1 Name of the Department : School of Energy and Environmental Studies
Faculty of : Engineering Sciences

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 |
|---|---|---|
| PG | 01 | M. Tech (Energy Management) |
| M.Phil. | 01 | Energy and Environment |
| Ph.D. | 02 | a. Energy<br>b. Energy and Environment |
| Total | 04 | |

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 first time and Last Academic Year recognitions

(a) M. Tech Energy Management: Letter of Approval (LOA) of AICTE
(b) M. Tech Energy Management: Letter of Extension of Approval(EOA)
(c) M. Phil Energy and Environment: Letter of Approval of UGC

If the department offers Distance Education
Programmes (DEP) then Number of programmes offered: 01
Name of Each Programme : Energy Management (3 years)

(d) Letters for approvals by the Distance Education Council: IGNOU Letter

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

File No A.2

A.3 Number of working days during the last academic year-2011-12 215

Number of teaching days during the past four academic years

| | | | |
|---|---|---|---|
| 217 | 213 | 214 | 214 |

(Teaching days' means days on which classes were engaged. Examination days are not to be included)

| **Number of working days in Academic year 2011-12** | | | | | | |
|---|---|---|---|---|---|---|
| *Months* | *July* | *Aug* | *Sept* | *Oct* | *Nov* | *Total working days* |
| I semester | 25 | 23 | 26 | 23 | 24 | 121 |
| *Months* | *Jan* | *Feb* | *Mar* | *Apr* | | |
| II Semester | 25 | 23 | 24 | 22 | | 94 |
| Total Number of working days | | | | | | **215** |
| **Number of working days in Academic year** 2010-11 | | | | | | |
| *Months* | *July* | *Aug* | *Sept* | *Oct* | *Nov* | *Total working days* |
| I semester | 26 | 25 | 24 | 24 | 24 | 123 |
| *Months* | *Jan* | *Feb* | *Mar* | *Apr* | | |
| II Semester | 23 | 22 | 26 | 20 | | 91 |
| Total Number of working days | | | | | | **214** |
| **Number of working days in Academic year 2009-10** | | | | | | |
| *Months* | *July* | *Aug* | *Sept* | *Oct* | *Nov* | *Total working days* |
| I semester | 26 | 23 | 24 | 25 | 23 | 121 |
| *Months* | *Jan* | *Feb* | *Mar* | *Apr* | | |
| II Semester | 24 | 22 | 23 | 24 | | 93 |
| Total Number of working days | | | | | | **214** |
| **Number of working days in Academic year** 2008-09 | | | | | | |
| *Months* | *July* | *Aug* | *Sept* | *Oct* | *Nov* | *Total working days* |
| I semester | 26 | 24 | 25 | 24 | 24 | 123 |
| *Months* | *Jan* | *Feb* | *Mar* | *Apr* | | |
| II Semester | 24 | 22 | 22 | 22 | | 90 |
| **Total Number of working days** | | | | | | **213** |
| **Number of working days in Academic year** 2007-08 | | | | | | |
| *Months* | *July* | *Aug* | *Sept* | *Oct* | *Nov* | *Total working days* |
| I semester | 26 | 25 | 24 | 26 | 24 | 125 |
| *Months* | *Jan* | *Feb* | *Mar* | *Apr* | | |
| II Semester | 24 | 24 | 22 | 22 | | 92 |
| Total Number of working days | | | | | | **217** |

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 | | | | | |
| *Recruited* | 01 | 01* | 01** | 02 | nil |
| *Yet to recruit* | 02 | 01 | 02 | | |
| Number of persons working on contract basis | nil | nil | 04 | 02 **(01 Vacant)** | 01 |

**Promoted to Professor under CAS from Associate Professor*
*** Promoted to Associate Professor under CAS from Assistant Professor*

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. | *nil* | *nil* | *nil* | *nil* | *nil* | *Nil* | *nil* |
| Ph.D. | **02** | 00 | 00 | **01** | 00 | 00 | **03** |
| M.Phil. | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| PG | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| Temporary teachers | | | | | | | |
| Ph.D | *nil* | *nil* | *nil* | *nil* | *nil* | **01** | **01** |
| M. Phil | *nil* | *nil* | *nil* | *nil* | *nil* | *nil* | *nil* |
| PG | *nil* | *nil* | *nil* | *nil* | **02** | **01** | **03** |
| Part-time teachers (Courses Visiting Faculty) | | | | | | | |
| Ph.D. | **01** | *nil* | *nil* | *nil* | *nil* | *nil* | *nil* |
| M.Phil | *nil* | *nil* | *nil* | *nil* | *nil* | *nil* | *nil* |
| PG | *nil* | *nil* | *nil* | *nil* | *nil* | *nil* | *nil* |

Emeritus, Adjunct and Visiting Professors and their sanctions

| | Emeritus | Adjunct | Visiting |
|---|---|---|---|
| Number | ----- | ----- | 01<br>Prof M.S. Sodha |

School is honoured with association of Padamshri Prof M.S.Sodha D.Sc. , F.N.A as vising professor (Acadmic Council decision,1996).

Semester-wise Record of Courses Visiting Faculty and their Sanctions

| S. No. | Academic Session | SEM | Course | Name | No of hr taken by VF | Num of hours in sem. |
|---|---|---|---|---|---|---|
| 1 | 2007-08 | III | Energy Conservation (Electrical Systems) | Mr Yogesh Pahariya | 40 | 64 |
| | | III | Electrical Power generation Transmission & distribution | Mr Yogesh Pahariya | 36 | 56 |
| | | I | Instrumentation, Measurements and Controls | Mr Ravi Sindal | 51 | 56 |
| | | III | Energy Conservation Lab | Mr. VVS Murthi | 42 | 96 |
| 2 | 2008-09 | II | Energy Conservation (Electrical Systems) | Prof Y. Pahariya | 36 | 48 |
| | | I | Information Technology For Energy Managers & energy Softwares | Mahendra Joshi | 48 | 50 |
| | | III | Energy Conservation (Electrical Systems) | Mr Yogesh Pahariya | 36 | 56 |
| | | I | Instrumentation, Measurements and Controls | Mr. Ravi Sindal | 46.5 | 59 |
| 3 | 2009-10 | II | Energy Conservation (Electrical Systems) | Mr Yogesh Pahariya | 30 | 30 |
| | | II | Instrumentation, Measurements and Controls | Mr D. S Bais | 12 | 30 |
| | | II | Instrumentation, Measurements and Controls | Mr Parag Parandkar | 10 | 30 |
| 4 | 2010-11 | II | Engineering Thermodynamics : Quality & Quantity Aspects | Mr. P. Yadav | 32 | 32 |
| | | I | Mass transfer | Mr. P Yadav | 44 | 45 |
| | | II | Energy Auditing Techniques | Mr. N. Baroniya | 22.5 | 22.5 |
| | | II | Energy Conservation (Electrical Systems) | Mr. N. Baroniya | 37.5 | 37.5 |
| | | II | Energy Conservation Lab | Mr. N. Baroniya | 24 | |
| 5 | 2011-12 | I | Energy Auditing Techniques | Mr. N. Baroniya | 34.5 | 34.5 |
| | | I | Electrical Power generation Transmission & distribution | Mr. N. Baroniya | 48 | |
| | | III | Energy Conservation process in designated Industries | Mr. N. Baroniya | 58.5 | 58.5 |
| | | II | Research Methodology | Dr Shakti Banerjee | 28 | 31 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | II | Engineering Thermodynamics : Quality & Quantity Aspects | Mr. Jai Balwanshi | 30 | 24 |
| 6 | 2012-13 | II | Energy Auditing & Conversion Technology | Mr. N. Baroniya | 52.5 | 52.5 |
| | | II | Energy Conservation (Electrical Systems) | Mr. N. Baroniya | 57 | 57 |
| | | III | Instrumentation, Measurements and Controls | Dr Ajay Verma | 29 | 57 |
| | | I | Electrical Power Generation, Transmission and Distribution | Narotta Baroniya | 51 | 51 |
| | | I | Energy Auditing Techniques | Narottam Baroniya | 28.5 | 28.5 |
| | | II | Engineering Thermodynamics : Quality & Quantity Aspects | Mr Jai Balwanshi | 28 | 24 |

A.6 Copies of Latest Biodata of Faculty in positions in the Department

**File No. A.6**

A . 7 1. Copies of Yearly Performa Based Assessment Records of Faculty in positions in the Department

**File No. A.6**

A.7 1. Copies of Yearly Performa Based Assessment Records of Faculty in Positions in the Department

File No. A.7.1

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

| | Sanctioned | Filled |
|---|---|---|
| Professor | **03** | **01** |
| Associate Professors | 02 | 01 |
| Asst. Professors | 02 | 01 |

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 S.P.Singh | Ph. D | Professor | • Green Buildings/ Solar Passive Buildings<br>• Evaporative Air Conditioning<br>• Solar Thermal Systems<br>• Biomass Conversion Technologies<br>• Decentralized Energy Planning for Rural Development<br>• Energy and Environmental Management | 30 | 05 |
| Dr R. N. Singh | Ph. D | Professor | • Gasification<br>• Renewable Energy | 18 | 00 |
| Dr Rubina Chaudhary | Ph. D | Associate Professor | • Hazardous Waste Manaement<br>• Water and Waste Water Teatment Technologies<br>• Solar Detoxification | 22 | 03 |

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

| S.No | Expert Name | Specialization | Address |
|---|---|---|---|
| 1 | Mr. Sudhir Mohan | Present and Future application of Renewable Energy Systems | Scientist-G / Advisor ; Ministry of New and Renewable Energy, GOI; Remote Village Electrification Programme – I Office : Block No. 14, CGO Complex, Lodi Road, New Delhi Tel. : 24360404, Fax : 24361298 Off:+91-11-24362267, Res: +91-11-26160318 Email: sudhirmohan@nic.in |
| 2 | Mr. A.V. Dinesh | Energy Conservation in Electrical Systems | Devki Energy Consultancy Pvt. Ltd.; 405, Ivory Terrace, R.C. Dutta Road, Alkapuri , Vadodara – 390007 Phone: -0265-2354813, 2330636, 2354813 (Fax), Email-devkienergy@sify.com |
| 3 | Prof. R.H. Siddique | Fundamentals of Biological Treatment and Advanced Biological System - UASB" Anaerobic Process – UASB and their applications" | Dara – Hasan Muzammil Manzil Civil Lines Dodhpur; Aligarh-202002 0571-2702918 |
| 4 | Mr. O.P. Mittal | (i) Energy Saving Potential in Cement Processing (ii) Energy Saving Opportunity in Services Used in Cement Industry" | M.D., Pluton Cements 112, Janaki Nagar, Indore Phone – 2461633, 246613, Mobile No. 98270-27992 |
| 5 | Mr. Shantanu Bandhopadhya | Process Integration ,Pinch Analysis Industrial Energy Conservation Modeling and Simulation of Processes | Energy Systems Engineering; Indian Institute of Technology Mumbai, Powai, Mumbai Postcode 400076 Maharashtra, INDIA Email Id. head.ese@iitb.ac.in Phone+91-22-25767883 Fax+91-22-25726875, Mob. 9869321000 |
| 6 | Mr. Roy Choudhary | About Metal Processing and energy conservation | Manager, Hindustan Aeronautics Ltd. Post Box No. 1791, Bangalore; Ph.080-25234610, |

| | | | |
|---|---|---|---|
| | | opportunities in Metal Processing Industries" | 25227894 |
| 7 | Dr. S. B. Sadananda | Energy Conservation measures one each in any of the three designated industries | Chief Consultant, NPC, Novelty Chambers, 7th Floor Grant Road, Mumbai-400007 ; Phone – 022-23071322, 23002924, Fax – 022-23073323 (R) 022-26651780 Email – npcmum@vsnl.net |
| 8 | Mr. Sumit Goyal | "Explaining the online control systems and the potential of their application in Industries" | General Manager, Connectgals.com; Plot No. 70 A, EHTP, Sector -34, Gurgaon – 122 004, Haryana, Mobile : 09811305468, Ph: 0124-4129900 Fax: 0124-4129999 Email : sumitg@plgsystel.com |
| 9 | Mr. Gajanan Yadav | "Wind Energy Technologies" | Assistant Manager-Service, Enercon (India) Ltd.;41, Shivaji Nagar, Near Sal Tax Office;Dewas-455001 (M.P.);Ph: 07272-253832, Mobile: 9981500612 (R) 07292-505152, Site: 09893304458 Email: gajanan.yadav@enerconindia.net |
| 10 | Mr P.K. Saxena | "Hydro Power Plant" | Dy. Manager (Electrical); Narmada Hydroelectric Development Corporation Ltd., Indira Sagar Power Station; PO Narmada Nagar Khandwa 450 119 (MP); Ph: 07323: 284723 Fax: 07323 284723/284080; M: 94259-52521 |
| 11 | Mr Jai Prakash | "Hydro Power Plant" | Dy. Manager (Electrical); Narmada Hydroelectric Development Corporation Ltd.; Indira Sagar Power Station; PO Narmada Nagar; Khandwa 450 119 (MP) Ph: 07323: 284723 Fax: 07323 284723 / 284080 |
| 12 | Dr. A.R. Shukla | "Biomass Utilization" | Ministry of New and Renewable Energy, Government of India Remote Village Electrification Programme – I;Office : Block No. 14, CGO Complex, Lodi Road, New Delhi; Tel. : 24362488, (R) 2216-3711, Email : singhalak@nic.in |

| | | | |
|---|---|---|---|
| 13 | Dr.Rakesh Saxena | Power Electronics, Electrical drives, Digital controls, High voltage | SGSITS;23, Park Road, Indore – 452003;Phone: 0731- 2434095, 0731-2541567 Fax: 2432540;Mobile: 94250-68030 |
| 14 | Mr Ram Chandra | "Wind Energy and Geothermal Energy" | Regional Director; IGNOU, Regional Centre; 2nd Floor, Biscomaun Tower,West Gandhi Maidan, Patna-80001, Bihar Ph: 0612-2221538/ 2221541, Email: ignoupt@sanchar.in |
| 15 | Prof. J.K. Nayak | Passive solar architecture, Solar thermal systems, Energy Conscious Buildings | Prof. J.K. Nayak Room No. 315;Mechanical Engineering Department; IIT, Bombay Phone (o) 022 – 25767881, jknayak@me.iitb.ac.in |
| 16 | Mr M. P. Ramesh | Indian Status of Wind Energy Technology" | Executive Director;Centre for Wind Energy Technology Government of India. Velachery - Tambaram High Road, Pallikaranai, Chennai - 601 302; Phone : +91-44-2246 3982 ;Fax : +91-44-2246 3980, +91-44-2246 3981 Email: ed@cwet.res.inl |
| 17 | Dr. Arun Kumar | "Indian-status of Mini and Micro Hydel Technology." | Alternate Hydro Energy Centre; Department of AHEC , Indian Institute of Technology; Roorkee – 247667, Uttaranchal, Email: ahec@iitr.ernet.in Tel: +91-1332-272349, 274860, 285213 \| Fax: +91-1332-273560 |
| 18 | Mr J.S. Chaudhary | "Energy Conservation in Oil Extraction" | Shri J.S. Chaudhary; President; Prime Feeds, Prime Plaza, Prime City;Sukhlia, Indore – 452008; Mobile –98266-55441 Email – jschaudhary@yahoo.co.in |
| 19 | Prof. V.K.Jain | "Air Pollution Control Technologies for Industrial Applications" | Professor School of Environmental Sciences; Jawaharlal Nehru University New Delhi;9868585788 (M) <vkj0400@mail.jnu.ac.in> |
| 20 | Dr. M.G. Gharpure | "Energy Conservation" | Director, Yajna Fuel Services; 5, Jai Shivsiddhi Vinayak Cooperative Housing Society ;G-Floor, Shivaji Nagar, B-Cabin Thane(w)-400602 (Mumbai); Phone (022 ) 25424983 / 25403070 Fax: (022 ) 25424983 e- mail yajna_fuel@vsnl.net |

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|---|---|---|---|
| 21 | Mr. A. R. Thiagarajan, | “Pulp and Paper Industry” | Mr. A. R. Thiagarajan,SPB Projects and Consultancy Ltd.;Esvin House , Perungudi,Chennai – 600 096, India Ph: 044-66849300 /66849415 Fax: 055-66849499/24961625 Email: art@spbpc.com psraghunandanan@spbpc.com, |
| 22 | Mr. S. K. Nayak, | "Instrumentation, Measurement and Controls for Energy and Environmental Audit” | S.K. Nayak;Sr. Manager; IL & FS Ecosmart Ltd.;Ahmedabad Ph: 079-4020 6255 (Direct);Mob:99090 13148 "SK.Nayak" <sk.nayak@ilfsecosmart.com> |
| 23 | Mr. Hemant Nandanpawar | Concept of CDM | National CDM Expert (India) Clean Energy & Climate Change Specialist, Energy, Transport & Water Division;Asian Development Bank (ADB), Hyderabad, Ph:+91-66441816,Mobile : +91-9866896615 Avenue, Mandaluyong City, 1550 Metro Manila, Philippines www.adb.org |
| 24 | Mr. Manish Chandekar, | “Environmental Management Systems (EMS) and ISO 14001” | Mr. Manish Chandekar,194, Rajaram Nagar, Dewas (M.P.) Mobile: 099811 99675;Ph: 07272-228330 "Dr. Manish Chandekar" manish@ehsconsultants.co.in |
| 25 | Mr. S. Padmanaban | "The Development and Current Status of Energy Conservation and Energy Efficiency Movement in India | Senior Energy and Environmental Advisor Office of Energy and Environment & Enterprises.U.S. Agency for International Development; American Embassy Chankyapuri - 110021 ,New Delhi |
| 26 | Dr. O.S. Sastry | P.V.Cell (Solar Energy) | Director (PV Testing); Solar Energy Centre ,MNRE; Block No. 14, CGO Complex Lodhi Road, New Delhi – 110003; (M) 92124-79213, (R) 24362155 Email – ossastry@hub.nic.in , sankar_sec@yahoo.co.in |
| 27 | Mr.R. Paraman | Energy Auditing Technique | Devki Energy Consultancy Pvt.Ltd.;405,Ivory Terrace R.C. Dutta Road ;Alkapuri, Vadodara- 390007 ; Ph No. |

| | | | |
|---|---|---|---|
| | | | 0265-2354813, 2330636,<br>Email- devkienergy@sify.com |
| 28 | Dr. A.K. Singh | Thermal Energy Conservation Opportunities in Thermal Power Systems<br>Electrical Power Generation | Electrical Research & Development Association,ERDA, Road,Makarpura Industrial Estate , Vadodra -390010 Gujrat<br>Phone- 0265-2638382, Fax- 0265-2638382,<br>Email- erda@erda.org, dir@erda.org, awadhesh11@yahoo.co.in |
| 29 | Dr. S. Kedare | Concentrating Solar Collectors ;Rural application technologies | Adjunct Assistant Professor;IIT, Bombay<br>Ph. No. 22 2576-7835 Fax- +91 22 25726875, 09324288198 |
| 30 | Dr. Deepak Kaul | "Motivation for Employees" | Professor; Sanghvi Institute of Management & Science<br>Sapphire Twins, 16-17, A.B. Road, 2nd Floor Chautha Sansar office Building; Indore - 452010,<br>Tel.: 0731-3269009, 4214047, |
| 31 | Mr A.K. Asthana | Carrier Opportunities for Prospective Energy Auditors and Energy Managers | Group Head (Energy Management); National Productivity Council<br>Productivity House, 5-6, Institution Area; Lodi Road ,New Delhi-110003;Fax No. 24698138 or 24615002 |
| 32 | Mr.Kamlesh Dililwar | Thermal Energy Conservation in System | Associate Consultant; Conzerv Systems Pvt. Ltd. India – West<br>201, Tarunika Apartments ,19, Malaviya Road , Vile Parle- East , Mumbai- 400057 |
| 33 | Mr Sanjeev Kumar | "Energy Auditing Techniques" | Environmental Services, SGS India Private Limited;Manager- Climate Change Programme; 250, Udyog Vihar, Phase IV, Gurgaon,, Haryana - 122 015, India<br>Mobile: +91 9871794628<br>Sanjeev.Kumar@sgs.com |
| 34 | Mr D.S. Gandhe | "Energy Auditing Techniques", "Indian Energy Scenario and Codes" | The Institution of Engineers<br>1332 JM Road, Shivaginagar, Pune (R) 020 -25436892 (M) 98220-26195<br>Email : gandheds@yahoo.co.in |
| 35 | Mr. A.V. Dinesh | "Energy Conservation in Electrical Systems" | Devki Energy Consultancy Pvt. Ltd.405, Ivory Terrace, R.C. Dutta Road, Alkapuri , Vadodara – 390007 Phone: -0265-2354813, |

