same university</td>
</tr>
<tr>
<td>from other universities within the State</td>
</tr>
<tr>
<td>from universities from other States</td>
</tr>
<tr>
<td>from universities outside the country</td>
</tr>
</tbody>
</table>

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period: 2 Students were awarded M. Tech. Degree

38. Present details of departmental infrastructural facilities 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

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

a) from the host institution/university
   1. Parag Parandkar
   2. Kapil Kushwah
   3. Anoop Tiwari
   4. Namit Gupta

b) from other institutions/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
40. Number of post graduate students getting financial assistance from the university.
   13 students in each M.Tech. course i.e. A total of 39 students receive AICTE stipend each year.

41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.
   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)

42. Does the department obtain feedback from
   a. Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?
      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?
      Feedback 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.

43. 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.

44. Give 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.


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.

2. UGC Sponsored “National Workshop on Mobile System Programming (NWMS - 2012)” on 10th – 11th Feb, 2012. Expert was Dr. S.R.N Reddy from IGIT, Indraprashtha University, New Delhi


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

45. List the teaching methods adopted by the faculty for different programmes.

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

46. How does 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

<table>
<thead>
<tr>
<th>Roll No.</th>
<th>Name of student</th>
<th>Grade</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>10MTMCT01</td>
<td>ANURAG CHATURVEDI</td>
<td>REPORT NOT SENT</td>
<td></td>
</tr>
<tr>
<td>10MTMCT02</td>
<td>ARVIND KUMAR MADHESHPA</td>
<td>REPORT NOT SENT</td>
<td></td>
</tr>
<tr>
<td>10MTMCT03</td>
<td>CHANDRA SHEKHAR GOHIYA</td>
<td>C+</td>
<td>1. No work done reported for Jan 2. Send snap shots of results for the month of Feb</td>
</tr>
<tr>
<td>10MTMCT04</td>
<td>DEEPAK BICHOLIA</td>
<td>C+</td>
<td>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</td>
</tr>
<tr>
<td>10MTMCT05</td>
<td>JITENDRA NANDIYA</td>
<td>D</td>
<td>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</td>
</tr>
<tr>
<td>10MTMCT06</td>
<td>KRISHNA CHAITANYA T.</td>
<td>B+</td>
<td>1. Work seems to be done jointly with Pravin Thogarla. Joint project is not acceptable 2. Write a different suitable title of your project</td>
</tr>
<tr>
<td>10MTMCT07</td>
<td>MAYANK SHUKLA</td>
<td>A</td>
<td>Performance is ok</td>
</tr>
<tr>
<td>10MTMCT08</td>
<td>MEENAKSHI AKHAND</td>
<td>D</td>
<td>Unsatisfactory work</td>
</tr>
<tr>
<td>10MTMCT09</td>
<td>NEETI SAXENA</td>
<td>C</td>
<td>1. Title is not suitable. Give appropriate title to your work 2. Elaborate your work and send results obtained so far 3. No progress is seen monthwise</td>
</tr>
<tr>
<td>10MTMCT10</td>
<td>NITIN KUMAR GHARIA</td>
<td>B+</td>
<td>1. Title is not suitable. Give appropriate title to your work 2. Elaborate your work and send results obtained so far</td>
</tr>
<tr>
<td>10MTMCT11</td>
<td>PRAVEEN THOGARLA</td>
<td>B+</td>
<td>Performance is ok</td>
</tr>
<tr>
<td>10MTMCT13</td>
<td>RAHUL DUBEY</td>
<td>C</td>
<td>1. Report for Feb not received 2. Actual work done by you is unclear</td>
</tr>
<tr>
<td>10MTMCT14</td>
<td>RITU CHHALILORE</td>
<td>-</td>
<td>1. Title need to be specific and well meaning 2. Elaborate your work in 100 words</td>
</tr>
<tr>
<td>10MTMCT15</td>
<td>RITU VERMA</td>
<td>C+</td>
<td>1. Title need to be specific and well meaning 2. Mention name of month w.r.t. point no.5 3. Send snapshots of results</td>
</tr>
<tr>
<td>10MTMCT16</td>
<td>RUPALI PATIL</td>
<td>REPORT NOT SENT</td>
<td></td>
</tr>
<tr>
<td>10MTMCT17</td>
<td>SHASHWATI MUSALGAOKAR</td>
<td>A</td>
<td></td>
</tr>
</tbody>
</table>
47. Highlight the participation of students and faculty in extension activities.

Students participate in Blood donation camps and other charity programs. They 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.

48. Give 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.

49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details. Nil.

50. Briefly 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:

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)

(c) M.Tech. (Mobile Computing Technology)
Specialization: Mobile System Programming – Python, Advanced Java, Mobile Computing, Mobile Communication, DSP

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

(e) M.Sc. (Electronics)
Specialization: Microcontrollers, VLSI Design & Embedded Systems.

51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

**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.

52. 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 IIT 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.
Write up of efforts for Quality Sustenance and Assurance in the department- B

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


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.
Declaration by the Head of the Department- C

I certify that the data included in this Self-Study Report (SSR) are true to the best of my knowledge.

This SSR is prepared by the institution after internal discussions, and no part thereof has been outsourced.

I am aware that the Peer team will validate the information provided in this SSR during the peer team visit.

Place: Indore
Date: 26 Aug 2013