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|---|---|---|---|
| | | | 2330636, 2354813<br>Email- devkienergy@sify.com |
| 36 | Mr. Anand Sapre, | "Motivation for Employees" | Mr. Anand Sapre, Professor, IIPS, DAVV, Indore Bypass Road, Manglia Square, Indore ( M.P. ) 453771 Mobile : 94250-78013 |
| 37 | Prof. T.C. Kandpal | "Energy Action Planning, and Project Management" | Professor; IIT Delhi ,Hauz Khas New Delhi -110 016<br>Email - tarak@ces.iitd.ernet.in |
| 38 | Dr. Upinder Dhar | "Energy Action Planning, and Project Management" | Director, Institute of Management, Nirma University; Sarkhej-Gandhinagar Highway, Post: Chandlodia, Via: Gota, Ahmedabad - 382 481.Gujarat, India. +91 - 2717 - 241900 to 04. +91 - 2717 – 241916 |
| 39 | Dr. Ashvini Kumar | Solar Energy | Director (ST);Ministry of New and Renewable Energy; Block No.14, C.G.O. Complex, Lodhi road, New Delhi- Ph: 011-24363546 |
| 40 | Dr. P. C. Pant | Storage Battery | Scientiste 'D' ; Solar Energy Centre, Block 14, CGO complex, Lodi road, New Delhi -110003<br>Tel: 0124-2579214<br>Email pcpant@nic.in |
| 41 | Dr. S. B. Kedare | "Solar Concentrates Energy Action Planning and Project Management" | Adjunct Assistant Professor;IIT, Bombay<br>Ph. No. +91 22 2576-7835 Fax-+91 22 25726875, 09324288198 |
| 42 | Dr. J. Mathur | "Energy Conservation in Buildings | Mechanical Engineering Department<br>Malviya National Institute of Technology;Jaipur<br>Phone : (R) 0141-2708764 Mobile – 09414250329, Email : jyotirmay@mint.ac.in |
| 43 | Dr. Vishal Garg | "Energy Conservation in Buildings" | Asst. Professor, Course Coordinator<br>(IT for Building Science) IIT, Hyderabad, Ph. No. 040-23001967 Mobile: 09949990900<br>Email Id vishal@iit.net |
| 44 | Mr P.L. Nene | Electricity Act 2004 | Ex-Chairman ; MPEB, Indrapuri Colony, Indore |
| 45 | Prof. D. | Treatments and | SGSITS 23, Nehru |

| | | | |
|---|---|---|---|
| | Killedar | Sedimentation and Coagulation | Park Road; Indore |
| 46 | Mr. D.K. Kemkar | "Energy Conservation through Thermal Storage in Air Conditioning Systems " | Kehems Engineering Pvt. Ltd; 303, Kothari; Manor;10, Diamond Colony, New Palasia,Indore Phone – 0731-536624, Email – kehems@sancharnet.in |
| 47 | Mr K.K. Chakravarti | "Pulp and Paper Industry" | GTZ Office India; 21, Jor Bagh. New Delhi, 110003, India Tel: +91 11 2460-3832; Email: gtz-indien@gtz.de |
| 48 | Dr. N.S. Rathore | "Gasifiers" | Dean : College of Dairy & Food Science Technology, MPUAT , Udaipur - 313001 Ph. +91-294-2470719 (O)+91-09414166961 (Mob) Fax : 0294 2470479 E-Mail: rathoren@rediffmail.com |
| 49 | Prof. Kannan. N. Iyer | Heat Transfer | Indian Institute of Technology Bombay, Powai, Mumbai Postcode 400076 Maharashtra, INDIA Phone+91-22-25767544, Fax+91-22-25726875, 25764890 Email: kiyer@iitb.ac.in |
| 50 | Mr A.K. Pandey | "Wind Energy Technologies" | Proprietor; Fair Aero Consultant & Technologist; House No. 20, 24 Bungalows, Scheme No. 114, A.B. Road, Indore – 452010 Ph/Fax : 0731-2576764, Mobile –98260-24787, Email – akpandey58@hotmail.com |
| 51 | Mr. M.T. Sambandhan | Energy Conservation: Case Studies | Energy Cell; NSIC Technical Service Centre A-JI Industrial Area, Rajkot; Phone – 2387885, (R) 2586639 Email mt_sambandam@rediffmail.com |
| 52 | Mr. S. Sridharan | (i) Energy Conservation Opportunities in Sugar Process in the Industry (ii) Energy Conservation Opportunities in the Process in Pulp & Paper Industry | Engineers and Consultants (P) Ltd. 68A, Porur Kunndrathur High Road Porur, Chennai – 600116 Phone – 044-24827843, 24828532, 24828717-20 Fax – 044-24828531 Email – avantgrade@vsnl.com |

5 Percentage of classes taken by temporary faculty – programme-wise information each semester wise information Percentage of classes taken by visiting faculty – programme-wise each semester wise information (on the basis of % Credits thougt by (contract+visiting) faculty)

M.Tech and M.Phil

| years | Semesters | % of classes by visiting faculty M.Tech | % of classes by visiting faculty M.Phil |
|---|---|---|---|
| 2007 | I | 9.2 | 0 |
| | II | 0 | 0 |
| | III | 7.6 | |
| 2008 | I | 17 | 0 |
| | II | 9.2 | 0 |
| | III | 10 | |
| 2009 | I | 8.7 | 13.6 |
| | II | 20 (Cotract+visiting) | 12.5 |
| | III | 7.4 | |
| 2010 | I | 14.5 | 28.3 |
| | II | 20 (Cotract+visiting) | 0 |
| | III | 8.7 | |
| 2011 | I | 17 | 0 |
| | II | 25 (Cotract+visiting) | 0 |
| | III | 8.7 | |
| 2012 | I | 5.5 | 0 |
| | II | 8.7 | 0 |
| | III | 5.5 | |
| 2013 | I | | |
| | II | 8.7 | 0 |

| S.N. | Academic Session | SEM | Course | Name | Percentage |
|---|---|---|---|---|---|
| 1 | 2007-08 | III | Energy Conservation (Electrical Systems) | Mr Yogesh Pahariya | 63 |
| | | III | Electrical Power generation Transmission & distribution | Mr Yogesh Pahariya | 64 |
| | | I | Instrumentation, Measurements and Controls | Mr Ravi Sindal | 91 |
| | | III | Energy Conservation Lab | Mr.VVS Murthi | 67 |
| 2 | 2008-09 | II | Energy Conservation (Electrical Systems) | Prof Y. Pahariya | 73 |
| | | I | Information Technology For Energy Managers and energy Soft wares | Mahendra Joshi | 96 |
| | | III | Energy Conservation (Electrical Systems) | Mr Yogesh Pahariya | 63 |
| | | I | Instrumentation, Measurements and Controls | Mr. Ravi Sindal | 79 |
| 3 | 2009-10 | II | Energy Conservation (Electrical Systems) | Mr Yogesh Pahariya | 100 |
| | | II | Instrumentation, Measurements and Controls | Mr D.S Bais | 40 |
| | | II | Instrumentation, Measurements and Controls | Mr Parag Parandkar | 33 |
| 4 | 2010-11 | II | Engineering Thermodynamics : Quality & Quantity Aspects | Mr. P. Yadav | 100 |
| | | I | Mass transfer | Mr. P Yadav | 98 |
| | | II | Energy Auditing Techniques | Mr. N.Baroniya | 100 |
| | | II | Energy Conservation (Electrical Systems) | Mr. N.Baroniya | 100 |
| | | II | Energy Conservation Lab | Mr. N.Baroniya | 100 |
| 5 | 2011-12 | I | Energy Auditing Techniques | Mr. N.Baroniya | 100 |
| | | I | Electrical Power generation Transmission & distribution | Mr. N.Baroniya | 89 |
| | | III | Energy Conservation process in designated Industries | Mr. N.Baroniya | 100 |
| | | II | Research Methodology | Dr S. Banerjee | 90 |
| | | II | Engineering Thermodynamics : Quality & Quantity Aspects | Mr.J Balwanshi | 98 |
| 6 | 2012-13 | II | Energy Auditing & Conversion Technology | Mr. N.Baroniya | 100 |
| | | II | Energy Conservation (Electrical Systems) | Mr. N.Baroniya | 100 |
| | | III | Instrumentation, Measurements and Controls | Dr Ajay Verma | 90 |
| | | I | Electrical Power Generation, Transmission and Distribution | Mr. N. Baroniya | 100 |
| | | I | Energy Auditing Techniques | Mr. N Baroniya | 100 |
| | | II | Engineering Thermodynamics : Quality & Quantity Aspects | Mr Jai Balwanshi | 95 |

5. Programme-wise Student Teacher Ratio : M. Tech – 6:1

: M. Phil -4:1

: Ph. D- 8:1

6. Number of academic support staff (technical) and administrative staff: sanctioned and filled

Technical : 01

Administrative : 03

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

| **Students** | **UG** | **PG** | **Integrated Masters** | **M.Phil.** | **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 | | M=11<br>F=06 | | M=02<br>F=00 | M=09<br>F=03 | |
| From other states of India | | M=13<br>F=04 | | M=01<br>F=02 | M=04<br>F=04 | |
| NRI students | | | | | | |
| Foreign students | | | | | | |
| Total | | **M=24**<br>**F=10** | | **M=03**<br>**F=02** | **M=13**<br>**F=07** | |

*M-Male *F-Female

Externally registered students?

Yes ☐ No ☑

If yes, how many students avail of this provision annually? N.A

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

**Regular Courses**
M. Tech Energy Management
M. Phil Energy & Environment
Ph.D

| year | Expenditure Including Salary | Expenditure Excluding Salary | Total No. of Students Enrolled | Unit Cost Including Salary Rs./Student/Year |
|---|---|---|---|---|
| 2007-08 | 1522775 | 281151 | 65 | 23427.3 |
| 2008-09 | 1406055 | 278538 | 64 | 21969.6 |
| 2009-10 | 1926840 | 254531 | 60 | 32114.0 |
| 2010-11 | 2664632 | 257971 | 63 | 42295.7 |
| 2011-12 | 2846372 | 153654 | 59 | 48243.6 |

(b) Excluding the salary component

**Regular Courses**
M. Tech Energy Management
M. Phil Energy & Environment

| year | Expenditure Including Salary | Expenditure Excluding Salary | Total No. of Students Enrolled | Unit Cost Excluding Salary Rs./Student/Year |
|---|---|---|---|---|
| 2007-08 | 1522775 | 281151 | 65 | 4325.4 |
| 2008-09 | 1406055 | 278538 | 64 | 4352.2 |
| 2009-10 | 1926840 | 254531 | 60 | 4242.2 |
| 2010-11 | 2664632 | 257971 | 63 | 4094.8 |
| 2011-12 | 2846372 | 153654 | 59 | 2604.3 |

**M. Tech -Energy Management (Distance Education)**

| Year | Expenses Including Salary | Expenses excluding Salary | Total No. of Student Enrolled | **Unit Cost Including Salary** | **Unit Cost excluding Salary** |
|---|---|---|---|---|---|
| 2007 – 08 | 2902906=00 | 2393900=00 | 244 | **11897** | **9811** |
| 2008 -09 | 4485389=00 | 4328743=00 | 254 | **17659** | **17042** |
| 2009 – 10 | 5255272=00 | 5079423=00 | 246 | **21363** | **20648** |
| 2010 -11 | 2857373=00 | 2696681=00 | 256 | **11162** | **10534** |
| 2011 – 12 | 3098731=00 | 2928941=00 | 135 | **22954** | **21696** |

A.8 A. Faculty recharging strategies

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

Faculty attended the workhops

**1. Dr Rubina Chaudhary: Two Refresher courses**

A.9 Student projects

- percentage of students who have done in-house projects including inter-departmental projects

➢ **M.Tech Students:** Minor Project (12) credits

100% projects done in School

- percentage of students doing projects in collaboration with other universities / industry / institute

➢ **M.Tech Students:** Major Project (24) credits

100% projects in collaboration with Multinational organizations/
Govt organizations/Industries etc

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

- Faculty :Nil
- Doctoral / post doctoral fellows : Nil
- Students :Yes
  National Awards
  - Energy Conservation Award of Rajasthan- Mr P.K Tewari
  - Energy Conservation Award From Institute of Engineers
    **Mr Hemant Nandan Pawer**

File A.10

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

| S. No | Seminar/ Conference/Workshop | Funding Agency | Participants |
|---|---|---|---|
| 1 | Carbon Credits in Industries ,Seminar ;Jointly Organized by NIFE and CESR, Dec.2007 | Sponsored by M/s Shakti pumps, Pithampur (M.P.) | for industrialists ,students, Academicians |
| 2 | 3-Days Training Course on Energy Efficient Building Systems, January 18-20, 2007 at Indore, | Sponsored by MNRE, New Delhi. | Architects,Students of Architecture ,Civil ,Energy students and builders |
| 3 | One day Awareness and training program on "Remote village electrification" for Field functionaries in district Jhabua ,October 04,2007, | Sponsored by MNRE, New Delhi | Field staff of MPUVN & villagers of solar electrified villages |
| 4 | Coordinator and Organized of work shop of "Building Energy simulation "USAID- ECO-III Project, in School of Energy and Environmental studies on 13 June, 2008. | USAID Division, BEE New Delhi | Architects,Students of Architecture ,Civil ,Energy students and builders |
| 5 | Solar Technology Application for Women; 18-03-2008 | Sponsored by MNRE,New Delhi | Polytechnic Students |
| 6 | Standard Test Procedure of Domestic Solar water heating system;16-05-2008 | MNRE, New Delhi | Manufactures of Solar Water Heating systems of the India |
| 7 | Exhibition on Green Technologies for Sustainable Development, 27-30 Nov.2009 | State Govt of M.P | Researchers, Teachers, Students and public at large |
| 8 | 2nd Bharatiya Vigyan Sammelan on Green Technologies for Sustainable Development, ,1-3 December,2009 | State Govt. of M.P and Vigyan Bharati | Researchers, Teachers, Students and professionals , manufacturers |
| 9 | Use of Solar Thermal System in Institutional and Commercial Sectors; 13-03-2010. | Sponsored by MNRE, New Delhi | Engg Institute owners / trusties / teachers/ hotel owners / students /manufacturers and suppliers |
| 10 | I$^{st}$ India International Energy Summit (IIES), 28-30 January 2011, at VNIT, Nagpur | Vigyan Bharati and MNRE | Researchers and Academicians, Professionals and Students |
| 11 | Fuel Cell: Technology and its Application in Indian Context, 30 April 2011 | Department | Students of University |
| 12 | Solid Waste Management: Present and Future Technologies, 25 April 2011 | Department | Students of University |

List and photographs of outstanding participants **File No. A.11**

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

The School seeks to promote the highest standards of scientific and professional integrity and to give due consideration to the ethical, social, cultural, Energy and Environmental issues arising from its activities.

**Code of Scientific and Scholarly Conduct**

All Employees of School will abide by the following code of scientific and scholarly conduct to the best of their ability.

1 I will act in the interest of the advancement of science and technology for sound decision making, by using the most appropriate, best available, high quality scientific and scholarly data and information to support the mission of the School.

2 I will communicate the results of scientific and scholarly activities evidently, truthfully, impartially, methodically, accurately, and in a timely manner and ensure the best use of resources including equipment and funds.

3 I will adhere to the laws and policies related to conservation and protection of energy and environmental resources

4 I will not engage in activities that put others or myself in an actual or apparent conflict of interest and will not engage in scientific and scholarly misconduct,

5 I will be diligent in creating, using, preserving, documenting, and maintaining scientific and scholarly collections and records.

6 I will maintain scientific and scholarly integrity and will not engage in fabrication, falsification, or plagiarism in proposing, performing, reviewing, or reporting scientific and scholarly activities and their products.

**In case of any conflict or complaint, the decision of the Department Committee will be final.**

A.12 Student profile course-wise:

| Name of the Course (refer to question no.4) M.Tech | Application received | Selected | | Pass percentage In B.E/B.Tech/M.Sc (Physics) | | | |
|---|---|---|---|---|---|---|---|
| | | | | Male | | Female | |
| | | Male | Female | Min | Max | Min | Max |
| 2007-09 | 69 | 11 | 2 | 55 | 72 | 69 | 77 |
| 2008-10 | 49 | 13 | 1 | 57 | 72 | 66 | 66 |
| 2009-11 | 37 | 11 | 3 | 59 | 79 | 66 | 77 |
| 2010-12 | 62 | 14 | 3 | 63 | 76 | 67 | 75 |
| 2011-13 | 78 | 13 | 5 | 59 | 77 | 66 | 73 |

| Name of the Course (refer to question no.4) M.Phil | Application received | Selected | | Pass percentage M.Sc (Environment Science) | | | |
|---|---|---|---|---|---|---|---|
| | | | | Male | | Female | |
| | | Male | Female | Min | Max | Min | Max |
| 2007-08 | 13 | 8 | 5 | 55 | 75 | 65 | 78 |
| 2008-09 | 13 | 8 | 5 | 55 | 80 | 60 | 72 |
| 2009-10 | 10 | 6 | 4 | 60 | 75 | 64 | 81 |
| 2010-11 | 11 | 6 | 5 | 64 | 74 | 69 | 80 |
| 2011-12 | 7 | 3 | 4 | 63 | 72 | 69 | 82 |

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.Tech | 0 | 62.5% | 37.5% | |
| M.Phil | 0 | 40% | 60% | |
| Ph.D | 65% | 10% | 25% | |
| | | | | |

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.

**NET Qualified Students**

| Student name | Year | NET |
|---|---|---|
| Apurva | 2012 | UGC NET (Lectureship) |
| Vinay Kumar Singh | 2012 | UGC NET (Lectureship) |
| Ku. Bhavisha Sharma | 2012 | Rajasthan SET (Lectureship) |
| Satyendra Tripathi | 2012 | UGC NET (Lectureship) |

**GATE qualified students**

| Student name | Year |
|---|---|
| Deepash Singh Chauhan | 2013 |
| Gurpreet Kaur Rai | 2013 |
| Gaurav Chaudhary | 2013 |
| Narandra Patel | 2013 |
| Shaishav Sharma | 2013 |

A.15 Record of Student progression

**Record for 2007-2012**

Total No. of students completed M.Tech and M.Phil =151
Total No. of students admitted for Ph.D =08
Total No. of students completed Ph. D =11
Total No. of students Gone for Post-Doctoral =02

| Student progression | Percentage against enrolled |
|---|---|
| UG to PG | |
| PG to M.Phil. | |
| PG to Ph.D. | **5 %** |
| Ph.D. to Post-Doctoral | **18 %** |
| Employed<br>• Campus selection<br>• Other than campus recruitment | 95% |
| Entrepreneurs | Nil |

- School faculty approach to the different organisations for training and later on thes Students are taken in jobs in the same organisations.

**List of Ph. D students Progression from M.Tech and M.Plil**

| S. No. | Roll No. & Date of Registration & Awarded Date | Name of Student | Title of the Thesis |
|---|---|---|---|
| 1. | 07Ph.D0033 12.07.07-**02-02-2012** | Kumari Smita Badur M.Phil | Assessment Predication and Techno Economic Analysis of New Developed Concrete by Utilizing Heavy Metals Bearings Hazardous Waste |
| 2. | 07Ph.D0036 12.09.07-**06-02-2012** | Rajendra Singh Thakur M.Phil | Assessment and Influence of Operational Parameters on Photo Catalytic Treatment of Industrial Wastewater. |
| 3. | 09Ph.D0038 09/04/ 2009 Ongoing | Chandan Singh M.Phil | Optimization and Assessment Of Solar Photo catalytic Treatment Of Municipal Wastewaters |
| 4. | 09Ph.D0039 29/08/2009 Ongoing | Chanchal Chauhan M.Phil | Studies On Organic Molecular Markers In Ambient Aerosol And Emission Sources |
| 5. | 10Ph.D0040 03/02/2010 Continuing | Shukti Tomar M.Phil | Impact Assessment Study Of Municipal Solid Waste Disposal Site On Environmental Components And Climate In Relation To Seasonal Variations |
| 6. | 10Ph.D0044 01/07/2010 Continuing | Rana Pratap Singh M.Phil | To Study The Utilization Of Leather Solid Waste and Flyash Through Chemical Treatment To Develop Composite Material |
| 7. | 11Ph.D0047 4 -07-2011 Continuing | Satyendra Triphathi M.Phil | Impact Of Crop Residue Burning On The Ambient Aerosol And Soil Of Rural Area |
| 8. | 11Ph.D0048 09-11-2011 Continuing | Vijay Bhat M.Sc (Physics) | Identification Development And Performance Evaluation Of Organic Phase Change Storage Materials For Cooling Load Reduction In Buildings |
| 9. | 13Ph.D0051 03/01/2013 | Mohan Rawat M.Sc (Physics) | Under Process of Registration after course work |
| 10. | 13Ph.D0053 04/01/2013 | Anjali Barwal M.Phil | Under Process of Registration after course work |
| 11. | 13Ph.D0054 04/01/2013 | Vikas Ahirwal M.Tech | Under Process of Registration after course work |
| 12. | 13Ph.D0055 05/01/2013 | Payal Pancholi M.Phil | Under Process of Registration after course work |
| 13. | 13Ph.D0056 07/01/2013 | D.Asha M.Phil | Under Process of Registration after course work |

**A.16 Record of Diversity of staff**

| **Percentage of faculty who are graduates** | |
|---|---|
| of the same university | |
| from other universities within the State | |
| from universities from other States | 100% |
| from universities outside the country | |

A.17 Nmber 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 | Books : 4439<br>Book volumes: 85 |
| b) Internet facilities for staff and students | Yes |
| c) Total number of class rooms | 03 (including Seminar Hall) |
| d) Class rooms with ICT facility | 03 (including Seminar Hall) |
| e) Students' laboratories | 06 (* Two Labs Common) |
| f) Research laboratories | 04 |

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

a) from the host university

| | | | | |
|---|---|---|---|---|
| 1 | 07Ph.D0033<br>12.07.07<br>**02-02-2012** | Kumari Smita Badur | Assessment Predication And Techno Economi Analysis Of New Developed Concrete By Utilizing Heavy Metals Bearings Hazardous Waste | Dr. Rubina Chaudhary<br>Dr. Uttamesha Gupta |
| 2 | 07Ph.D0034<br>27.07.07<br>Submitted | Smt. Prerana Pandey | Design, Development And Performance Evaluation Of Packed Bed Reactor For Dung And Poultry Waste. | Dr. S. P. Singh |
| 3 | 07Ph.D0035<br>10.09.07 -<br>**2012** | Biplab Paul | Design, Development And Performance Evaluation Of A Concentrator Based Solar Dryers Of Drying Leafs Of Tendu (Diospyros Melonoxylon) Plant, Amla Fruit (Phyllanthus Embica) & Red Chilli (Capsicum Annum). | Dr. S. P. Singh |
| 4 | 07Ph.D0036<br>12.09.07<br>**06-02-2012** | Rajendra Singh Thakur | Assessment And Influence Of Operational Parameters On Photo Catalytic Treatment Of Industrial Wastewater. | Dr. Rubina Chaudhary<br>Dr. R. L. Sawhney |

b) from other universities NIL

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

- 10 AICTE Scholarships for Gate Qualified students and
- Free ships for SC/ST, State Govt. provide support to at SC/St students and sub-income level OBC students generously
- Ph.D scholarships from MNRE/UGC projects/MPCST projects/DST projects

| Year | Name of student | M. Tech/ M.Phil | SC/ST scholar ship | Other scholar-ship | Agency |
|---|---|---|---|---|---|
| **2007-2009** | Mr. Sanjay Kandari **(Gen)** | **M.Tech** | | GATE | AICTE , Delhi |
| | Mr. Pankaj Kumar **(SC)** | **M. Phil** | | GATE | AICTE , Delhi |
| | Mr. Rajkumar Rajalwal **(SC)** | **M.Tech** | | GATE | AICTE , Delhi |
| | Mr. Anil Samudre **(SC** | **M.Tech** | | GATE | AICTE , Delhi |
| | Mr. Chetan Swaroop Sharma (Gen) | **M.Tech** | | GATE | AICTE , Delhi |
| | Mr. Ajay Singh Thakur **(Gen)** | **M. Phil** | | GATE - | AICTE , Delhi |
| | Mr.Vikash Yadav **(OBC)** | **M.Tech** | PM S* | - | -M.P. Govt. |
| | Mr.Narottam Baroniya **(SC)** | **M.Tech** | PM S* | - | -M.P. Govt. |
| | Mr. Chandan Singh | **M. Phil** | PM S*- | - | -M.P. Govt. |
| **2008-2010** | Mr. Ankit Nagar **(Gen)** | **M. Tech** | - | GATE | AICTE , Delhi |
| | Mr. Dushyant Sahu **(OBC)** | **M. Tech** | - | GATE | AICTE , Delhi |
| | Mr. Rahul B. Kolhe **(SC)** | **M. Tech** | - | GATE | AICTE , Delhi |
| | Mr. Rahul V. Hiwase **(OBC)** | **M. Tech** | - | GATE | AICTE , Delhi |
| | Mr. Khan Juned **(OBC)** | **M. Tech** | PM S* | PMS | M.P.Govt. |
| | Mr. Bhargav Satish Kumar **(SC)** | **M. Phil** | PM S* | PMS | M.P.Govt |
| **2009-2011** | Ms. Aarti Singh **(Gen)** | **M.Tech** | - | GATE | AICTE , Delhi |
| | Mr. Deepak Rathod **(OBC)** | **-** | - | GATE - | AICTE , Delhi |
| | Mr.Mohammad Shahzad Sheikh **(OBC)** | **-** | PM S* | | M.P. Govt. |
| | Mohd. Sahid Siddiqui **(OBC)** | **M. Phil** | MANF | MANF** | MANF **(**UGC), New Delhi |
| **2010-2012** | Ms. Richa Patel **(OBC)** | **M.Tech** | - | GATE | AICTE , Delhi |
| | Mr. Umang Gupta **(Gen)** | **-** | - | GATE | AICTE , Delhi |
| | Mr. Mahesh Barya **(SC)** | **M. Phil** | PM S* | - | M.P. Govt. |
| **2011-2013** | Mr. Rajeev Kumar Baghel **(OBC)** | **M.Tech** | - | GATE | AICTE ,Delhi |
| | Mr. Siddhesh Srikant Gawade **(Gen)** | **-** | - | GATE | AICTE ,Delhi |
| | Mr. Pramod Rajput **(OBC)** | **-** | - | GATE | AICTE ,Delhi |
| | Mr. Himanshu Arya **(OBC)** | **-** | - | GATE | AICTE ,Delhi |
| | Mr. Mohd. Khalid Khan **(Gen)** | **-** | - | GATE | AICTE ,Delhi |
| | Mr. Nabeel Anwer **(OBC** | **-** | - | GATE | AICTE ,Delhi |
| | Ms. Verma Ku. Varsha **(SC)** | **-** | - | GATE | AICTE ,Delhi |
| | Mr. Balwant Chouhan **(ST)** | **-** | PM S* | - | -M.P. Govt. |
| | Mr. Piyush Patidar **(OBC)** | **-** | PM S* | - | -M.P. Govt. |
| **2012-2014** | Mr. Gaurav Choudhary **(OBC)** | **M.Tech** | - | GATE | AICTE, Delhi |
| | Mr. Nikhil Kumar Chouhan **(SC)** | **-** | - | GATE | AICTE, Delhi |
| | Mr. Deepesh Singh Chouhan **(Gen)** | **-** | - | GATE | AICTE, Delhi |
| | Mr. Ankit Farkya **(Gen)** | **-** | - | GATE | AICTE, Delhi |
| | Mr.Mandar Agnihotri **(Gen)** | **-** | - | GATE | AICTE, Delhi |
| | Mr.Narendra Kumar Patel **(Gen)** | **-** | - | GATE | AICTE, Delhi |

**MANF * Post Metri Scholarship (PMS)

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

- No new course was introduced in last five year plan.
- Earlior courses were introduced as per need of the nation for the studies in Energy and Environment.

A.21 Records of feedback from

Feedback forms and discussions with students, experts, industrialists, stakeholders and parents are taken to make better strategies and modifications in overall system and practices of the School.

- **Students:** Faculty discuss the curriculum as well as teaching-learning-evaluation methods in departmental commeetee meetings. It is a countinous process and used at the time of BOS meeting during curriculum modifications. The Evaluation process is governed by Ordinance 31.
- **Emloyer:** The feedback form provided by the University is used to assess the individual teacher's performance for the each course taught and take suggestions on curriculum and laboratories.
- **Alumni** : Informal , verbal communication and e-mail is used for feedback and utilized during BOS meeting for curriculum modifications
- Employer : During industrial visits, we are in touch with the industry and regularly getting feedback about our students and course curriculum
- **Community** : Experts from the various field are invited to interact with the students and faculty members and their feedback help us in up gradation of our course curriculum
- **Academic Peers**: In addition to external examiner of comprehensive viva voce, the eminent scientists and teachers of reputed universities advise and feedback helps in curriculum modification
- **Industry**: We have regular interaction with industry through field visits and onsite training programs and interaction with students. Their feedback is also incorporated in up-gradation of curriculum. We have also a **"National Institute Industry Forum for Energy".** Through the forum, School staff and students are in direct contact with the industries for their energy and environment related problems. Technical experts from the industry are invited to School for lectures, selection and examination of the students, while School's expertise and laboratory facilities are made available to the member industries.
- **Parents :** Verbal communication

**File No A.21**

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

We have faculty committee for finalization of curriculum. The committee meets in the beginning of academic session and incorporate the suggestion after discussion, if appropriate. The teaching learning methodologies are improved by incorporating the new technological tools and opinions of feedbacks.

Board of Studies (BOS) has the following Members

| Name | Designation | BOS Committee |
|---|---|---|
| Dr S.P.Singh, | Professor and Head,SEES | Chairman |
| Dr R.N.Singh | Professor,SEES | Member |
| Dr Rubina Choudhary | Associate Professor,SEES | Member |
| Dr Sant Ram | Ex-Director, Ministry of New and Renewable Energy (MNRE). Govt of India, New Delhi | External Expert |
| Sudent Representative | Sudent | Member |

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

All the students feedback forms are analysed for each paper for individual teacher and placed before this committee for finalization of curriculum. The students feedback for individual teacher is communicated to them and action taken to improve the teaching methodology.

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

Feedback forms and discussion method is used from Alumni and employers during their visit to department or through e-mail. Employers' need is given priority in changing the curriculum and additional training programs are organised to meet the present and future marked demand.

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

1. Punk Mady Dhiman
   Senior Design Engineer at ABB in Singapore; Mobile: +66 82 060 0208
   E-mail pankajdhimanidhi@facebook.com

1. Mr Kishore Malviya; Director, SMS Envocare Ltd , Nagpur
   E-mail: kihorem@gmail.com

2. Himansu Sharma
   Senior Engineer at Schneider Electric; Mumbai, Maharashtra, India
   Email -100001520182177@facebook.com

3. Dr Pumam Tyagi
   Environmental Compliance Specialist, Maryland Dept. Of The Environment,
   Rockville, Maryland City, United States Maryland
   Email- punam.tyagi@facebook.com

4. Shashi Prakash
   Program Officer at UNFCCC · Bonn, Germany; Ph: +971 50 132 7410
   Email: shashi.prakash.73113@facebook.com

5. Pankaj Aggarwal, Industrialist
   Aggarwal Chemicals & Refractoriesand ; Properitor oft Naveen steels;
   Yamunanagar, Haryana, India

6. Lokesh Chandra Duby
   Lead GHG Auditor at TUV NORD; New Delhi
   Email: okesh.c.dube@facebook.com

7. Shalendra Kumwat
   TÜV Rheinland Group; Bangalore, India
   Email- India Karnataka, India

8. Pankaj Kasture; Sr. Manager - MEP & Sustainable Design
   ;LEAD Consultancy & Engg Services Pvt Ltd;Mumbai Maharastra
   Email: pankaj.kasture.96@facebook.com
9. Pushpendra Nayak
   Senior Asst. Director, Federation of Indian Chambers of Commerce and Industry
   New Delhi

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

Field Visits organised for better understanding of Energy and Environmental issues on different types of actual systems and processes

**List of Field Visits of year 2011-2012**

| S.No. | Date | Companies name |
|---|---|---|
| 1 | 8-8-2011 | Rayon Applied Engineers Ltd., Indore |
| 2 | 30-9-2011 | Municipal Water Treatment Plant, Indore |
| 3 | 27-8-2011 | 400 kV Sub-Station, Indore |
| 4 | 15-10-2011 | Enercon Wind Farm Ltd., Dewas |
| 5 | 4-10-2011 | Tata International Ltd., Dewas |
| 6 | 4-11-2011 | A2z Infrastructure Ltd.(Msw Processing Division), Indore |
| 7 | 21-11-2011 | Omkareswar Hydro Power Plant, Omkareswar |
| 8 | 23-01-2012 | Pluton Cement Pvt. Ltd., Dhar |
| 9 | 14-02-2012 | Century Yarns & Denim Ltd., Khargaon |
| 10 | 25-02-2012 | Lloyd Insulations (I) Ltd., Pithampur |
| 11 | 11-2-2012 | Barli Development Institute for Rural Women |
| 12 | 30/07/2012 | National Steel And Agro Industries Ltd. |
| 13 | 11/08/2012 | Rao Raja Chatrakaran Cold Storage Pvt. Ltd. |
| 14 | 24/08/2012 | Grasim Industries, Nagada |

| | | |
|---|---|---|
| 15 | 03/10/2012 | Barli Development Institute For Rural Women |
| 16 | 12/10/2012 | 400 KV Sub-Station M.P.T.C.L |
| 17 | 24/01/2013 | Pluton Cements Pvt. Ltd. |
| 18 | 22/02/2013 | Rayon Applied Engineers |
| 19 | 05/03/2013 | Narmada Hydroelectric Development Corporation Ltd. |

Seminars/workshops are organised /attended by students regularly by invited experts
**Students attended and participated in the following**

1. Carbon Credits in Industries ,Seminar for industrialists ,students, Acadamics, Jointly Organized by NIFE and CESR, Dec.2007, Sponsored by M/s Shakti pumps, Pithampur (M.P.)
2. 3-Days Training Course on Energy Efficient Building Systems, January 18-20, 2007 at Indore, Sponsored by MNRE, New Delhi.
3. One day Awareness and training program on "Remote village electrification" for Field functionaries in district Jhabua ,October 04,2007,Sponsered by MNRE, New Delhi.
4. Coordinator and Organized of work shop of "Building Energy simulation "USAID-ECO-III Project, in School of Energy and Environmental studies on 13 June, 2008.
5. Solar Technology Application for Women Polytechnic Students; 18-03-2008
6. Standard Test Procedure of Domestic Solar water heating system;16-05-2008
7. Exhibition on **Green Technologies for Sustainable Development, 27-30 Nov.2009**
8. **2nd Bharatiya Vigyan Sammelan** on **Green Technologies for Sustainable Development, ,1-3 December,2009**
9. Use of Solar Thermal System in Institutional and Commercial Sectors; 13-03-2010.
10. I$^{st}$ India International Energy Summit (IIES), 28-30 January 2011, at VNIT, Nagpur
11. Fuel Cell: Technology and its Application in Indian Context, 30 April 2011
12. Solid Waste Management: Present and Future Technologies, 25 April 2011

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

Three Stage teaching techniques are adopted in the School **(File No. A24)**

- Black Board and Power Point
- On Site teaching and discussion on Real systems and process in the field and industries
- Technical CD's/DVD's show and discussion
- Curriculum recommended methods of Assessment
- Assignments, presentations and discussions

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

Following faculty members montor the lerning outcome
Dr S.P.Singh,
Dr R.N.Singh
Dr Rubina Choudhary

The learning outcomes are

- Excellent result and projects
- Placement in industries
- Proceedings to higher studies
- Passing the competitive examinations

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

**File No. A26**

Faculty and Students are actively participate in extension programs/activities

- Energy Audit activities of industries and Buildings etc.
- Solar City Plans
- Solar PV system DPR preparation
- Solar Thermal water heating systems DPR , Commissioning and Installation
- Testing of Solar Thermal Devices ar per BIS standard
- Testing of Biomass Systems
- EIA activates
- Khan River revival activities in Indore (March 2013)
- Awareness programs of Energy and Environment by conducting the 28 programs in a year with the help of all departments following Green Calender Events and Green University Policy.
- Plantation in School and Whole Campus

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

- Participation in conferences/workshops/seminars
- Participation by students in expert lectures/invited talks/keynote speaker talks
- Research and development undertake by students

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

- Accreditation from NAAC Grade B (2008) ; Four Star out of 5 (2002)
- Approval from AICTE M. Tech
- Accreditation From NABL and BIS for Laboratory of Solar Thermal Devices (Solar Box type Cooker and Flat plat collector)

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

1 Since inception in 1991, total 235 M.Tech. 125 M.Phil and 35 Ph.D's have been educated and 146 Research papers have been published in National and International Journals. They are making significant contribution nationally and globally.
- School and Center recived grant of **Rs 244 lakhs for research project** since 1990.
- School recived 35 lakhs for Laboratory upgradation under FIST program from DST (2202-2007)
- Biogas technical Training programmes organised for field functionless to offices in the state of M.P and Chhattisgarh. These trainings are organised in villages and at block, tehshil and district headquarters. Students are also involved in a few trainings to provide the knowledge and skills of working in different socio-economic societies.

2. Following are highlights of contributionsin last five years
- **More than 500** papers were reviewed of different topics of energy and environment to start new research areas in department to be competitive internationally and generating new innovative ideas in these areas too.
- **07 Review** papers were published in different areas in International Journal with high impact factors. (2008-13)
- **20 Research Papers** were published in Reputed and refereed National and International Journals (2008-13)
- School and Center received grant of Rs **108 lakhs for research project** (2008-2013)
- Consultancy projects of **Rs 27 lakhs** were completed in last Four Years and Rs 14 **lakhs** are taken in 2013 and continue.
- School received the NABL and BIS accredited laboratory for Testing of Solar Flat plate collectors and solar cookers.
- School is also approved for testing for Other Solar thermal Devices by Ministry of New and Renewable Energy, Govt. of India, New Delhi.(2008 continue)
- Consultancy projects on real systems/processes in the field were taken and solved the complexities to achieve the goals of techno-economic benefits in the society. Enhanced Practical knowledge and skills emerged from the field studies used in teaching of the students and to benefit the society.
- Based on New and Creative concepts/ideas, the projects were guided to M. Tech/M. Phil students. The works were presented before the Faculty and Students for open discussion. Knowledge sharing makes the outcome better.

3. The student's employment in nationally and internationally reputed organizations /industries/institutions in India and abroad in the different activities. Students are working as energy planers, consultants, energy managers ,energy auditors and implementing the small to large projects in Energy (specially in renewable energy systems) and environment.

4. M.Tech. in Energy Management at School is first designed course in the country.

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

1. **Academic Activities:**

In continuation of last year plan, the followings are the future plans of the School.

i. Addition of new courses
ii. Upgradation of Infrasturture
iii. Expansion of research and consultancy areas
iv. Enrichment of Library

In view of the above objectives, the activities would be carried out.

**Curricular Aspects**

i. This year Course of M.B.A (Energy Management) Regular and distance mode with Specialization in Energy Conservation may be started after adding required facilities and completing all the formalities.
ii. M. Tech in **Environment** may be started in next year after approval & completing the all formalities.
iii. Revision and modifications in Syllabus.

**a. Teaching-Learning and Evaluation**

The following activities/ works to be done with required modifications.

i. Up gradation in Power Point Presentations.
ii. Up gradation of notes for distribution to students before the topic taught in the class.
iii. Up gradation of laboratory and Manuals
iv. Development of new assignments/ problems/ seminar for students. One assignments/ problems/ seminar in fortnight should be given in each subject taught.
v. Commuter program shall be prepared for feedback.
vi. Feedback from stakeholders should be collected by sending the e-mails or during their visit to department.

**b. Research Activities**

i. Two papers should be communicated by each teacher as individual or with other researchers in Journals of good Impact Factors every year.
ii. New Research Fields for Impact of crop residue burning on the ambient aerosol and soil would be initiated
iii. New Research equipments should be procured.
iv. Minimum Two workshop / seminars/ conference should be planned in this year.

**c. Consultancy Activities**

i. Energy Audit and Energy Conservation Projects in Industries, Commercial and Residential Building sectors.
ii. Third Party Verification for various schemes implemented by the different agencies

2. **Infrastructure**

i. Laboratory would be upgraded with new extension/ partition to make them better.

ii. Last year target of Design and Construct earth Air Tunnel/ Pipe system as a demo and experimental unit for students would be taken this year.

iii. Design and Construct another Passive cooling tower for cooling of the building as a demo and experimental unit for students.

3. **Library: Learning Resource**

New books published and DVD's issued in market in 2012-13 are to be purchased with the relevant contents to energy and environment. It was also decided to purchase Journals and other famous books.

4. **Student Support and Progression**

i. More scholarships from MNRE, Govt. of India and other sponsoring agency for Ph. D and M. Tech students would be tried.

ii. Review of Student Counselling Cell and Career counselling cell would be carried out.

iii. Review of Grievance Redresser Cell & Complaints Cell for preventing sexual harassment of women, would be carried out.

iv. Alumni Association website would be up-graded.

5. **Governance and Leadership**

Discuss in open house of department meeting for better development of the department. All activities are finished within stipulated time period.

6. **Innovative Practices**

Quality enhancement in education through Extension Activities and community Services would be increased. Extension activities in the field of Energy and Environment would be continuing through our sister organization, Centre of Energy Studies and Research (CESR). CESR is an autonomous unit for R&D and extension activities in the field of renewable energy and energy conservation, especially in rural areas.

i) It is planned to carry out the Biogas training Programs in M.P and in Chhattisgarh and other projects to use the all resources available in both units.

ii) Awareness program would be continued to promote renewable energy systems like solar systems/Biogas based Power Generation projects.

iii) Scope of testing of fuels, waste water, and solar energy devices should be increased to bring the work from industries/organizations/institutes to ensure the optimum use of equipments and facilities of the both units.

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

1. Strength

(a) High spirit of Team work to complete any task assigned or taken by the School and focus on both knowledge acquisition and employment capabilities of student

(b) Promotion of Inter-disciplinary research to bring science and technology closer to humanities.
(c) Regular Field visits & seminars to provide a suitable platform for practical knowledge, skills as well as English speaking/developing Communication skills among students to prepare them a better professional.
(d) Excellent work environment for learning and research.
(e) Excellent Interaction with rural and urban society, Industries/organisations and national and International Institutes and their faculty and scientists.

2. Weakness
   (a) Deficiency of teachers
   (b) Want of adequate Infra-structure for expansion
   (c) Deficiency of latest equipments and softwares
   (d) Less recreation facilities for students in the School
   (e) All faculty members are not having Research projects.

3. Opportunities

   (a) Participation in Exchange programmes with foreign Universities
   (b) Invite alumni for guest lectures and as external experts for examination
   (c) Syllabus modifications according to Industries/organisations need
   (d) Academic autonomy to the School

4. Challenges

   (a) To develop Research and educational Laboratories of International standards
   (b) Collaboration with International Institutes / Universities/ R&D organizations.
   (c) Increasing Student-teacher ratio
   (d) To provide Value Education to students

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

The action plan was prepared by the IQAC in the beginning of the year towards quality enhancement and the outcome achieved by the end of the year. For quality assurance, self analysis and feedback through discussion with academic peers, alumni, experts and students was routinely taken, analysed and implicated for updating and development through such a practice the course paper. Students played a role in quality improvement by giving suggestions. Department worked with a goal to provide best possible knowledge in the field and for the overall development of the students through regular teaching, seminars and discussion with them.Regular updating of the course contents for advanced knowledge of various topics was done by the concerned teachers.Research activities were always encouraged and available facilities were provided to the students and other researchers of the university. Visits of eminent scholers are the regular feature in the School. Particpation was done in few workshops of university level in 2012-13.

- Quality Issues in Academics, Paper Setting and Valuation, September 26,2012.
- Fostering excellence in research, January 15, 2013.

- Aspects of Teaching-Learning: Best Practices" on May 10, 2013.
- Credit System for Students' Evaluation at COEP- A case Study, May 15 2013.

Participation in following lecture series and lectures to inspire students and faculty:

- Optical telesscopes: an eye to the universe since 1609; Fab, 02, 2013.
- Cancers and their prevention, April 09, 2013.
- Basics of identifying Heart Disease and preventive measures, April 09, 2013.

## 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* **File No. 1.1.1**

| Year | Courses | Revision |
|---|---|---|
| | | |
| 2007-08 | M. Tech | Reviewed the curriculum by departmental committee, External experts & students and No changes were suggested for this year. |
| 2008-09 | M. Tech | Reviewed the curriculum by departmental committee, External experts & students and Few changes were suggested for the year 2009.<br>• *EN 706- Air and Noise Pollution: Effects and Control Technologies* course credits was increased to 3 instead of $1^{1/2}$ credits. Course Contents were also upgraded accordingly.<br>• *EN 721: Solid Waste Management* course credits was increased to 3 instead of $1^{1/2}$ credits. Course Contents were also upgraded accordingly. |
| 2009-10 | M. Tech | Reviewed the curriculum by departmental committee. External experts & students and changes were suggested for the year 2010 as<br>• *EN-709 Mass Transfer, Basic Operation and equipments* course was removed from the Syllabus.<br>• *EN-718 Information Technology for Energy manager and Energy Software* course credits were reduced to $1^{1/2}$ instead of 3 credits. The title of the course was also changed to *EN 717 Computer application and Energy software.*<br>• Control part from *EN-717 Instrumentation, measurement and control* was removed and course credits was reduced to $1^{1/2}$ instead of 3 credits |
| 2010-11 | M. Tech | Reviewed the curriculum by departmental committee. External experts & students and changes were suggested as<br>• *EN 710 Environmental Auditing and Environmental Impact Assessment* course credits was increased to 3 instead of $1^{1/2}$ credits. |
| 2011-12 | M. Tech | Reviewed the curriculum by departmental committee, External experts & students and changes were suggested for this year as given below.<br>*Control part* was added again in *EN-716 Instrumentation, measurement and* course credits was increased to 3 instead of $1^{12/}$ credits |
| 2012-13 | M. Tech | Reviewed the curriculum by departmental committee. External experts & students and no change were suggested for this year. |

| M. Phil | | |
|---|---|---|
| 2007-08 | M. Phil | Reviewed the curriculum by departmental committee, External experts & students and Few changes were suggested for the year 2007. The following three new courses were added.<br>*EE 709: Air Pollution Control Technologies (credit 1.5)*<br>*EE 708: Solid waste Management (credit 1.5)*<br>*EE 707:Climate Change and World Scenario (credit 1.5)*<br>• New Course Contents were developed. |
| 2008-09 | M. Phil | Reviewed the curriculum by departmental committee, External experts & students and Few changes were suggested for the year 2008. The following new courses were added.<br>• *EE 702- Energy Audit and Conservation ( credits 3)*<br>• *EE 703: Water and Waste water: Pollution and treatment Technologies* course credits was decreased to 3 instead of $4^{1/2}$ credits. Course Contents were also upgraded accordingly.<br>• *EE 705: Environmental Audit and Impact Assessment Course was the part of other course initially, course was introduced separately.*<br>• *Title of the course was changed as EE 709: climate change and control mechanism* |
| 2009-10 | M. Phil | Reviewed the curriculum by departmental committee. External experts & students and changes were suggested for the year 2009 as<br>• *EE 704: Air Pollution Control Technologies*<br>Course credits were increased to 3 instead of $1^{1/2}$ credits. |
| 2010-11 | M. Phil | Reviewed the curriculum by departmental committee. External experts & students and major changes were suggested as<br>• *EE-701Clean Energy Technologies was Two separate papers as*<br>*EE-701Clean Energy Technologies I* (*$1^{1/2}$* credits)<br>*EE-702Clean Energy Technologies II* (3 credits )<br>• *Two New Papers were added titled as*<br>*EE 711: Research Methodology and Mathematical Modeling* (3 credits )<br>*EE-712: Computer Application* (3 credits ) |
| 2011-12 | M. Phil | Reviewed the curriculum by departmental committee, External experts & students and No changes were suggested. |
| 2012-13 | M. Phil | Reviewed the curriculum by departmental committee. External experts & students and changes were suggested for this year.<br>• New Tile change as EE 708: Industrial Pollution on Ecology<br>• Course contents were upgraded. |

| | | |
|---|---|---|
| | | • Merged as per Ordinance the Courses *EE 711: Research Methodology and Mathematical Modeling* and *EE-712: Computer Application* and New title was given as EE 710: *Research Methodology and computer applications (*3 credits)<br>• Review Paper was added in place of onsite training.<br>•Energy Audit and Conservation Technologies was omitted.<br>•Seminar credits was increased to credits 2 instead of 1.5 credits<br>•Major project credits were increased to 20 credits instead of 17 credits. |

Whether uploaded on website

Yes [✓] No [ ]

**Course Plan and distribution of Lecturers** **File No. 1.1.1**

### 1.1.1.A Eligibility for admission to each course

| **Name of the Course** | **Eligibility** |
|---|---|
| M. Tech Energy Management Regular | B.E/B. Tech/M. Sc-Physics or equivalent Engineering Association Examination with minimum 55% marks |
| M. Tech Energy Management Distance mode | B.E/B. Tech/M. Sc-Physics, electronics, agriculture ,Instrumentation ,Mathematics and Energy or equivalent Engineering Association Examination with minimum 55% marks |
| M. Phil –Energy and Environment | M. Se in Environmental Science or Engineering with minimum 55% marks or equivalent degree |
| Ph. D<br>• Energy<br>• Energy and Environment | Post Graduate degree in engineering or Science with minimum 55% marks |

- Reservation policy as applicable according to state government.

M. Tech. (Energy Management) - Regular

Duration 4 Semesters (2 Years)
Scholarships Rs. 8000/- for GATE Qualified candidates
Seats 13 GATE + 5 Sponsored

M. Tech. (Energy Management) - Distance Education

**DEC (Distance Education Council) IGNOU Approved course**
Duration 6 Semesters (3 Years)
Provision* After 3 Semesters PG Advance Diploma in Energy Auditing
Seats 60

M. Phil. (Energy and Environment)

Duration 2 Semesters
Seats 13
Ph. D (Energy, Energy and Environment)

**Eligibility: P.G in Engineering/Sciences (Physics, Environment or equivalent)**
Duration Minimum 4 Semesters
Seats: 8 per recognize Guide

1.1.1.B Whether reflects Vision and mission reflection

| Yes | No |
|---|---|
| ✓ | |

**Vision**

To be a frontline School in specializing in need based research and in developing professionals for energy and environmental solutions

**Mission**

- To develop and provide world class professionals with excellent analytical, communication skills, and ability to work in the field of Energy and environment
- To ensure the excellent research work to be competitive internationally and to cater the need of local/regional and national significance in the area of energy and environment;
- Inculcate professional, social and environmental ethics among youths to serve mankind and society.

**1.1.1C Write on reflection of vision and mission**

The reflection of vision and mission can be seen by assessing the student's employment in nationally and internationally reputed organizations /industries/institutions in India and abroad in the different activities. Students are working as energy planers, consultants, energy managers ,energy auditors and

implementing the small to large projects in Energy (specially in renewable energy systems) and environment. Five examples of highlights on projects designed / developed / implemented by students of our School are as follows.

- First plasma incinerator for power generation for Municipal Solid Waste(MSW) in India was completed
- Energy Conservation Prize of Rajasthan Government was given to our student.
- 500 MW solar power plant in Pokharan in Rajasthan, student of School was involve in implementation.
- Post of Directors are held in most of the Multinational companies working in Energy and Environment, for example SGS, Ernest and Young, Kopper etc in different places
- Post of Clean Development Mechanism(CDM), Advisor to ASIAN BANK is also hold by our student
- Our student is Director (CDM) in Bonn Germany in **United Nations Framework Convention on Climate Change** (UNFCCC) .

1.1.2 Details of process followed in last revision of Curriculum

**A. Need Assessment**

The demand scenario of Energy experts, consultants, Industrial jobs are changing in last five years in addition to required trained manpower in the field of renewable energy technologies. There is a scarcity of Energy and environmentally knowledge based persons in Country as well as throughout the world. The Energy conservation and with environment are also a gray area for the trained manpower.
There is need of the revision in the curriculum every year.

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

All the faculty members are always discussed and take the appropriate decisions.

1. Dr S.P Singh
2. Dr R.N Singh
3. Dr Rubina Chaudhary

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

Departmental committee and BOS Minutes are attached as File No. 1.1.2 C

D. Records of External Experts Opinion of the designed curriculum
Copy of Records is attached File No. 1.1.2-D

E. Records of External Experts Feedback of the designed curriculum
Copy of Records is attached File No. 1.1.2-E

F. Records of Student Feedback opinion on the existing curriculum
Copy of Records is attached 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,

1.1.3 Detailed write up out each course in reference to

* **Employability**

100% M. Tech Students in all the courses get chance of employability just after completing the degree. More than 98% students accept the offers and join the different organizations/Industries/consultancy firm/Govt. organizations in India or abroad. Few students go for higher education. The course curriculum is designed to meet the requirements of Energy conservation Act 2003, Renewable energy missions of Government of India and Environmental aspects of Protocols, Acts and Design of systems and Environmental Impact Assessment (EIA).

M. Phil course was designed to prepare the students for industrial/consultancy organizations in designing and use of pollution control systems and technologies in addition to create the research abilities. The orientation of the students become more practical and helps them in getting the jobs.

* **Innovation**

M. Tech in Energy Management was the first course started in India In most of the M. Tech Course are not given due weight age on impacts on environment.

The innovative aspect of M. tech in Energy Management is the balanced proportions in all aspects of theory and practical with their environmental impacts and aspects.

Similarly, M. Phil in Energy and Environment was started first time by the School in the country. M. Phil course is focused in preparing the manpower for research and skill development for field/industrial needs. Students are well trained to carry out Environmental Impact Assessments, designing of environmental control systems with energy efficiency aspects.

The alternate Saturday visit of students of all courses to industries, ETP plants and renewable system sites provide the much better insight of the systems and processes after the lectures, discussions and seeing the technical CD/DVDs of the concerned topic/system/process in the class room.

* **Research**

Emphasis is given on research and development during the course work of M. Tech, M. Phil and Ph.D. Students of M. Tech must complete a minor project based on research, innovation or skill development in the field of renewable energy systems or Environmental systems or Energy conservation in industry/organization.

Students of M. Phil prepare a Review paper on the latest topics in the field of energy or environment. Students of Ph. D are well educated in theoretical modeling and experimental work to on the related work of their Ph. D thesis.

Finally, all courses prepare students for research work of International Standard.

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?

Department Faculty members, if any, involved in leading any curricular reform which has created a national impact?
Yes

- M. Sc Environmental Science syllabus was developed for Devilal university Haryana
- IGNOU Certificate Courses Syllabus for Energy Management

1.1.5 A. Record of Interactions, Opinions and Feedbacks for the designed curriculum with External Research Bodies

File No. 1.15 A

B. Records of Interactions, Opinions and Feedbacks for the designed curriculum with Industrial Experts, particularly in case of Professional Courses

File No. 1.15 B

C. Records of Interactions, Opinions and Feedbacks for the designed curriculum with Stake Holders, such as eminent personalities, Visitors to the departments, parents

File No. 1.15 C

D. Records of Alumni opinion on the existing curriculum (may be taken in an Alumni Register)

File No. 1.15 D

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

N.A

1.1.7 Details of additional skill-oriented programmers designed for the colleges, Employees, Faculty relevant to regional needs Following Skill oriented programs were attended by employees of the projects

File No. 1.1.7

- Solar Systems Manufacturing Facilities of Maharashtra and Andhra Pradesh were visited to enhance the practical knowledge of the existing solar technologies ;21 June 2012 to 1 July 2012
- 08 Skill oriented training programs attended by Regional Test Center (RTC) SEES employees.(2007-2013)
- 07 Workshops attended related to Solar Energy Utilization (2007-2013)
-

**1.2 Academic Flexibility**

1.2.1 List of Courses taught in Department on campus

* Overseas programmes offered on campus
  N.A
* Programmes available for colleges to choose from
  N.A

1.2.2 Records on the following provisions with reference to academic flexibility

a. List of Core/ Elective options

**M.TECH. (ENERGY MANAGEMENT) 2009-2011**

**TWO YEARS COURSE STRUCTURE**

| COURSE | COURSE TITLE | Credits | Hours | Semester |
|---|---|---|---|---|
| | **Core Theory Course** | | | |
| EN-701 | Solar Energy: Fundamentals, Devices and Systems | 3 | 48 | II |
| EN-702 | New and Renewable Energy Sources and Technologies | 3 | 48 | I |
| EN-703 | Heat Transfer And Process Integration | 3 | 48 | I |
| EN-704 | Engineering Thermodynamics : Quality & Quantity Aspects | 1½ | 24 | I |
| EN-705 | Water and Waste Water: Pollution and Treatment Technologies | 3 | 48 | I |
| EN-706 | Air and Noise Pollution: Effects and Control Technologies | 3 | 48 | I |
| EN-707 | Energy Conservation (Thermal Systems) | 3 | 48 | II |
| EN-708 | Energy Conservation (Electrical Systems) | 3 | 48 | III |
| EN-709 | Energy Auditing Techniques | 1½ | 24 | II |
| EN-710 | Environmental Auditing and Environmental Impact Assessment | 1½ | 24 | II |
| EN-711 | Energy Modeling and Project Management | 3 | 48 | II |
| | **Other Theory Courses** | | | |
| EN-712 | Efficient Lighting: Sources, Systems and Design Aspects | 3 | 48 | III |
| EN-713 | Energy Efficient Building Technologies | 3 | 48 | II |
| EN-714 | Electrical Power Generation, Transmission and Distribution | 3 | 48 | II |
| EN-715 | Global and Indian Energy Scenario(Self study) | 1½ | 24 | I |
| EN-716 | Instrumentation, Measurement and Control | 1½ | 24 | I |
| EN-717 | Information Technology For Energy Managers and energy Soft wares | 3 | 48 | I |
| EN-718 | Bio and Fossil Fuels Technology | 3 | 48 | III |
| EN-719 | Energy Conservation Opportunities in Process of Designated Industries (Self Study) | 3 | 48 | III |
| EN-720 | Solid Waste Management | 3 | 48 | III |
| | **TOTAL CREDITS (THEORY)** | **52½** | | |
| | | | | |
| EN-801 | Energy Conservation Laboratory | 3 | 48 | III |
| EN-802 | Heat Transfer Laboratory | 3 | 48 | II |

| | | | | |
|---|---|---|---|---|
| EN-803 | Biomass/Biogas laboratory | 3 | 48 | I |
| EN-804 | Solar Thermal and Photo - Voltaic Laboratory | 3 | 48 | II |
| | **TOTAL CREDITS (LABORATORY)** | **12** | | |
| | | | | |
| EN-805 | Field Visits | 6 | - | II |
| EN-806 | Seminar | 3 | - | I |
| EN-807 | Digital Video Review | 3 | - | II |
| EN-808 | Mini Project | 12 | - | III |
| EN-809 | Major Project | 26 | - | IV |
| | **TOTAL CREDITS (OTHERS)** | **50** | - | |
| | **GRAND TOTAL** | **114½** | | |

**M. Phil. (ENERGY AND ENVIRONMENT)**
**YEAR: 2009-2010**

| Course No. | Course Title | Credits |
|---|---|---|
| | **Core Theory Courses** | |
| EE-701 | Clean Energy Technologies | 4.5 |
| EE-702 | Energy Audit and Conservation Technologies | 3 |
| EE-703 | Water and wastewater: Pollution and Treatment Technologies | 3 |
| EE-704 | Air and Noise Pollution: Effects and Control Technologies | 3 |
| EE-705 | Environmental Audit and Impact Assessment | 3 |
| EE-706 | Sustainable Environmental Management Tools | 3 |
| EE-707 | Specific Industrial Pollution Control: Case Studies | 3 |
| EE-708 | Solid Waste Management | 3 |
| EE-709 | Climatic Change and Control Mechanisms | 3 |
| | TOTAL CREDITS (THEORY) | 28.5 |
| | | |
| | **Practical Courses** | |
| EE-801 | Energy lab | 3 |
| EE-802 | Environment lab | 3 |
| EE-803 | Onsite Training/Minor Project/Status Report | 3 |
| EE-804 | Digital Video Review | 3 |
| EE-805 | Field Visits | 3 |
| EE-806 | Seminar | 2 |
| EE-807 | Major Project | 20 |
| | TOTAL CREDITS (LABS AND PROJECT) | 37 |
| | **GRAND TOTAL** | 65.5 |

**b. List of Enrichment courses**

Computer Applications: Energy and Environmental Software's

File No. 1.2.2 b

**c. List of Courses offered in modular form**

Planned in XII plan

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

Planned in XII plan

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

Planned in XII plan

N.A

1.2.3 Records of International students:

N.A

1.2.4 Records of Courses developed targeting international students, if any

N.A

1.2.5 Record of dual degree and twinning programmes

N.A

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

**List of Students**

| 2007-09 | 2008-10 | 2009-11 | 2010-12 | 2011-13 |
|---|---|---|---|---|
| **Student Name** | **Student Name** | **Student Name** | **Student Name** | **Student Name** |
| Pramod Bokade | Aharwal Vikas Kumar | Mr. Ambuj Adhwaryu | Mr. Laxmikant Gaikwad | Anwer Nabeel |
| Lokesh Joshi | Bhargav Satish Kumar | Mr. Manish Dubey | Mr. Umang Gupta | Arya Himanshu |
| Sanjay Kandari | Hiwase Rahul Vijayrao | Mr. Shyam Gupta | Miss. Anjali Kanungo | Baghel Rajeev Kumar |
| Mohanish Khare | Joshi Pradeep | Mr. Jayant Jain | Mr. Sohail Khan Pathan | Birthray Ku. Aparna |
| Pankaj Kumar | Khan Juned | Ms. Garima Nema | Mr. Madhav Kothari | Chouhan Balwant |
| Rahul Mahajan | Kolhe Rahul Bhimrao | Mr. Pawar Kumar Subhash | Mr. Kumbhar Mangesh Mohan | Garg Rohit |
| Arpita Patankar | Kumar Atul | Mr. Priyadarshi Khare | Mr. Kaushal Lodaya | Gawade Siddhesh Srikant |
| Rajkumar Rajalwal | Nagar Ankit | Mr. Deepak Rathod | Mr. Shashank Mandovra | Jawney Ketan |
| Anil Samudre | Nagar Ankur | Mr. Ashish Sethiya | Mr. Aditya Nandanpawar | Khan Mohd. Khalid |

| | | | | |
|---|---|---|---|---|
| Chetan Swaroop Sharma | Sahu Dushyant | Mr. Himanshu Sharma | Mr. Prashant Nene | Mishra Ku. Nistha |
| Pragya Sharma | Samal Sager Kumar | Mr. Mohammad Shahzad Sheikh | Mr. Chinten Singh Parmar | Patidar Piyush |
| Ajay Singh Thakur | Shah Kamlesh | Mrs. Laxmi Raikwar Singadiya | Miss. Richa Patel | Rajput Pramod |
| Vkash Yadav | Vyas Ankit | Ms. Aarti Singh | Miss. Neha Pathak | Sharma Mihir Kumar |
| | | Mr. Ashish Verma | Mr. Kaushik Paul | Singh Anand Kumar |
| | | | Mr. Bharat Rangwani | Singh Ku. Pratibha |
| | | | | Sinha Ranjeet Ranjan |
| | | | | Sirsate Ku. Prachi |
| | | | | Verma Ku. Varsha |

**Admission Process**

| Name of the Course | Eligibility |
|---|---|
| M. Tech Energy Management Regular | B.E/B. Tech/M. Sc-Physics or equivalent Engineering Association Examination with minimum 55% marks |
| M. Tech Energy Management Distance mode | B.E/B. Tech/M. Sc-Physics, electronics, agriculture ,Instrumentation ,Mathematics and Energy or equivalent Engineering Association Examination with minimum 55% marks |
| M. Phil –Energy and Environment | M. Se in Environmental Science or Engineering with minimum 55% marks or equivalent degree |
| Ph. D<br>• Energy<br>• Energy and Environment | Post Graduate degree in engineering or Science with minimum 55% marks |

**For M. Tech Gate Candidates**

- Merit based on last examination +GATE Score + Interview

**For M. Tech Non-Gate Candidates**

- Merit based on last examination +Interview

**For M. Phil Candidates**

- Syllabi of M. Phil Test and Interview by DRC

**For Ph.D Candidates**

- Syllabi of Ph. D Test and Interview by DRC

**STUDENT SERVICES FEE (Applicable for All UTDs) (ACADEMIC YEAR 2013-14)**

| S.No | Item | Odd Semester(2013-14) | | Even Semester (2013-14) | |
|---|---|---|---|---|---|
| | | BOYS | GIRLS | BOYS | GIRLS |
| 1 | University Tuition Fees | 189.00 | -- | 189.00 | -- |
| 2 | UTD Fees | 126.00 | 126.00 | 126.00 | 126.00 |
| 3 | Health Center | 79.00 | 79.00 | 79.00 | 79.00 |
| 4 | University Sports fee | 189.00 | 189.00 | 00.00 | 00.00 |
| 5 | Poor students Library fee | 105.00 | 105.00 | 00.00 | 00.00 |
| 6 | Students Accident fund | 21.00 | 21.00 | 00.00 | 00.00 |
| 7 | Handicapped Student's aid fund | 21.00 | 21.00 | 00.00 | 00.00 |
| 8 | Student Welfare | 53.00 | 53.00 | 00.00 | 00.00 |
| 9 | Book Bank | 84.00 | 84.00 | 00.00 | 00.00 |
| 10 | Maintenance | 210.00 | 210.00 | 00.00 | 00.00 |
| 11 | Contribution of Deptt. Exam. fee | 79.00 | 79.00 | 79.00 | 79.00 |
| 12 | Group Insurance | 105.00 | 105.00 | 00.00 | 00.00 |
| 13 | Miscellaneous Charges | 158.00 | 158.00 | 158.00 | 158.00 |
| 14 | Cultural Centre Activity and Maintenance Fee | 263.00 | 263.00 | 263.00 | 263.00 |
| 15 | Health File | 53.00 | 53.00 | 53.00 | 53.00 |
| 16 | Internet (IT Centre Fee) | 525.00 | 525.00 | 525.00 | 525.00 |
| **Total** | | **2260.00** | **2071.00** | **1472.00** | **1283.00** |

UTD Fee for 2013-14

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

N.A

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

File No. 1.2.7

1.2.8 Details of Choice Based Credit System (CBCS)
Planned for 2013-14

1.2.9 Records of Departmental Academic Calendars of each semester
Hosted at www.ees.dauniv.ac.in File No. 1.2.9

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

File No. 1.2.10

- M. Tech Energy Management
- M. Phil Energy and Environment

**1.3 Curriculum Enrichment**

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

File No. 1.3.1 A

B Records of review, up-gradation,

File No. 1.3.1 B

C. Records of social relevancy,

File No. 1.3.1 C

D. Records of job orientation

File No. 1.3.1 D

E. Records of knowledge intensive nature of each course

File No. 1.3.1 E

F. Records of meeting the emerging need of students

File No. 1.3.1 F

G. Records of meeting the emerging need of stakeholders

File No. 1.3.1 G

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

* Inter-disciplinary N.A
* Programmes in emerging areas N.A

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

- ✓ School taken note of International demand of trained manpower in Energy and environment, research and applications in the field of Energy and Environment are discussed in Departmental Committee regularly and assess the future demand of specific knowledge areas.
- ✓ Feedback from experts, students, stakeholders and industrial persons are considered at the time of curriculum revision.
- ✓ The meeting of Departmental Committee recommended the revisions and submits to Board of Studies (BOS).
- ✓ Finally, the approval of modifications/revisions are discussed in BOS and approved.

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

| Year | Courses | Revision | % change in courses |
|---|---|---|---|
| 2007-08 | M. Tech | Reviewed the curriculum by departmental committee, External experts & students and No changes were suggested for this year. | 0% |
| 2008-09 | M. Tech | Reviewed the curriculum by departmental committee, External experts & students and Few changes were suggested for the year 2009.<br>• *EN 706- Air and Noise Pollution: Effects and Control Technologies* course credits was increased to 3 instead of $1^{1/2}$ credits. Course Contents were also upgraded accordingly.<br>• *EN 721: Solid Waste Management* course credits was increased to 3 instead of $1^{1/2}$ credits. Course Contents were also upgraded accordingly. | 10% |
| 2009-10 | M. Tech | Reviewed the curriculum by departmental committee. External experts & students and changes were suggested for the year 2010 as<br>• *EN-709 Mass Transfer, Basic Operation and equipments* course was removed from the Syllabus.<br>• *EN-718 Information Technology for Energy manager and Energy Software* course credits were reduced to $1^{1/2}$ instead of 3 credits. The title of the course was also changed to *EN 717 Computer application and Energy software.*<br>• Control part from *EN-717 Instrumentation, measurement and control* was removed and course credits was reduced to $1^{1/2}$ instead of 3 credits<br>• | 15% |
| 2010-11 | M. Tech | Reviewed the curriculum by departmental committee. External experts & students and changes were suggested as<br>• *EN 710 Environmental Auditing and Environmental Impact Assessment* course credits was increased to 3 instead of $1^{1/2}$ credits. | 5% |

| | | | |
|---|---|---|---|
| 2011-12 | M. Tech | Reviewed the curriculum by departmental committee, External experts & students and changes were suggested for this year as given below.<br><br>*Control part* was added again in *EN-716 Instrumentation, measurement and* course credits was increased to 3 instead of $1^{12/}$ credits | 5% |
| 2012-13 | M. Tech | Reviewed the curriculum by departmental committee. External experts & students and no change were suggested for this year. | 0% |
| **M. Phil** | | | |
| 2007-08 | M. Phil | Reviewed the curriculum by departmental committee, External experts & students and Few changes were suggested for the year 2007. The following three new courses were added.<br>*EE 709: Air Pollution Control Technologies (credit 1.5)*<br>*EE 708: Solid waste Management (credit 1.5)*<br>*EE 707:Climate Change and World Scenario (credit 1.5)*<br>• New Course Contents were developed. | 30% |
| 2008-09 | M. Phil | Reviewed the curriculum by departmental committee, External experts & students and Few changes were suggested for the year 2008. The following new courses were added.<br>• *EE 702- Energy Audit and Conservation ( credits 3)*<br>• *EE 703: Water and Waste water: Pollution and treatment Technologies* course credits was decreased to 3 instead of $4^{1/2}$ credits. Course Contents were also upgraded accordingly.<br>• *EE 705: Environmental Audit and Impact Assessment Course was the part of other course initially, course was introduced separately.*<br>• *Title of the course was changed as EE 709: climate change and control mechanism* | 30% |
| 2009-10 | M. Phil | Reviewed the curriculum by departmental committee. External experts & students and changes were suggested for the year 2009 as<br>• *EE 704: Air Pollution Control Technologies*<br>Course credits were increased to 3 instead of $1^{1/2}$ credits. | 5 % |
| 2010-11 | M. Phil | Reviewed the curriculum by departmental committee. | |

| | | | |
|---|---|---|---|
| | | External experts & students and major changes were suggested as<br>• *EE-701Clean Energy Technologies was Two separate papers as*<br>*EE-701Clean Energy Technologies I* (1 1/2 credits)<br>*EE-702Clean Energy Technologies II* (3 credits )<br>• *Two New Papers were added titled as*<br>*EE 711: Research Methodology and Mathematical Modeling* (3 credits )<br>*EE-712: Computer Application* (3 credits ) | 33% |
| 2011-12 | M. Phil | Reviewed the curriculum by departmental committee, External experts & students and No changes were suggested. | 0% |
| 2012-13 | M. Phil | Reviewed the curriculum by departmental committee. External experts & students and changes were suggested for this year.<br>• New Tile change as EE 708: Industrial Pollution on Ecology<br>• Course contents were upgraded.<br>• Merged as per Ordinance the Courses *EE 711: Research Methodology and Mathematical Modeling* and *EE-712: Computer Application* and New title was given as EE 710: *Research Methodology and computer applications* (3 credits)<br>• Review Paper was added in place of onsite training.<br>• Energy Audit and Conservation Technologies was omitted.<br>• Seminar credits was increased to credits 2 instead of 1.5 credits<br>• Major project credits were increased to 20 credits instead of 17 credits. | 20% |

1.3.4 A. Details of Value-added courses offered

- ✓ Computer Applications: Energy related Software
- ✓ Engineering Thermodynamics
- ✓ Global and Indian Energy Scenario
- ✓ Instrumentation, Measurement and Control
- ✓ Energy Conservation opportunities in Process of Designated Industries
- ✓ Air and Noise Pollution: Effects and Control Technologies

B. Details of these courses access to students

All above courses are offered and access to students and completed by all students.

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, ….)

Students are involved in consultancy projects also to develop their skills in realistic field work.

***Jawaharlal Nehru National Misssion for Solar Power Plants***

Student's skills are well developed in Report Preparation for Solar Power Plants for JN Solar Mission. They are well trained to carried out the activities of Potential Assessment, Measurements, site Preparation, Data Collection and Technical and economic Analysis for feasibility or integrated system design for implementation independently.

***Bureau of Energy Efficiency and Energy Conservation ACT 2001and Electricity Act 2003***

School is well equipped to train the students in Energy Auditing and conservation. Also Energy Efficiency projects can be prepared by students. All interested students cleared the Energy Auditor /Energy Manager Examination of BEE, Govt. of India and working successfully in high positions in International or National organizations.

***NABL and BIS Standards: Testing of Solar Thermal Devices and systems***

Students have fully developed skills in testing of solar thermal gadgets as per the International or National standards or Protocols during their course work.

***M. Tech Distance Education***

In anticipation of the Energy conservation Act tabled in Parliament in year 2000, 50,000 trained manpower would be needed to cater the requirements of Energy auditors/Energy Managers for Industries/ organizations as assessed by Govt. of India. The department prepared and started the M. Tech (Energy management) course in distance mode in the year of commencement of EC Act 2003 for the working engineers/executives/other relevant persons in the field. This was an innovative and very successful program. School educated and prepared Energy professionals to take lead in any area of Energy with the specialization in Renewable energy Technologies, Energy auditing and Conservation and in Energy management.

## 1.4 Feedback System

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

File No. 1.4

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

File No. 1.4

1.4.2 A. Method used for eliciting feedback on the curriculum from national and international faculty

Discussions and visits at national and International Institutes.

B. Conducting webinars

Planned for 2013-14

C. Curriculum development Workshops

Planned for 2013-14

D. Curriculum development online discussions

Planned for 2013-14

E. Impact of Workshop and discussions

Impact will be seen 2013-14

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.

N.A

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

- Emphases are laid on seminars, group discussions and inter disciplinary activities.
- Participation is ensured of all students in the Research activities of the Department.
- Students acquire latest knowledge in a particular topic as well as help in developing the creative ability.
- Interacting with the alumni, Industries and experts is ensured so that the syllabus reflects the contemporary trends.

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

## CRITERION II: TEACHING-LEARNING AND EVALUATION

### 2.1 Student Enrolment and Profile

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

**File No. 2.1**

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

**ADMISSION PROCEDURE**

Admission notice for all the programmes is published in Employment News and Selected national and local newspapers in the month of April/May and also displayed on University Website: www.dauniv.ac.in . Applications are downloaded or apply online from the website: mponline.gov.in

**I. Regular Programmes**

Application Form is obtained by sending a D.D. of Rs. 400/- in favour of "Registrar, D.A.V.V.", payable at Indore along with duly stamped (for ordinary, registered or speed post mail) self addressed envelope.
Short listed applicants are selected on the basis of their marks in qualifying examination and their performance in the interview held in second week of July, separately for each course.

**II. Distance Education Programme**

Application form is obtained by sending a D.D. of Rs. 500/- in favour of M. Tech Energy Management Distance Education", payable at Indore. Students will be selected on the basis of their marks obtained in B.E. / B. Tech / M.Sc. (Physics, Electronics, Agriculture, Instrumentation, Mathematics & Energy, Post Graduation Diploma in Energy Management, Physical Chemistry) with minimum 55% marks. Additional weightage may be given to the candidates having ME/ M. Tech degree in other engineering programme and industrial/ teaching/ consultancy experience.

Applications forms along with the details can also be downloaded from the University website. The downloaded application form should accompany a DD of amount as given above or apply MP online through mponline.gov.in

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

**Merit and Interview**

**M TECH:**

**For GATE qualified student**

25% UG merit + 25% GATE percentile + 50% for personal Interview

For Non GATE qualified student

40% UG merit + 60% for personal Interview

**M PHIL**

**Up to 2007 -2010**

40% PG merit + 60% for personal Interview

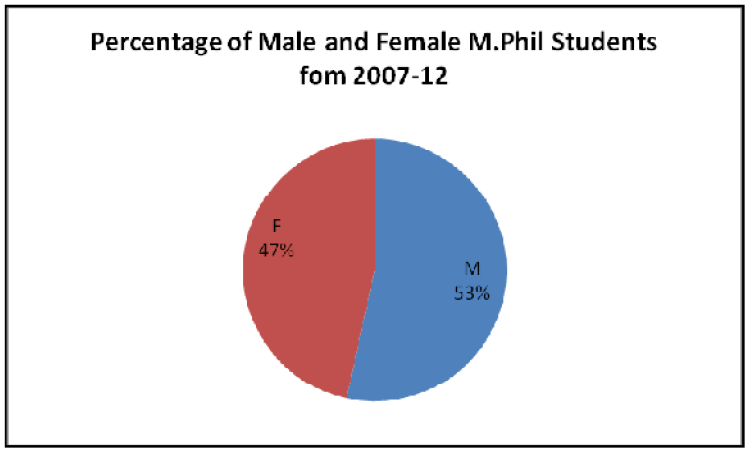
**From 2011 onwards: 25**% PG merit + 25% written test + 50% for personal Interview

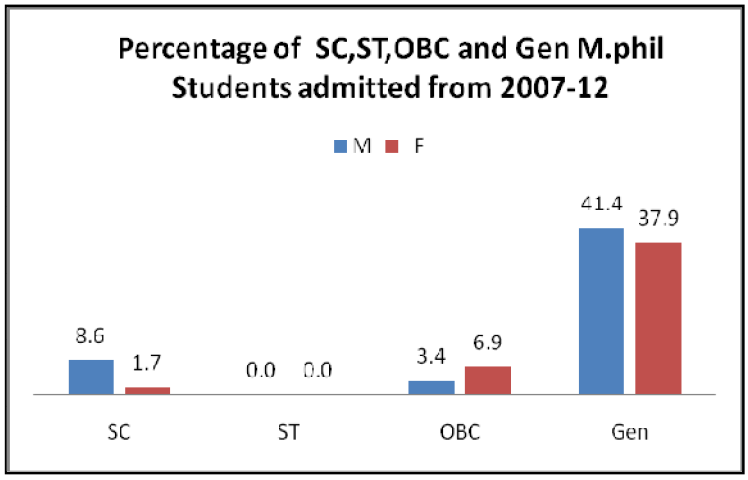
2.1.3 Details of admission process in the affiliated colleges if department is monitoring the same.

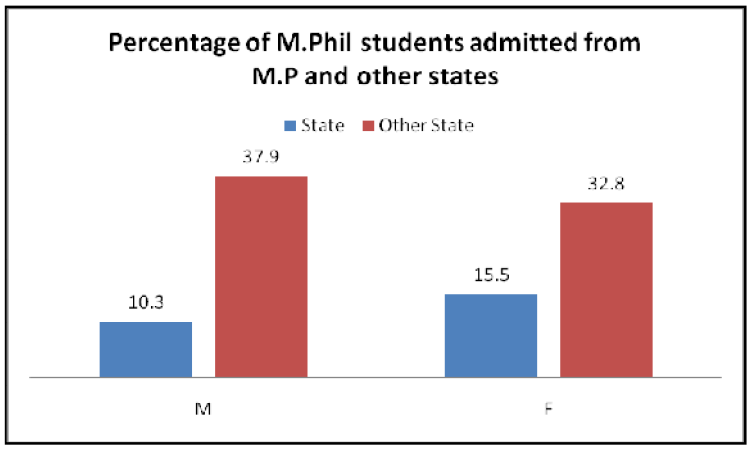
**N.A**

2.1.4 Student profile analysis

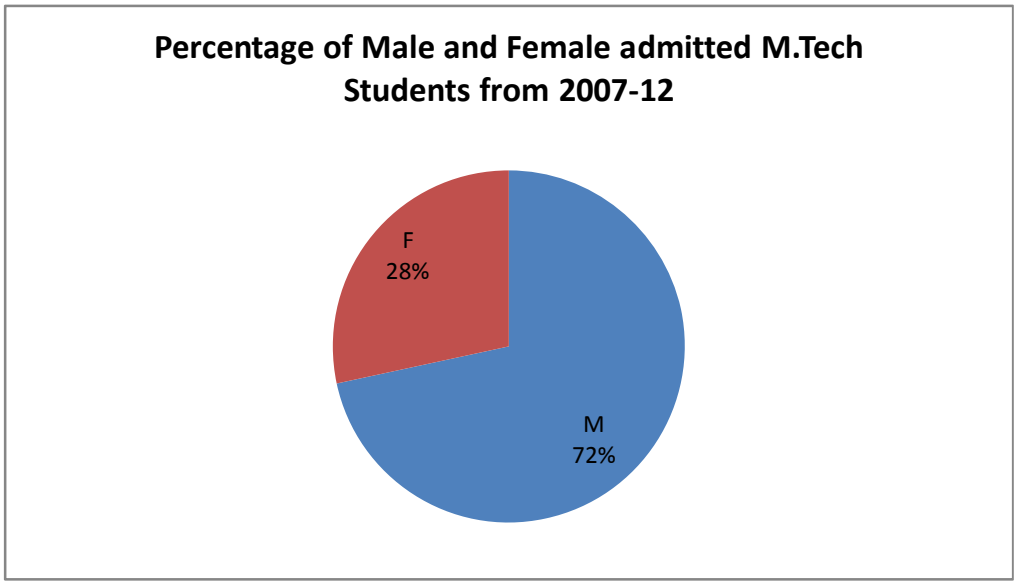
| **Categories** | | **2007-08** | **2008-09** | **2009-10** | **2010-11** | **2011-12** | **2012-13** |
|---|---|---|---|---|---|---|---|
| | | M. Phil | M. Phil | M. Phil | M. Phil | M. Phil | M. Phil |
| SC | M | 1 | 1 | 2 | 1 | - | - |
| | F | - | - | - | 1 | - | - |
| ST | M | - | - | - | - | - | - |
| | F | - | - | - | - | - | - |
| OBC | M | 1 | - | - | 1 | - | - |
| | F | 2 | - | - | 1 | - | 1 |
| Gen | M | 3 | 7 | 4 | 4 | 3 | 3 |
| | F | 6 | 5 | 3 | 3 | 4 | 1 |
| Others | M | - | - | - | - | - | - |
| | F | - | - | - | - | - | - |
| State | M | 3 | 1 | - | 1 | - | 1 |
| | F | - | 7 | 1 | - | 1 | - |
| Other State | M | 2 | 4 | 6 | 5 | 3 | 2 |
| | F | 8 | - | 2 | 5 | 3 | 1 |
| GATE/ NET/SLET qualified | M | | - | - | - | - | - |
| | F | - | - | - | - | - | - |
| GATE/ NET/SLET Non-qualified | M | - | - | - | - | - | - |
| | F | - | - | - | - | - | - |

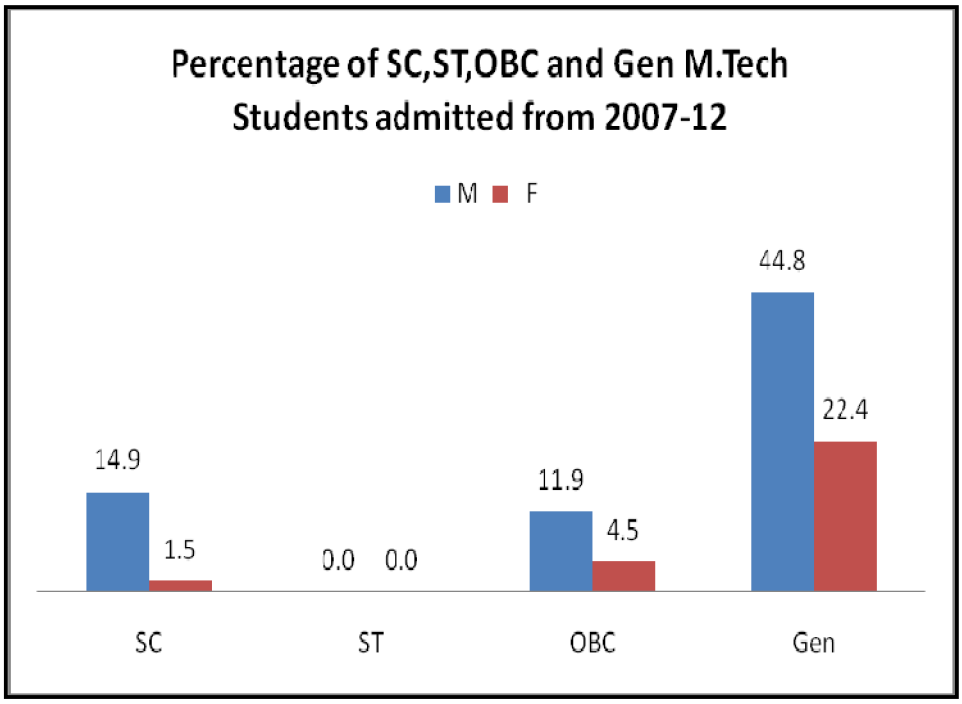

Percentage of Male and Female M.Phil Students fom 2007-12
F
47%
M
53%

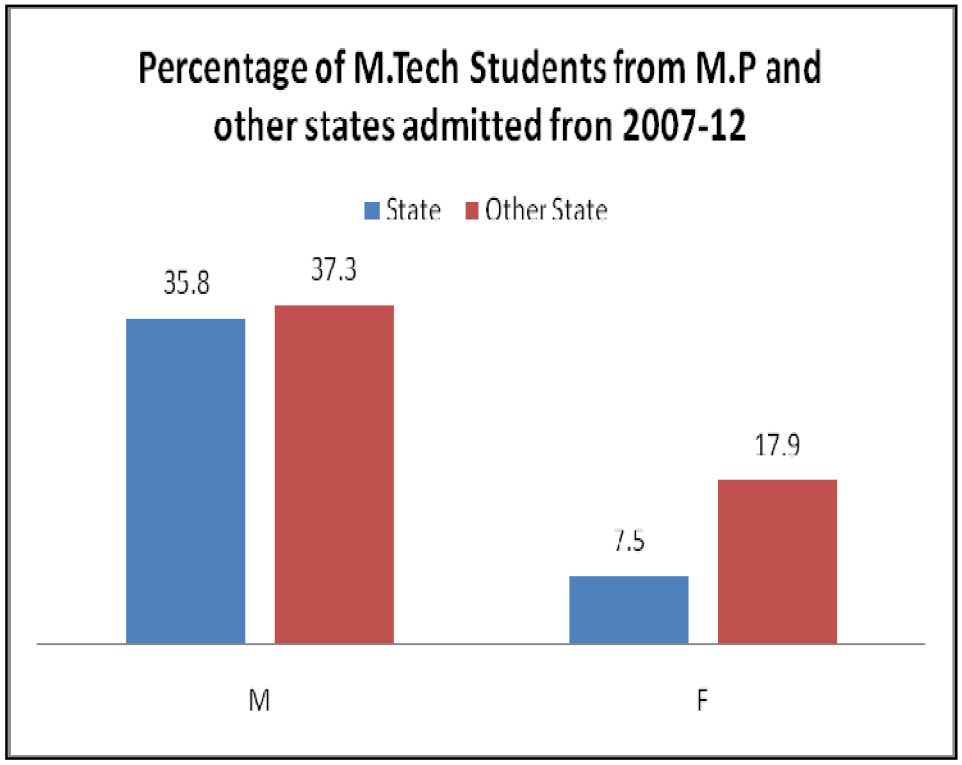

Percentage of SC,ST,OBC and Gen M.phil Students admitted from 2007-12
M
F
8.6
1.7
0.0
0.0
3.4
6.9
41.4
37.9
SC
ST
OBC
Gen


Percentage of M.Phil students admitted from M.P and other states
State
Other State
10.3
37.9
15.5
32.8
M
F

| Categories | | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 |
|---|---|---|---|---|---|---|---|
| | | M. Tech | M. Tech | M. Tech | M. Tech | M. Tech | M. Tech |
| SC | M | 4 | 3 | 1 | - | - | 2 |
| | F | - | - | 1 | - | - | - |
| ST | M | - | - | - | - | - | - |
| | F | - | - | - | - | - | - |
| OBC | M | 1 | 4 | 1 | - | - | 2 |
| | F | - | 1 | 1 | - | 1 | - |
| Gen | M | 6 | 7 | 4 | 3 | 3 | 7 |
| | F | 2 | - | 3 | 4 | 1 | 5 |
| Others | M | - | - | - | - | - | - |
| | F | - | - | - | - | - | - |
| State | M | 7 | 9 | 1 | - | 1 | 6 |
| | F | 2 | - | - | 1 | - | 2 |
| Other State | M | 4 | 6 | 5 | 3 | 2 | 5 |
| | F | - | - | 5 | 3 | 1 | 3 |
| GATE/ NET/SLET qualified | M | 6 | 4 | - | - | - | 7 |
| | F | - | - | - | - | - | - |
| GATE/ NET/SLET Non-qualified | M | 5 | 10 | - | - | - | 4 |
| | F | 2 | 1 | - | - | - | 5 |




Percentage of SC,ST,OBC and Gen M.Tech Students admitted from 2007-12
M
F
14.9
1.5
0.0
0.0
11.9
4.5
44.8
22.4
SC
ST
OBC
Gen


Percentage of M.Tech Students from M.P and other states admitted fron 2007-12
State
Other State
35.8
37.3
7.5
17.9
M
F

2.1.5 Strategies adopted to increase/improve access for students belonging to the following Categories:

* SC/ST
  - ✓ As per State and Central Government Rules

* OBC
  - ✓ As per State and Central Government Rules
* Women
  - ✓ 33% reservation

* Persons with varied disabilities
  - ✓ 3% reservation
  - ✓ Personal assistance for students from welfare department

* Economically weaker sections
  - ✓ Financial assistance for students from welfare department
* Outstanding achievers in sports and other extracurricular activities
  - ✓ Weightage in Marks up to 3% on Admission
  - ✓ Free ships to National and International Players
  - ✓ Special examinations in case dates of competition clashes with examination dates

Advertisement and internet information with Reservation policy is notified which is effective and adopted in the department.

- ✓ SC/ST/OBC Free ships and Scholarships are given by State Government

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

| Categories | Year 1 (2007-08) | | Year 2 (2008-09) | | Year 3 (2009-10) | | Year 4 (2010-11) | | Year 5 (2011-12) | | Year 6 (2012-13) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M | F | M | F | M | F | M | F | M | F | M | F |
| SC | 4 | 3 | 3 | 0 | 2 | | 1 | 1 | 0 | 1 | 2 | 0 |
| ST | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 1 | 0 | 0 | 0 |
| OBC | 1 | 0 | 5 | 0 | 3 | | 2 | 1 | 6 | 1 | 3 | 1 |
| Gen | 11 | 8 | 14 | 5 | 13 | 7 | 15 | 4 | 9 | 7 | 10 | 6 |
| Others | | | | | | | | | | | | |
| **Total** | **16** | **11** | **22** | **5** | **18** | **7** | **18** | **06** | **16** | **9** | **15** | **7** |
| **Grand Total** | **27** | | **27** | | **25** | | **24** | | **25** | | **22** | |

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

| **Name of the Course** M. Tech (regular) | **Applications received** | Total Seats | Demand Ratio |
|---|---|---|---|
| 2007-08 | 69 | 18 | 1:3.8 |
| 2008-09 | 49 | 18 | 1:2.7 |
| 2009-10 | 37 | 18 | 1:2.1 |
| 2010-11 | 62 | 18 | 1:3.4 |
| 2011-12 | 78 | 18 | 1:4.3 |
| 2012-13 | 60 | 18 | 1:3.3 |

**Five Years Average Demand Ratio =3.9**

| **Name of the Course** M. Phil | **Applications received** | **Total Seat** | **Demand Ratio** |
|---|---|---|---|
| 2007 | 42 | 13 | 1:3.2 |
| 2008 | 45 | 13 | 1:3.5 |
| 2009 | 17 | 13 | 1:1.3 |
| 2010 | 23 | 13 | 1:1.8 |
| 2011 | 16 | 13 | 1:1.2 |
| 2012 | 13 | 13 | 1:1.0 |

| **Name of the Course** Ph. D | **Applications received** | **Total Seat** | **Demand Ratio** |
|---|---|---|---|
| 2012 | 33 | 07 | 1:4.7 |

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

| **Programmes** | **Number of applications** | **Number of students admitted** | **Demand Ratio** |
|---|---|---|---|
| M. Tech (PG ) | 37-78 | 12-18 | Varies 1:3.1 to 1:5.3 in last five years Not much affected |
| M. Phil. | 16-45 | 05-13 | Varies 1:4.1 to 1:2.3 in last five years Decreasing |
| Ph.D. | 33 | 07 | 1:4.7 |
| Any other (please specify) | | | |

**Observations**

- M. Tech Energy Management program, Demand Ratio was gone down in 2009-10 only to 1:2.1, but increasing again in recent years due to the market growth in energy sector.

- M. Phil (Energy and Environment) program, Demand Ratio was gone down continuously in last five years from 3.2 to 2.7 due to several reasons. The main reasons were the delay in result in neighboring States and also in our state, curfew in U.P and Kashmir regions, and students interesting in direct Ph. D admissions.
- Direct Ph. D programmes are having increasing trends due to accelerated promotions for Ph. D$^{s}$ in teaching posts and better job opportunities in the Energy and Environmental Field.

2.1.8 A. Record of any programme discontinued/staggered in the last four years?
B. If yes, write-up of the reasons.
- **M. Tech –(Energy management Distance mode)**
- **Due to MHRD circular, engineering course cannot be run after 2010.**

**2.1.8 Record of Admissions**
- **B.E/B. Tech and M. Sc (Physics)**
- M. Sc Environment Science

| **Program** | **Total Number of admissions** | | | | |
|---|---|---|---|---|---|
| | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 |
| M. Tech (PG) | 12 | 17 | 18 | 17 | 17 |
| M. Phil | 05 | 10 | 06 | 06 | 07 |
| Ph.D. | 03 | 05 | 05 | 07 | 00 |
| Any other (please specify) | Nil | Nil | Nil | Nil | Nil |

| **Program** | **Number of 1st division pass students in qualifying** | | | | | **Number of 2nd division pass students in qualifying** | | | | | **Entrance test Marks % (Min)** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | |
| M. Tech (PG) | 13 | 12 | 15 | 18 | 17 | Nil | Nil | Nil | Nil | Nil | 55% in GEN/ OBC And 50% in SC/SC |
| M. Phil | | | | | | | | | | | 55% in |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10 | 05 | 09 | 06 | 5 | 1 | Nil | Nil | Nil | | GEN/ OBC And 50% in SC/SC |
| Ph.D. | 00 | 03 | 05 | 05 | 01 Submitted | Nil | Nil | Nil | Nil | Nil | 55% in GEN/ OBC And 50% in SC/SC |
| Any other (please specify) | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | |

**2.2 Catering to Diverse Needs of Students**

2.2.1 A. Record of organization of orientation/ induction programme for fresher's

- Organised at University Level in Auditorium for all students in Sept 2012
- Department organize a induction program cum get together with all new admit tees and previous year students

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

- Half day program for induction
- Topics discussed: Students problems related to accommodation, food and relatives in Indore.

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

- ✓ Orientation programme is planned from 2013-14 for explaining department's ethics, infrastructure, activities and evaluation method and for explaining programme objectives and outcomes.

B. Record of key issues identified and addressed

- ✓ These issues are sorted out immediately. No record of it is kept.

2.2.3 A. Record of bridge/remedial/ add-on courses

Remedial classes for weak students in tests planned for 2013-14. File No. F3 2.2.3

B. Time table and details of the courses offered in the department-wise for all courses

- ✓ A copy of table and details of the course is provided to each student.
- ✓ Hosted on website ees.dauniv.ac.in File No. F 3 2.2.3

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

**File No. F 3 2.2.4**

B. Main findings?

Growth in learning was found slow in the beginning, but now it is satisfactory.

2.2.5 Record of identification and responses to the learning needs of advanced learners

These students are assigned study of latest topics and practical aspects of understand Energy and Environment.

**(a) M. Phil 2007-2008**

| S.No | Students Name | Study Assigned and Completed |
|---|---|---|
| 1. | Mr. Rakesh Ranjan Tiwari | Waste Heat Recovery Based CDM Project of Kundil Power Supply Company Ltd. Begaum: A Case Study at Emergent Ventures India Pvt Ltd |
| 2. | Ms. Mandira Saha | Environmental Monitoring Analysis And Stabilization Studies For The Abatement Of Organic Content & Ammonia In Hazardous Waste |
| 3. | Mr. Ramanuj Verma | Design Of 12 MGS Sewage Treatment Plant Keshopur, New Delhi |

**(b) M. Phil 2008-2009**

| S.No. | Students Name | Study Assigned and Completed |
|---|---|---|
| 1. | Anand Kumar Gupta | Shifting of Non Confirming Polluting Industries in Agra to Confirming Area & Designing A CETP for Tanning Industry |
| 2. | Ku. Payal Pancholi | Analysis of Process Performance & Energy Consumption At 62.5 MLD Sewage Treatment Plant ,Delawas , Jaipur |
| 3. | Ahmad Mubashir Malik | Waste Water & Hazardous Waste Management Including Designing to Two ETP S (4 & 5.5 MLD) & A Secure Land Fill Facility at Patratu Thermal Power Station |

**(c )M. Phil 2009-2010**

| S.No. | Students Name | Study Assigned and Completed |
|---|---|---|
| 1. | Mr. Mohmad Shahid Siddique | Performance Evaluation of RWSS DAUSA District (Rajasthan) |
| 2. | Ms. Shubhra Singh | Energy Recovery In Sewage Treatment Plant & Role in Earning Carbon Credit |

**(d) M. Phil 2010-2011**

| S.No. | Students Name | Study Assigned and Completed |
|---|---|---|
| 1. | Ms. Anjali Barwal | Process Design of 12 MGD Capacity Sewage Treatment Plant At Keshopur New Delhi, Based on Moving Bed Bio Rector (MBBR) Technology |
| 2. | Mr. Yashawant Kr Pandey | Detail Study of Hazard Risk Assessment & Vulnerability Analysis For Distance Management In Chhattisgarh State (District: Dantewara & Baster) |
| 3. | Ms. Swati Sauran | Optimization of the Process Parameters for Biosorption Of Chromium In Electroplating Effluent by Bacillus Cereus |
| 4. | Mr. Sunil Sharma | Process Design of 30 MGD Capacity Sewage Treatment Plant at Okhla, New Delhi Based on Up Flow Anaerobic Sludge Blanket Technology with Facultative Aerated Logon |

**(e)M. Phil 2011-2012**

| S.No. | Students Name | Study Assigned and Completed |
|---|---|---|
| 1. | Ku. Sadhana Pandey | Performance Evaluation & Up Gradation of Common Effluent Treatment Plant, Vapid , Gujarat |
| 2. | Ku. Bhavisha Sharma | A Decadal Trend of Air Pollution Scenario In Delhi |
| 3. | Ku. Mamta Singh | Performance Evaluation Of Individual ETP " S to Improve CETP & ITS GIS Mapping VAPI Gujarat |

**(f) M. Tech 2007-2009**

| S.No. | Students Name | Study Assigned and Completed |
|---|---|---|
| 1. | Lokesh Joshi | Designing of Earth Air Tunnel of Cater the Fresh Air Requirement of an Office Building |
| 2. | Sanjay Kandari | 10 Mw Wind Project Design Project Design Document of Maharashtra & A Study on Role Of Energy Audit in Carbon Foot Print Reduction in Designated Industries |
| 3. | Pankaj Kumar | Designing of Grid Connected 5 Mw Solar PV Power Plant |

**(g) M. Tech 2008-2010**

| S.No. | Students Name | Study Assigned and Completed |
|---|---|---|
| 1. | Khan Juned | Framework for Micro Scale Renewable Energy & Energy Efficiency Project to Enhance Sustainable Development |
| 2. | Nagar Ankit | Detail Energy Audit of Leading Engineering Plant |

**(h) M. Tech 2009-2011**

| S.No. | Students Name | Study Assigned and Completed |
|---|---|---|
| 1. | Ms. Aarti Singh | Effect of Gas Production due to Different Waste Combinations with Poultry Letter |
| 2. | Mr. Ashish Verma | Designing & Exaction of Grid Connected 1 Mw Solar PV Power Plant |
| 3. | Ms. Garima Nema | Study of Wind Characteristics and Effect of Obstacles of Wind Energy Generation of Manat Kheda, Ratlam |

**(i) M. Tech 2010-2012**

| S.No. | Students Name | Study Assigned and Completed |
|---|---|---|
| 1. | Miss. Neha Pathak | Techno - Economic Feasibility of Grid Connected 20 MW Solar PV Power Plant |
| 2. | Mr. Prashant Nene | Detailed Project Management Cycle for Renewable Energy Certification (REC) & Power Trading |

**2.3 Teaching-Learning Process**

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

- Hard Copies of Teaching plan and schedule are distributed to students in advance.
- Examinations held as per Ordinance 31
- Information is hosted at website www.dauniv.ac.in File No. 1.1.1

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

**Website: www.dauniv.ac.in**

B. Methods used for effective implementation

- Time Scheduling in teaching Plan is monitored.

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

- No Difficulty Faced

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

Faculty positions are vacant, therefore in the some general courses are taken by visiting Faculty. The most of the specialized courses are taught by permanent Faculty by taking extra load in each semester.

2.3.4 A. Record of student-centric learning activities

**Active learning**:

- *Assignments. Tutorials, seminar* and *question answer sessions* in classroom teaching.

**Cooperative learning:**

- *Energy Audis* of Organizations /Institutes/Industries
- *Student's discussion* on actual systems at different sites during field visit.

I**nductive teaching and learning**

- Case Studies discussed for *problem based learning,*
- Projects : Minor and Major projects given for *project-based learning,*

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.

Faculty guides and facilitates the following activities.

**Interactive learning activities**

- *Group Discussion* after DVD's shows on specific technical topic

**Experiential learning activities**

- Laboratories work on Solar Thermal systems and PV, Biomass and biogas, Heat transfer and energy conservation are carried out by students.
- Software's on Green Building Simulation, Solar Thermal systems design and PV power plant design and simulations are learned out by students.

2.3.5 List, record with photographs of activities such as invited experts/people of eminence to deliver lectures and/or organize seminars for students

**File No. F3-2.3.5**

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

- Teachers are using e-learning resources, downloaded web material and use simulation software's in laboratory.

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

- Facilities of Internet, Wi-Fi, computer and LCD projectors are used effectively in teaching. **File No. F3-2.3.7**

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

Group e-mail I.D of each batch is created to form an community to interchange of ideas and activities. **File No. F3-2.3.8**

2.3.9 Record of steps taken to convert traditional classrooms into 24x7 learning places

- Classrooms are attached with Audio-Visual and Internet facilities
- Air conditioned class room for better thermal and good environment for learners are available.

2.3.10 A. Record of actions taken to avail the services of counselors/mentors/advisors for each class or group of students for academic, personal and psycho-social guidance

- Mentor/Advisor will be allocated to each group of students. Every week student group will meet to mentor/advisor for social, academic and career guidance. The Psycho-metric test are planned from 2013-14 and psycho counseling will also be provided. The services of advisors/counselors would be taken from July 2013.

B. Details of the process and the number of students who have benefitted.

- The result shall be taken in Dec, 2013.

2.3.11 A. Record of innovative teaching approaches/methods/practices adopted/put to use by the Faculty during the last four years?

- Three Stage Teaching by using multimedia teaching methods chalk-and- talk **method** and Field Visits in Industries/organizations/Renewable systems sites for practical knowledge on different real systems/processes in the field of Energy and Environment are adopted in addition to technical video assessment and discussion by students.
- Assignments, tutorials, Seminars and projects are also given to students

**File No. F3 2.3.11**

B. Write up of improvement in learning by innovative methods

Theory supplemented by practical approach was effective without stress on students during learning process. Students leaning enhanced continuously reflected in their results and communication skills improve a lot by seminars and judged during their presentations and discussions. Visual imaginary in the minds of students becomes much clear during the field visits on real systems and processes. Creative work done by students in projects and improvements are noticed during discussions and presentations. All innovative teaching practices indicate overall improvements in students and resulted in 100% placement in International and national organizations/Industries/consultants etc.

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

- Letter of appreciation by Vice-Chancellor
- Reflected in Feedback
- More recognition ways are being implemented in the University from 2013-14.

2.3.12 Record of actions for creating e a culture of instilling and nurture creativity and scientific temper among the learners

Projects and Systems development instill and nurture creativity and scientific temper.

File No. F3 2.3.12

2.3.13 A. Record of student projects (if mandatory in each of the learning programme)

File No. F3 2.3.12

B. Number of projects executed within the university

- M. Tech : 187 (2008-2013)
- M. Phil : 58 (2008-2013)

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

File No. F3 2.3.13C

D. Role of Faculty in facilitating such projects

- Identification of problems after discussion with students
- Motivation, Guidance and work with students
- Help in analysis and project writing
- Final checking of project reports
- Evaluation of the Project

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

- Vacant posts are being filled

B. Record of actions for shortfall supplementation

- Visiting Faculty, expert lectures and seminar and workshops supplement the shortfall.

2.3.15 Number of percentage of Faculty enabled to prepare computer-aided teaching/ learning materials

- 100% Faculty is enabled and use computer-aided teaching and prepare learning materials

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

Hosted at website www.iqac.dauniv.ac.in **File No. F3 2.3.16A**

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

**File No. F3 2.3.16B**

C. Methods used and Impact of the evaluation feedback used to improve the quality of the teaching-learning process

- Feedback form with ten impotent aspects of teaching and teacher is circulated to students at the end of each semester. Feedback data is analyzed in percentage on the by assigning the numbers to each activity.

- Departmental committee discuss all the issues related to teaching curriculum, question papers, examination procedure, evaluation methods and feedback percentage of individual teacher calculated from students feedback. The strength and weakness are communicated in the meeting to the concern teachers. A teacher is also guided by senior Faculty for improving teaching-learning process in next semester.The steps are taken also to improve the quality of the teaching-learning process

## 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

All teachers are engaged actively in research and development therefore remains in contact with front line research and changing scenario in the field of energy and environment. The changing requirements of curriculum are discussed in Departmental Meetings. The planning of next year is done by fixing responsibilities of different activities are to be carried out. A departmental calendar is prepared.

**File No. F3 2.4.1**

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 |
|---|---|---|---|---|
| SEES, 03 Faculties | | | 100% | |

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.)?

Dr S.P. Singh, Dr R.N. Singh and Dr Rubina Chaudhary are appointed in new programme in Energy and environment studies

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

- One faculty member joined in last four years.

2.4.5 List of academic recharge and rejuvenation of teachers

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

- The ample research grants are available for R & D from funding agencies.
- University provide some supports through UGC merged Scheme grant.

B. List of Faculty availed and on study leaves Nil

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

(a) Dr S.P. Singh

(b) Dr R. Singh

© Dr Rubina Chaudhary

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

NO

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 | |
| HRD programmes | |
| Orientation programmes | **01** |
| Staff training conducted by the university | |
| Staff training conducted by other institutions | |
| Summer / Winter schools, workshops, etc. | |

2.4.9 Percentage of the Faculty has

- been invited as resource persons in Workshops / Seminars / Conferences organized by external professional agencies = 100 %
- participated in external Workshops / Seminars / Conferences recognized by national/ international professional bodies = 100 %
- presented papers in Workshops / Seminars / Conferences conducted or recognized by professional agencies = 100 %
- teaching experience in other universities / national institutions and other institutions = 33 %
- industrial engagement = 100 %
- international experience in teaching = 33 %

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

Workshops have been organized in the University for enriching teaching learning processes and examination reforms.

(a) Quality Issues on Paper setting and Evaluation, Sept 26,2012
(b) Fostering Excellence in Research , Jan 15,2013
(c) Quality in Teaching Learning Processes, May 10,2013
(d) Choice Based Credit System, May 15,2013

2.4.11 A. List of Faculty encouraged

* Mobility of Faculty between universities for teaching

  Mobility of Faculty is encouraged for teaching in other institutes(other university) in India and abroad. Two Faculty Members gone for teaching in other universities.

* Faculty exchange programmes with national and international bodies

- Faculty exchange program with Kun- San University, Taiwan

B. Record of schemes helping in enriching the quality of the Faculty by such mobility and Faculty exchanges

- Faculty is invited to School for teaching the specific topics of Courses every year.
- One Faculty member taught 15 day to one month in Engineering Collage at Dehradun
- Faculty member was invited for Lecture series on Renewable Energy systems, by Kun Shan University, Tainan, Taiwan 2007(One Month)
- Faculty member was invited for Lecture series on Green Buildings, by Kun Shan University, Tainan, Taiwan 2008, (One Month)

**2.5 Evaluation Process and Reforms**

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

- Each semester results are declared in a fortnight.

**File No. F3 2.4.1**

B. Record of means adopted for the mode / media adopted for the publication of examination results (Website, SMS, email, etc.).

- Notice Board and printed Mark sheets
- e-mail communication to group ID is also used.

2.5.4A. Record of ensuring transparency in the evaluation process

- Examination Answer sheets are shown to students after the evaluation. The test answers are discussed.

B. Measures taken to ensure confidentiality

- Papers are sealed and kept in locker of examination In charge. Thes are opened 10 minutes before the commencement of examination.

C. Record of the Pre-examination processes – Examination Time table generation, student list generation, Invigilators, Attendance sheet,

- Records are maintained File No. F3 2.5.4C

D. Results of students course wise and its analysis

**File No. F3 2.5.4D**

**2.6. Student Performance and Learning Outcomes**

2.6.1 A. Write up of articulation of its Graduate Attributes of the department

- Graduates of the School have very good professional skills in energy and environment and social, ethical and environmentally conscious.

B. Record of facilitation of monitor the implementation and outcome

Outcomes are

(a) Good performance in departmental examination
(b) Good placement
(c) Proceeding for higher studies
(d) Work as Energy and Environment consultants.

A committee monitors the implementation and outcome

2.6.2 A. Record of learning outcomes for its academic programmes

- Project Reports/Assignments
- 95 % students got Placement in different Multinational organizations /industries/government organizations
- 5% students are going for higher studies

**File No. F3 26.2A**

B. Record of making students and staff are made aware of these

- Examination and discussion, acquisition of the skills and knowledge is judged.
- Website hosting of the outcomes make the students aware about it

2.6.3 Write up of department teaching, learning and assessment strategies structured to facilitate the achievement of the intended learning outcomes

Three Stage Teaching by using multimedia teaching methods, chalk-and- talk **method** and Field Visits in Industries/organizations/Renewable systems sites for practical knowledge on different real systems/processes in the field of Energy and Environment was adopted

Theories, Seminars, Field visits, DVDs, Projects were used to assess the learning progress of the student. Overall Knowledge was also assesses by external expert and teachers in comprehensive viva voce examination.

Final outcome assessed on the basis of regular minor, seminars, group discussion, assignments etc

2.6.4 Record of collection and analysis of data on student learning outcomes and use it to overcome the barriers to learning.

Individual student has interaction with teachers and all activities assessment during the semester and examination results.

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

ICT based techniques and practical lab experiments and work on field projects were designed and used by students to learn advance techniques. It enables to design development and evaluate the systems or processes for the industry or Institutions.

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

## CRITERION III: RESEARCH, CONSULTANCY AND EXTENSION

III.1 Year-wises Publications in the department:

| S. No | Year | No of Publications International | No of Publications National |
|---|---|---|---|
| 1 | 2007 | 06 | 05 |
| 2 | 2008 | 04 | |
| 3 | 2009 | 03 | 01 |
| 4 | 2010 | 04 | 04 |
| 5 | 2011 | 04 | |
| 6 | 2012 | 03 | 01 |
| | Total | 24 | 11 |

**List of Paper Publications in International and National Journals**

| *International Publication* | | *National Publication* | | *Grand Total* |
|---|---|---|---|---|
| Review | 9 | Review | 2 | |
| Papers | 15 | Papers | 9 | |
| **Total** | **24** | **Total** | **11** | **35** |

**RESEARCH PAPERS PUBLISHED IN INTERNATIONAL JOURNALS**

1. R.N.Singh, S.P. Singh, B.S. Pathak. Investigations on operation of CI engine using producer gas and rice bran oil in mixed fuel mode. Renewable Energy **(2007),** 32, 9, 1565-1580.
   **(H Index: 60; SJR: 1.56; Impact Factor: 2.978; 5 Year Impact Factor: 3.2; Citation: 12**)

2. R. N. Singh, S. P. Singh and B. S. Pathak. Extent of replacement of methyl ester of rice bran oil by producer gas in CI engine, Energy Research (2007), 31, 15, 1545–1555.
   **(H-Index**: **38; SJR: 0.92; Impact Factor: 2.122**)

3. Divya Khale and Rubina Chaudhary, Mechanism of Geo-polymerization and Factors Influencing its Development: A Review. Journal of Materials Science (2007) 42:729-746.
   **(H-Index**: **85 ; SJR: 0.84; Impact Factor: 2.015** )

4. Kavita Kabra, R. Chaudhary and R. L. Sawhney. Photo catalytic Reduction of Cr (VI) In Aqueous Titanium Suspensions Exposed to Concentrated Solar Radiation, International Journal of Sustainable Energy, December (2007) 26 (4), 195–207.
   **(H-Index**: **10; SJR: 0.26; Citation:1** )

5. Divya Khale and Rubina Chaudhary, Geopolymers Alternative Matrices for the Immobilization of Hazardous Waste-Leaching Characteristics and Environmental Compatibility, Journal of Solid Waste Technology and Management, August (2007), 33(3).
   (**H-Index**: **10; SJR: 0.16**)

6. Kavita Kabra, Rubina Chaudhary and R.L Sawhney. Effect of pH on Solar Photo catalytic Reduction and Deposition of Cu(II), Ni(II), Pb(II) And Zn(II) : Speciation Modeling and Reaction Kinetics, Journal Of Hazardous Materials (2007), 149 680- 685
   (**H-Index**: **97; SJR: 1.66; Impact Factor: 4.173; 5 Year Impact Factor: 4.553; Citation: 12)**

7. Kavita Kabra, Rubina Chaudhary and R.L Sawhney. Solar Photo catalytic Removal of Metal Ions from Industrial Wastewater, Environmental Progress and Sustainable Energy (2008) 27 (4) 487-495, DOI 10.1002.
   **(H-Index: 31; SJR: 0.61; Impact Factor: 1.649; Citation:6)**

8. Kavita Kabra, Rubina Chaudhary and R.L Sawhney. Solar Photo catalytic Removal of Cu (II), Ni(II), Zn(II) And Pb(II): Speciation Modeling of Metal-Citric Acid complexes, Journal of Hazardous Materials(2008), 155 (3), 424-432.
   (**H-Index**: **97; SJR: 1.66; Impact Factor: 4.173; 5 Year Impact Factor: 4.553; Citation:17)**
9. Shefali Shrivastava, Rubina Chaudhary, and Divya Khale. Influence Of pH, Curing Time and Environmental Stress on the Immobilization Of Hazardous Waste Using Activated Fly Ash, Journal of Hazardous Material(2008)153 (3). 1103-1109.
   (**H-Index**: **97; SJR: 1.66; Impact Factor: 4.173; 5 Year Impact Factor: 4.553)**

10. Smita Badur and Rubina Chaudhary. Utilization of Hazardous Wastes and By-Products as a Green Concrete Material through S/S Process: A Review. Review on Advance material Sciences, (2008)17, 42-61.
    (**H-Index**: **26; SJR: 0.4; Impact Factor: 0.915)**

11. S.P.Singh and Prerna Pandey. Review of recent advances in anaerobic packed-bed biogas reactors Renewable and Sustainable Energy Reviews, (2009), 13, 6-7, 1569-1575.
    **(H Index**: 67; **SJR: 2.45; Impact Factor: 6.018; 5 Year Impact Factor: 6.619: Citation: 22)**

12. K.S. Jairaj, S.P. Singh, K. Srikant A review of solar dryers developed for grape drying, Solar Energy (2009),83,9,1698-1712.
**(H Index**:**64; SJR:1.27; Impact Factor:2.475; 5 Year Impact Factor:2.902: Citation: 23**)

13. Kavitra Kabra, Rubina Chaudhary and R.L Sawhney. Application of Solar Photo catalytic Treatment to Industrial Wastewater from a Chrome Plating Unit, International Journal of Green Energy, (2009), 6, 83-91.
**(H Index**:**10; SJR:0.49; Impact Factor: 1.188; Citation: 6**)

14. S.P. Singh, Dipti Singh Biodiesel production through the use of different sources and characterization of oils and their esters as the substitute of diesel: A review, Renewable and Sustainable Energy Reviews (2010), 14, 1, 200-216.
**(H Index**: **67; SJR: 2.45; Impact Factor: 6.018; 5 Year Impact Factor: 6.619: Citation: 126)**

15. Dipti Singh, S.P. Singh. Low cost production of ester from non edible oil of Argemone Mexicana. Biomass and Bioenergy (2010), 34, 4, 545-549.
**(H Index**:**78; SJR: 1.53; Impact Factor: 3.646; 5 Year Impact Factor: 4.624: Citation:** 4)

16. Dipti Singh, S. P. Singh and Prerna Pandey. Production of both esters and biogas from Mexican poppy; African Journal of Environmental Science and Technology (2010), 4(12), 866-871.

17. Rajendra Singh Thakur[a], Rubina Chaudhary[*] Chandan Singh. Fundamentals and applications of the photo-catalytic treatment for the removal of industrial organic ollutants and effects of operational parameters: A review, J. Renewable Sustainable Energy (2010), **2**, 042701-37.
18. S. Tyagi, N.S. Rathore and S.P. Singh. Preparation and Performance Evaluation of Low Density Briquettes of Multi nutrient Feed for Biogas Plants, World Applied Sciences Journal (2011)15 (8):1190-1198. **(H Index**:1)

19. Singh, R N Straight Vegetable Oil: An alternative fuel for cooking, lighting and irrigation pump. **IIOABJ** (2011), **2** (**7**):44-49.

20. Shukti Tomar, Rana Pratap Singh and Rubina Chaudhary. Environmental monitoring of hazardous waste disposal Site – a case study, International Journal of Science and Nature (2011), 2(4), 837-843.

21. Chandan Singh[a], Rubina Chaudhary[b*] Rajendra Singh Thakur[c], Performance of advanced photocatalytic detoxification of municipal wastewater under solar radiation - A mini review, International Journal of Energy and Environment 2(2), (2011) 337-350.

22. S.P. Singh, K.S. Jairaj , K. Srikant. Universal drying rate constant of seedless grapes: A review, Renewable and Sustainable Energy Reviews (2012); 16 6295–6302.
**(H Index**: **67; SJR: 2.45; Impact Factor: 6.018; 5 Year Impact Factor: 6.619)**

23. Singh, R N and Sharma Shaishav Development of suitable Photo bioreactor for Algae production - A Review. Renewable & Sustainable Energy Reviews (2012).16 (1), 2347– 2353
**(H Index**: **67; SJR: 2.45; Impact Factor: 6.018; 5 Year Impact Factor: 6.619; Citation: 11)**

24. Rubina Chaudhary, Rajendra Singh Thakur, Photo catalytic Treatment of Industrial Wastewater Containing Chromium as a Model Pollutant-Effect on Process Parameters and Kinetically Studies, J. Renewable Sustainable Energy(2012), 4, 053121-19.

**RESEARCH PAPERS PUBLISHED IN NATIONAL JOURNALS**

1. S.P Singh, Surbhi Tyagi and N. S. Rathore. Performance Evaluation on C/N Balanced Optimal Mix Feeds for Biogas Production. Indian Journal of Environmental Protection (2007), 27, 3, 226-235.
(**H-Index**: **11; SJR: 0.15**)

2. S.P.Singh, Milly Rathore and Surbhi Tyagi. Feasibility Study of biogas production from flower waste, Indian Journal of Environmental Protection (2007), 27, 7, 597-603.
**(H-Index**: **11; SJR: 0.15)**

3. Singh R N, Singh, S P and Pathak, B S. Investigation on quality of exhaust gases as a result of partial and full replacement of blended methyl ester of Jatropha oil by producer gas. Journal of Solar Energy Society of India (SESI) (2007) 17 (1 & 2) 1-11.

4. R.N.Singh, S.P.Singh and B.S.Pathak. Performance of CI engine with progressive replacement of blended plant oil by producer gas, Journal of Agricultural Engineering (2007), 44(2).
(**H-Index**: **5; SJR: 0.11**)

5. Vishwabandhu and Rubina Chaudhary. Clean Development Mechanism: Strategy for Sustainability and Economic Growth, Indian Journal of Environmental Protection (2007). 27 (10) 919-922.
**(H-Index**: **11; SJR: 0.15)**

6. S.P.Singh, R. K. Singh and M. S. Sodha. Empirical Relation for orientation of optimum size solar efficient cold storage building, Journal of Solar Energy Society of India (SESI) (2009), 19(1, 2), 32-39.

7. Rachana Malviya and Rubina Chaudhary. Factors Affecting Fixation of Heavy Metals In Solidified/Stabilized Matrix: A Review, Journal of Environmental Science and Engineering NEERI (2010), 52 (3), 269-276.
   **(H-Index: 17; SJR: 0.13)**

8. Rajendra Singh Thakur[1], Rubina Chaudhary*, Kishore Malviya[2]. Performance evaluation of the common effluent treatment plant and treatability study for the optimization of chemical dosing, Environmental Science: An Indian Journal, ESAIJ (2010), 5(1), 102-106.

9. Rajendra Singh Thakur and Rubina Chaudhary*. Effect of the chemical dosing by treatability study for the removal of color, odor and chemical oxygen demand for the textile industry waste water, Environmental Science: An Indian Journal, ESAIJ(2010), 5(1), 96-101, ISSN : 0974 – 7451.

10. Smita Badur and Rubina Chaudhary, Effectiveness of S/S treatment process on the Leaching behaviour of multi-metal bearing hazardous waste, Environmental Science: An Indian Journal, ESAIJ (2010), 5, 1, 92-95. ISSN: 0974 – 7451.

11. Tripathi Satyendra, Singh R N, Soni D K, Jagan P and Chatuvedi Annop. Impact of Agricultural/ Biomass residues burning on Atmospheric Particulate Concentration and Human Health - A Review Our Earth. (2012). 9 (3) 8-14.

**Summary of International Publications**
**Papers Serial No as given above**

| S.No. | H-index | SJR | Impact Factor | Citation | 5 Year Impact Factor | SNIP |
|---|---|---|---|---|---|---|
| 1 | 60 | 1.56 | 2.978 | 12 | 3.2 | |
| 2 | 38 | 0.92 | 2.122 | - | - | |
| 3 | 85 | 0.84 | 2.015 | - | - | |
| 4 | 10 | 0.26 | - | 1 | - | |
| 5 | 10 | 0.16 | - | - | - | |
| 6 | 97 | 1.66 | 4.173 | 12 | 4.553 | |
| 7 | 31 | 0.61 | 1.649 | 6 | - | |
| 8 | 97 | 1.66 | 4.173 | 17 | 4.553 | |
| 9 | 97 | 1.66 | 4.173 | - | 4.553 | |
| 10 | 26 | 0.4 | 0.915 | - | - | |
| 11 | 67 | 2.45 | 6.018 | 22 | 6.619 | |
| 12 | 64 | 1.27 | 2.475 | 23 | 2.902 | |
| 13 | 10 | 0.49 | 1.188 | 6 | - | |
| 14 | 67 | 2.45 | 6.018 | 126 | 6.619 | |
| 15 | 78 | 1.53 | 3.646 | 4 | 4.624 | |
| 16 | - | - | - | - | - | |
| 17 | - | - | - | - | - | |
| 18 | 1 | - | - | - | - | |
| 19 | - | - | - | - | - | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 20 | - | - | - | - | - | |
| 21 | - | - | - | - | - | |
| 22 | 67 | 2.45 | 6.018 | - | 6.619 | |
| 23 | 67 | 2.45 | 6.018 | 11 | 6.619 | |
| 24 | - | - | - | - | - | |

**Summary of National Publications**

Papers Serial No as given above

| S.No. | H-index | SJR | Impact Factor | Citation | 5 Year Impact Factor | SNIP |
|---|---|---|---|---|---|---|
| 1 | 11 | 0.15 | - | - | - | |
| 2 | 11 | 0.15 | - | - | - | |
| 3 | - | - | - | - | - | |
| 4 | 5 | 0.11 | - | - | - | |
| 5 | 11 | 0.15 | - | - | | |
| 6 | - | - | - | - | - | |
| 7 | 17 | 0.13 | - | - | - | |
| 8 | - | - | - | - | - | |
| 9 | - | - | - | - | - | |
| 10 | - | - | - | - | - | |
| 11 | - | - | - | - | - | |

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

International Publications : 24

National Publications : 11

Monographs : 0

Chapters in Books : Two Chapters in IGNOU course Book

Edited Books : 0

Books with ISBN with details of publishers : 0

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

Citation Index – range / average : 1 - 126 / **22**

SNIP :

SJR : 0.4 - 2.45/ 1.34

Impact Factor – range / average : 0.915- 6.018/ **3.57**

H-index : 10-97/ **54**

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

**Areas of Consultancy**

A. **Solar City Master Plan /Energy Planning**
B. **Energy Audit And Conservation Reports**
C. **Decentralized Rural Energy Plan**
D. **Biomass And Bio-Energy**

**The following consultancy projects were completed from 2007-2012.**

| S.No | Name of Projects and Agencies | Income Generated in Lac of Rupees |
|---|---|---|
| | **SOLAR CITY MASTER PLAN /ENERGY PLANNING** | |
| 1 | Detailed Master Plan for Solar City Dewas, *submitted to Nagar Nigam, Dewas, 2011* | 2.5 |
| 2 | Detailed Master Plan for Solar City Indore, *submitted to Indore Municipal Corporation for Ministry of New and Renewable Energy Sources, Govt of India, New Delhi,2010* | 4.0 |
| 3 | Electrical Energy Scenario of Indore City of Year 2020, *submitted to TARU, Indore for Rockwell foundation, US;.2009* | 0.5 |
| 4 | DPR and monitoring for installation of 24000 lit/day water heating systems and 10 KWp power project with storage batteries for hostels and office building of Daily College ,*Submitted to Daily College for Ministry of New and Renewable Energy Sources, Govt of India, New Delhi,2011* | 0.25 |
| 5 | Detailed Project Report on Grid Connected 35 $KW_p$ Solar PV Power Plant for corporate office building for Ajmer Ajmer Vidyut Vitran Nigam Limited *Submitted to Ajmer Vidyut Vitran Nigam Limited, AJMER (Rajasthan) ,2011* | 0.35 |
| 6 | Third Party Verification work of Home Light and Street Light Systems installed by the M.P. Urja Vikas Nigam under the Remote Village Electrification Scheme of the MNRE of 80 villages, *Report has been submitted to the M.P. Urja Vikas Nigam, Bhopal ,M.P 2011* | 5.32 |
| 7 | Impact Assessment Study has been carried out of LED Village Campaign for Jait Village under the LED Village Scheme Launched by the Bureau of Energy Efficiency Village Jait, Taluka Budhni, and District Sihore (Madhya Pradesh) Project Implemented, *submitted to* | Actual expenditure |

| | | |
|---|---|---|
| | *Madhya Pradesh Urja Vikas Nigam Ltd., Bhopal, M.P 2011* | |
| **ENERGY AUDIT AND CONSERVATION REPORTS** | | |
| 1 | Detailed Energy Audit Reports of **54 Hotels** Madhya Pradesh State Tourism Development Corporation Ltd. Bhopal, *submitted to M.P.CDM Agency, Bhopal, M.P, 2011* | 13.5 |
| 2 | Detailed Project Report on Development of Energy Efficient Lighting Network at Kheda Growth Centre, Pithampur, M.P. *submitted to the M.P. Udyogik Vikas Nigam, Indore, M.P, 2011* | 3.5 |
| 3 | Detailed Energy Audit of Collect orate Building, Indore *submitted to MPUVN, Bhopal, M.P, 2011* | 0.25 |
| 4 | Detailed Energy Audit Of 132 KV/25 KV TSS, Gurla, *,submitted to The The SDEE Traction Distribution KOTA ,Rajasthan, 2010* | 0.45 |
| 5 | Detailed Energy Audit of Raj Bhavan Buildings, Governor House Complex, Bhopal, *Submitted to Madhya Pradesh Urja Vikas Nigam, Bhopal, M.P,2010* | 3.25 |
| 6 | Detailed Energy Audit of Vallabh Bhavan Buildings, M.P. Govt. Secretariat Building, Bhopal, *Submitted to Madhya Pradesh Urja Vikas Nigam, Bhopal, M.P,2010* | |
| 7 | Detailed Energy Audit of Office Building of MPUVN, Bhopal, *Submitted to Madhya Pradesh Urja Vikas Nigam, Bhopal,M.P,2010* | |
| 8 | Detailed Energy Audit of Zenith Birla (India) Limited, Khopoli, Raigad, Maharashtra, *Submitted to M /S Zenith Birla (India) Limited, Khopoli, Dist: Raigad, Maharashtra,2009* | 1.0 |
| 9 | Preparation of list of Designated Consumers and Their Consumption in the state of M.P as per Energy Conservation Act 2001; Project of Bureau of Energy Efficiency(BEE), New Delhi, *Report Submitted to M.P. Urja Vikas Nigam Ltd., Bhopal,2008.* | 2.25 |
| 10 | Preparation of list of Certified Energy Managers/Auditors, Accredited in the State of M.P as per the provisions of Energy Conservation Act 2001; Project of Bureau of Energy Efficiency(BEE), New Delhi, *Report Submitted to M.P. Urja Vikas Nigam Ltd., Bhopal,2008.* | 1.4 |
| 11 | Detailed Energy Audit of BSF's Central School of Weapons and Tactics and BSF campus, Submitted to DG BSF, Indore,M.P, 2007 | 0.25 |
| 12 | Detailed Energy Audit of Satguru Cement, *Submitted to Satguru Cement, District Dhar, M.P,2007* | 0.50 |
| **BIOMASS AND BIO-ENERGY** | | |
| 1 | Physical Verification / Survey report of Family Size biogas plants in 3 district of Madhya Pradesh, constructed in the year; *Submitted to M.P. Agro Ltd., Bhopal,2012* | 1.68 |
| 2 | Physical Verification / Survey report of Family Size biogas plants in 4 district of Madhya Pradesh, constructed in the year; *Submitted to M.P. Agro Ltd., Bhopal,2013* | 1.68 |

**Total amount = Rs 42.63 Lacs**

III.5 List and Record of Faculty selected nationally/internationally to visit other laboratories in India and abroad

**Dr S.P.Singh**

**National**

- In North Maharashtra University, Jalgaon-2012
- In Jawaharlal University (JNU), Delhi-2011
- In BHU, Varanasi,8-9 Oct,2011
- In Indian Institute of Technology (IIT), Delhi-2010

**International**

- Kun Shan University, Tainan, Taiwan 2007(One Month)
- Kun Shan University, Tainan, Taiwan 2008, (One Month)

**III.6 List and Record of Faculty serving in**

**National committees**

a) National Expert for Solar City Development, Panel of Experts, Ministry of New and Renewable Energy, Govt. of India, New Delhi.

b) Member of R& D Committee (RDSPAC), MNRE, Govt. of India

c) Member of Sub-Group under the working Group on New and Renewable Energy (NRE) for "Cooking Energy from Renewable" for the Twelfth Five Year Plan (2012-17). The first meeting to be held on 2nd June, 2011

d) Member ,Non Conventional Energy Sources Sectional Committee MED-04 and Solar Thermal Energy Sub Committee ME04:1**; Bureau of Indian Standard,** New Delhi

e) Member Governing Body of JAYPEE University of Engineering & Technology Nominated by His Excellency the Governor of M.P

f) Member of MPCST Governing Body, Govt. of M.P

g) Member, Board of Post Graduate Studies of Dep't of Environmental Sciences, ,B.B.A University, Lucknow

h) UGC Expert for UGC-SAP, SEES, North Maharashtra University, Jalgaon.

i) Member, Constitution of state level registration committee for re-cycler /re-processors under hazardous waste (M.H. & TM) rules 2008 for the duration of three years (M.P. Pollution Control Board, M.P.)

j) Life Member of Indian Water Works Association.

k) Member, CEPRD, Indore.

l) Reviewer of Journal of Hazardous Materials, ISSN: 0304-3894, imprint: ELSEVIER,U.K

**m)** Member of Board of School Of Energy and Environmental Studies.

b) International committees

**Nil**

c) Editorial Boards d) any other (please specify)

**Nil**

III.7 Research thrust area recognized by funding agencies for the department

- ✓ Solar Thermal Systems
- ✓ Biomass Conversion Technologies
- ✓ Green Buildings/ Solar Passive Buildings
- ✓ Evaporative Air Conditioning
- ✓ Decentralized Energy Planning for Rural Development
- ✓ Energy and Environmental Management
- ✓ Hazardous Waste Management:
- ✓ Solidification / Stabilization Process,
- ✓ Solar Detoxification Process,
- ✓ Environmental Impact Assessment and Environmental Audit
- ✓ Water and Wastewater Treatment Technologies.

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.

**Faculty: 02**

| **S. No** | **Project Name** | **Year** | **Amount Sanctioned (Lac Rs.)** | **Sponsored Agency** |
|---|---|---|---|---|
| 1 | Biogas Development Training Centre, Indore Under National Biogas Manure Management Programme | **2011--2012** | 14.44 | Ministry of New and Renewable Energy Sources, Govt. of India, New Delhi |
| 2 | Regional Test center cum Technical Back up unit for Solar Thermal Devices | **2011-2012** | 18.6 | Ministry of New and Renewable Energy Sources, Govt. of India, New Delhi |
| 3 | Holistic approach to utilize algae For fuel production | **2011-2013** | 7.912 | University Grant Commission, Govt. of India, New Delhi |
| 4 | Design and Development of Horizontal Gasifier for Biomass materials | **2011-14** | 25.4 | DST, New Delhi |
| 5. | Water Conservation Studies on Old Monuments and Forts of M.P | **2012-1014** | 4.68 | MPCST, Bhopal |

III.9 List and details of Inter-institutional collaborative projects and grants received

**Nil**

All India collaboration b) International

**N.A**

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

**Nil**

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

- state recognition
  - Improved Biomass Cook stove testing Laboratory
  - Gasifier Testing for MPUVN
- national recognition
- Bureau of Indian Standard (BIS) approved Laboratory for Testing of Solar Thermal Devices
- Ministry of New and Renewable Energy(MNRE) Approved Laboratory
- international recognition
- National Accreditation Board for testing and Calibration Laboratories (NABL),DST, New Delhi
  - **Ist Accredited Laboratory for Testing of Solar Thermal Devices – Solar Flat Plate Collector and Solar Cooker in India**
  - **Biomass and Biofuel Conversion Laboratory**

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 Rakesh Sexana, External Expert
   Professor, Deptt. of Electrical Engineering, SGSITS, Indore
2. Dr Abay Kumar, Dean
   Faculty of Engineering Sciences, DAVV, Indore
3. Dr S.P.Singh. Professor and Head
   SEES, DAVV, Indore
4. DR R. N. Singh, Professor
   SEES, DAVV, Indore

**Minutes of DRC Meeting File No. F4 III.12. 3.1.1A**

B. Records of DRC regarding monitoring and addressing issues related to research

**F4 III.12. 3.1.1A**

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

**F4 III.12. 3.1.1A**

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

No Research center is affiliated of colleges.

3.1.3 Details of the

* advanced funds for the sanctioned projects

As per sanctioned amount given by Agencies

* providing seed money

N.A

* Simplification of procedures related to sanctions / purchases to be made by the investigators

N.A

* Autonomy to the principal investigator/coordinator for utilizing overhead charges

60% of total overhead charges may be spend by PI

* Timely release of grants

Yes

* Timely auditing

Yes

* Submitted utilization certificates to the funding authorities

Yes

3.1.4 Record of interdisciplinary research promoted

* with other departments /schools of the university and
* collaboration with national/international institutes/industries

**To be started**

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

1. Organizing Committee, **Chair**, India International Energy Summit (IIES), Nagpur 28th - 30th January 2011

2. General Secretary, **2nd Bharatiya Vigyan Sammelan** on **Green Technologies for Sustainable Development, ,1-3 December,2009**

3. Coordinator and Organized of work shop of "Building Energy simulation", USAID-ECO-III Project, in school of Energy and Environmental studies on 13 June, 2008.

4. 3-Days Training Course on Energy Efficient Building Systems, January 18-20, 2007 at Indore, Sponsored by MNRE, New Delhi.

5. "Solar Technology Application for Women Polytechnic Students" on 18-03-2008

6. "Standard Test Procedure of Domestic Solar water heating system" on 16-05-2008
7. "Use of Solar Thermal System in Institutional and Commercial Sectors" on 13-03-2010.

8. 3-Days Training Course on Energy Efficient Building Systems, January 18-20, 2007 at Indore, Sponsored by MNRE, New Delhi.

9. Refresher Course on Environmental Education, Sponsored by UGC, Govt. of India. Jan 10- Feb 01, 2007.

10. Refresher Course on Environmental Education, Sponsored by UGC, Govt. of India. Jan 14- Feb 03, 2008.

11. Carbon Credits in Industries ,Seminar for industrialists ,students, Academics, Jointly Organized by NIFE and CESR, , Sponsored by M/s Shakti pumps, Pithampur (M.P.) Dec.2007

12. Coordinator and Organized of work shop of "Building Energy Simulation" USAID-ECO-III Project, in school of Energy and Environmental studies on 13 June, 2008.

13. Refresher Course on Environmental Education, Sponsored by UGC, Govt. of India. Jan. 14-Feb. 03, 2009

14. Organized National Environment Awareness Campaign (2009-2010) on Climate Change in SEES, Devi Ahilya University, Indore, M.P. (as Coordinator), funded by EPCO, Bhopal and sponsored by MoEF. 2009:

15. 2nd Bhartiaya Vigyan Sammelan and Expo, Devi Ahilya University, Indore, 1-3 December 2009

16. First and Second National Conference for Shanti Swarup Bhatnagar Awardees 8th - 10$^{th}$ March, 2007 and July 17-19,2009 DAVV. Indore.

17. Role of NGO'S in Implementation of Environmental Laws M.P. Pollution Control Board Indore 30$^{th}$ March. 2007:

18. Workshop Testing Method of Solar Water Heating System at School of Energy Environmental Studies DAVV. Indore. 21-23 March (2007)

19. Energy Efficiency Building System 10$^{th}$ –12$^{th}$ January at School of Energy Environmental Studies DAVV. Indore. 2007:

20. Refresher Course on Environmental Education, sponsored by UGC, Govt. of India. Jan 14- Feb 03, 2009

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

Planned in 2013-14

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

Impact will be known in Dec 2013.

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

N.A

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

N.A

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

**Nil**

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

Ph. D Scholarships provided by following Agencies

| Year | Name of student | SC/ST scholarship | Other scholarship | Agency |
|---|---|---|---|---|
| **2007** | Rajandra Singh Thakur **(ST)** | Rajeev Gandhi national fellowship | - | UGC, New Delhi |
| **2008** | - | - | - | - |
| **2009** | - | - | - | - |
| **2010** | Parana Panday (GEN) | - | NRE fellowship | NREF, New Delhi |
| **2011** | Chandan Singh **(SC)** | - | NRE fellowship | NREF, New Delhi |
| | Shukti Tomar (GEN) | - | NRE fellowship | NREF, New Delhi |
| **2012** | Shaishav Sharma (GEN) | - | MP Biotechnology Council fellowship | M.P. Govt. |

**Total number of students receiving Scholarship = 05**

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

**N.A**

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

**Photographs of national and International conferences F4 III.12. 3.1.11A**

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

Names of eminent scientists/scholars who participated in these events

**F4 III.12. 3.1.11B**

**3.2 Resource Mobilization for Research**

3.2.1 Record of Financial provisions made in the university budget for supporting students' research projects

**N.A**

3.2.2 A. Record of special efforts to encourage its faculty to file for patents

**N.A**

B. List of registered and accepted patents.

**N.A**

3.2.3 Details of ongoing research projects of faculty:

| | **Year wise** | **No.r** | **Name of the project** | **Name of the funding agency** | **Total grant received** |
|---|---|---|---|---|---|
| A. University awarded projects | | | | | |
| Minor projects | Nil | Nil | Nil | Nil | Nil |
| Major projects | Nil | Nil | Nil | Nil | Nil |
| B. Other agencies - national and international (specify) | | | | | |
| Minor projects | 2012-2014 | 1 | Water Conservation Studies on Old Monuments and Forts of M.P | MPCST, Bhopal | 4..86 |

| | | | | | |
|---|---|---|---|---|---|
| Major projects | 2011-2012 | 3 | Regional Test center cum Technical Back up unit for Solar Thermal Devices | Ministry of New and Renewable Energy Sources, Govt. of India, New Delhi | 18.6 |
| | 2011-14 | | Design and Development of Horizontal Gasifier for Biomass Materials | DST, New Delhi | 25. 4 |
| | 2011-2013 | | Holistic approach to utilize algae for fuel production | University Grant Commission, Govt. of India, New Delhi | 7.912 |

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.

N.A

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

Last Five year plan (2002-07) DST-FIST project was executed.

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

Modernization of Laboratories and Five students used for research published in International Journal.

3.2.6 List details of

a. Research projects completed and grants received (funded by National/International agencies).

| **S. N** | **Project Name** | **Year** | **Amt Sanctined (Lac Rs.)** | **Sponsored Agency** |
|---|---|---|---|---|
| 1 | Biogas Development Training Centre, Indore UnderNational Biogas Manure Management Programme | 2007-2008 | 12 | Ministry of New and Renewable Energy Sources, Govt. of India, New Delhi |
| 2 | Biogas Development Training Centre, Indore Under National Biogas Manure Management | 2008-2009 | 12 | Ministry of New and Renewable Energy Sources, Govt. of |

| | | | | |
|---|---|---|---|---|
| | Programme | | | India, New Delhi |
| 3 | Biogas Development Training Centre, Indore Under National Biogas Manure Management Programme | 2009-2010 | 12 | Ministry of New and Renewable Energy Sources, Govt. of India, New Delhi |
| 4 | Biogas Development Training Centre, Indore Under National Biogas Manure Management Programme | 2010-2011 | 14.44 | Ministry of New and Renewable Energy Sources, Govt. of India, New Delhi |
| 5 | Regional Test center cum Technical Back up unit for Solar thermal Devices | 2009-2010 | 8.50 | Ministry of New and Renewable Energy Sources, Govt. of India, New Delhi |
| 6 | Regional Test Center cum Technical Back Up Unit For Solar Thermal Devices | 2010-2011 | 18.60 | Ministry of New and Renewable Energy Sources, Govt. of India, New Delhi |
| 7 | Biogas Development Training Centre, Indore Under National Biogas Manure Management Programme | 2011--2012 | 14.44 | Ministry of New and Renewable Energy Sources, Govt. of India, New Delhi |
| 8 | Regional Test center cum Technical Back up unit for Solar thermal Devices | 2011-2012 | 18.6 | Ministry of New and Renewable Energy Sources, Govt. of India, New Delhi |

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

**3.3 Research Facilities**

3.3.1 A. Infrastructure in the department to facilitate research

- ✓ Biomass conversion Laboratory
- ✓ Solar and PV Laboratory
- ✓ Heat and Mass Transfer Laboratory
- ✓ Waste management Laboratory
- ✓ Environmental Laboratory
- ✓ Computer Laboratory
- ✓ Internet facility with large number of e-Journals availability

**Photographs F4 III.12. 3.3.11A**

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

Infrastructure, laboratories, research papers and guidance with scheduling of time was planned for researchers.

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

Internet connectivity (one GBPS) for departmental computers, e journals, equipments are needed mainly and provide to the researchers.

B. Details of the facility.

- 20 computers for research students with internet connectivity
- 91 International and national research Journals are available on Energy and Environment.
- 4439 books and 85 book volume in Departmental library in addition to Central library are available along with e-resources.

3.3.3 Record of University Science Instrumentation Centre (USIC) facilities been made available to research scholars

**Yes**

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)

Wi-Fi and Internet is available in Guest House as well as in hostels.
One GBPS internet connectivity is available in the departmental computers. Computers are provided to each research student

3.3.5 Details of Uses of the Facilities of IUC, CAT, NRCS, IIT Indore and other specialized Research Centers for research

IUC facilities available in campus and are used by students

**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.

**No**

3.4.2 Details of publications by the faculty:

- Number of papers published in peer reviewed journals (national / international) : 35
- Monographs :0
- Chapters in Books :02
- Books edited :0
- Books with ISBN with details of publishers :0
- Number listed in International Database (For *e.g*. Web of Science, Scopus,

Humanities International Complete, EBSCO host, etc.) :35

* Citation Index – range / average : 1 - 126 / **22**
* SNIP :
* SJR : 0.4 - 2.45/ 1.34
* Impact Factor – range / average :0.915-6.018/ **3.57**
* H-index : 10-97/ **54**

**File No. F4 III.1**

3.4.3 Details of

* faculty serving on the editorial boards of national and international journals Reviewer, Journal of Hazardous Materials
* faculty serving as members of steering committees of international conferences recognized by reputed organizations / societies

- Organizing Committee, **Chair**, India International Energy Summit (IIES), Nagpur 28th - 30th January 2011
- General Secretary, 2nd Bharatiya Vigyan Sammelan **on** Green Technologies for Sustainable Development, ,1-3 December,2009

3.4.4 Details of

* research awards received by the faculty and students
  - Best Paper Award for one student, **2nd** Bharatiya Vigyan Sammelan (BVS)-2009
* national and international recognition received by the faculty from reputed professional bodies and agencies

➢ Key Note Speaker in International Conference on Green Buildings'; June, 2008, Tainan, Taiwan.

3.4.5 A. Number of successful M. Phil. and Ph.D. scholars guided per faculty during the last four years

**M. Phil, M. Tech and Ph. D students**

| S.No | Name of Supervisor/Guide | Year | No. of M. Phil Students | No. of M. Tech Students | No. of Ph. D Students |
|---|---|---|---|---|---|
| 1 | Dr S.P. Singh | 2008 | 02 | 05 | 01 |
| | | 2009 | 03 | 05 | 01 |
| | | 2010 | 01 | 04 | 01 |
| | | 2011 | 03 | 06 | 01 |
| | | 2012 | 02 | 05 | 02 |
| 2 | DR R.N. Singh | 2008 | - | - | - |
| | | 2009 | - | - | - |
| | | 2010 | - | 03 | - |

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|---|---|---|---|---|---|
| | | 2011 | 01 | 04 | - |
| | | 2012 | 01 | 06 | - |
| 3 | Dr Rubina Chaudhary | 2008 | 07 | 02 | 01 |
| | | 2009 | 06 | 03 | - |
| | | 2010 | 04 | 04 | - |
| | | 2011 | 05 | 03 | - |
| | | 2012 | 03 | 04 | 02 |
| 4. | Dr R. L. Sawhney | 2008 | 02 | 08 | - |
| | | 2009 | 01 | 04 | - |
| | | 2010 | - | - | 01 |
| | | 2011 | - | - | - |
| | | 2012 | - | - | - |
| 5. | Dr D. Buddhi | 2010 | | | 01 |

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

Yes, Central Library provide this facility.

3.4.6 A. Record of Promotion e interdisciplinary research

N.A

B. Number of interdepartmental / interdisciplinary research projects undertaken

N.A

C. Mention the number of departments involved in such endeavors

N.A

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

Planned from 2013-14

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

- 75% contribution from university for Journals subscription for Assistant Professors
- 50 % contribution from university for Journals subscription for associate Professors
- 25 % contribution from university for Journals subscription for Professors
- Grant provide for paper presentation in conferences/workshop tec.

### 3.5 Consultancy

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

| S.No | Name of Projects and Agencies |
|---|---|
| | **SOLAR CITY MASTER PLAN /ENERGY PLANNING** |
| 1 | Detailed Master Plan for Solar City Dewas, *submitted to Nagar Nigam, Dewas, 2011* |
| 2 | Detailed Master Plan for Solar City Indore, *submitted to Indore Municipal Corporation for Ministry of New and Renewable Energy Sources, Govt of India, New Delhi,2010* |
| 3 | Electrical Energy Scenario of Indore City of Year 2020, *submitted to TARU, Indore for Rockwell foundation, US;.2009* |
| 4 | DPR and monitoring for installation of 24000 lit/day water heating systems and 10 KWp power project with storage batteries for hostels and office building of Daily College ,*Submitted to Daily College for Ministry of New and Renewable Energy Sources, Govt of India, New Delhi,2011* |
| 5 | Detailed Project Report on Grid Connected 35 $KW_p$ Solar PV Power Plant for corporate office building for Ajmer Ajmer Vidyut Vitran Nigam Limited *Submitted to Ajmer Vidyut Vitran Nigam Limited, AJMER (Rajasthan) ,2011* |
| 6 | Third Party Verification work of Home Light and Street Light Systems installed by the M.P. Urja Vikas Nigam under the Remote Village Electrification Scheme of the MNRE of 80 villages, *Report has been submitted to the M.P. Urja Vikas Nigam, Bhopal ,M.P 2011* |
| 7 | Impact Assessment Study has been carried out of LED Village Campaign for Jait Village under the LED Village Scheme Launched by the Bureau of Energy Efficiency Village Jait, Taluka Budhni, and District Sihore (Madhya Pradesh) Project Implemented, *submitted to Madhya Pradesh Urja Vikas Nigam Ltd., Bhopal, M.P 2011* |
| | **ENERGY AUDIT AND CONSERVATION REPORTS** |
| 1 | Detailed Energy Audit Reports of **54 Hotels** Madhya Pradesh State Tourism Development Corporation Ltd. Bhopal, *submitted to M.P.CDM Agency, Bhopal, M.P, 2011* |
| 2 | Detailed Project Report on Development of Energy Efficient Lighting Network at Kheda Growth Centre, Pithampur, M.P. *submitted to the M.P. Udyogik Vikas Nigam, Indore, M.P, 2011* |
| 3 | Detailed Energy Audit of Collect orate Building, Indore *submitted to MPUVN, Bhopal, M.P, 2011* |
| 4 | Detailed Energy Audit Of 132 KV/25 KV TSS, Gurla, ,*submitted to The The SDEE* |

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|---|---|
| | *Traction Distribution KOTA ,Rajasthan, 2010* |
| 5 | Detailed Energy Audit of Raj Bhavan Buildings, Governor House Complex, Bhopal, *Submitted to Madhya Pradesh Urja Vikas Nigam, Bhopal, M.P,2010* |
| 6 | Detailed Energy Audit of Vallabh Bhavan Buildings, M.P. Govt. Secretariat Building, Bhopal, *Submitted to Madhya Pradesh Urja Vikas Nigam, Bhopal, M.P,2010* |
| 7 | Detailed Energy Audit of Office Building of MPUVN, Bhopal, *Submitted to Madhya Pradesh Urja Vikas Nigam, Bhopal,M.P,2010* |
| 8 | Detailed Energy Audit of Zenith Birla (India) Limited, Khopoli, Raigad, Maharashtra, *Submitted to M /S Zenith Birla (India) Limited, Khopoli, Dist: Raigad, Maharashtra,2009* |
| 9 | Preparation of list of Designated Consumers and Their Consumption in the state of M.P as per Energy Conservation Act 2001; Project of Bureau of Energy Efficiency(BEE), New Delhi, *Report Submitted to M.P. Urja Vikas Nigam Ltd., Bhopal,2008.* |
| 10 | Preparation of list of Certified Energy Managers/Auditors, Accredited in the State of M.P as per the provisions of Energy Conservation Act 2001; Project of Bureau of Energy Efficiency(BEE), New Delhi, *Report Submitted to M.P. Urja Vikas Nigam Ltd., Bhopal,2008.* |
| 11 | Detailed Energy Audit of BSF's Central School of Weapons and Tactics and BSF campus, Submitted to DG BSF, Indore,M.P, 2007 |
| 12 | Detailed Energy Audit of Satguru Cement, *Submitted to Satguru Cement, District Dhar, M.P,2007* |
| **BIOMASS AND BIO-ENERGY** | |
| 1 | Physical Verification / Survey report of Family Size biogas plants in 3 district of Madhya Pradesh, constructed in the year; *Submitted to M.P. Agro Ltd., Bhopal,2012* |
| 2 | Physical Verification / Survey report of Family Size biogas plants in 4 district of Madhya Pradesh, constructed in the year; *Submitted to M.P. Agro Ltd., Bhopal,2013* |

3.5.2A. Department participation in university-industry cell

National Institute Industry Forum for Energy (NIFE) founder of this forum and formed by School with Industries.

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

On schools initiative "National Institute - Industry Forum for Energy" was established in 1995. Industries from in and around Indore (Pithampur, Dewas, Dhar and Ghata Billod) and faculty from School and Engineering colleges are the members of the forum. Through the forum, school staff and students are in direct contact with the industries for their energy and environment related problems. Technical experts from

the industry are invited to School for lectures, selection and examination of the students, while school's expertise and laboratory facilities are made available to the member industries. Forum regularly organizes training programmes, seminars, workshops, business meets etc. for the industry on energy and environment topics/issues.

**Dr S.P. Singh is presently General Secretary of the forum**

3.5.3 Record of publicizing the expertise of the department for consultancy services

University Internet and meetings

## 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

Faculty and Student's participation in energy and environmental issues of the institution/University and their concern in social responsibilities are ensured.

- ✓ Coordinator, task Group of Energy and Environment
- ✓ Energy Audit of all Departments for energy Efficiency.
- ✓ Preparation and Release of Green Calendar for annual energy and environmental International and national events

**File No. F4 III.12 3.6.1A**

- ✓ **Preparation of Green Policy for University**
- ✓ **Gardens development in University**

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

Social Outreach Programmes **File No. F4 III.12 3.6.1B**

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

Students are encouraged to take local, regional and global problems to understand and think about the practical solutions for the society, this leads to an overall

development of the students.

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

**Photo's and description of work carried out during extension activities. File No. F4 III.12 3.6.3**

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

**File No. F4 III.12 3.6.3**

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

- To understand the real ground level problems and to analyze these problems in urban and rural areas
- Behavioral skills for group tasks
- To analysis for better project implementation, the incorporation of Social and economic activities in the projects.
- Ethics and respect for all cultures and Sects of society.

3.6.7 Department community in its outreach activities

Department is engaged in number of outreach activities like training, of design, installation, maintenance and awareness on Biomass conversion technologies, Manure management ,solar thermal and PV technologies etc. in addition to plantation, garden development for Green Environment.

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

Not applied for any award

## 3.7 Collaboration

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

No

B. Record of benefits academically and financially because of collaborations

No

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)

**File No. F4 III.12 3.7.2**

M. Phil Internship 2007-2012

| S. No | Title | Student Name | year | Company Of Internship |
|---|---|---|---|---|
| 1 | Review of aspect Impact Analysis or Kirloskar Brother Limited | Versha Kanoongo | 2007 | Kirloskar Brothers Limited Dewas |
| 2 | Studies on potential applications of Ceno-spheres ; A Waste Product Generated from Coal ash as Filler In Electrical Insulating Materials | Chanchal Chauchan | 2007 | Electrical Research & Development Association Vadodara |
| 3 | Energy Potential in MSW taking RDF as an example | Ruchika Sharma | 2007 | Hydroair Tectonics (Pvt) Ltd Navi Mumbai |
| 4 | Bio- methanation of Mixed (Veg-Non_Veg) waste ( Panaji City) | Kalpana Singh | 2007 | ECOSAVE Systems Pvt. Ltd Mumbai |
| 5 | Performance Evaluation of 100 kW gasifies at chanderpur works | Pankaj Aggarwal | 2007 | Chanderpur Works Yamuna Nagger |
| 6 | Exploratory study on E- waste in National capital | Sonia Duhan | 2007 | GTZ, Asem Indo German Environment Program. New Delhi |

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| 7 | Design of 30 MGD sewage Treatment plant performance evaluation of STP at Okhla | Himani Rastogi | 2007 | MWh India Pvt. Ltd New Delhi |
| 8 | Municipal solid waste management composting and design of Sanitary Landfill | Kavita Sreeram | 2007 | Ramky Enviro Engineering Ltd ., Hyderabad |
| 9 | Development of strategies for the inclusion of triple bottom line Principle into Corporate Governance | Vishwa Bandhu Bhattacharya | 2007 | Confederation Of Indian Industry Eastern Region |
| 10 | Waste Heat recovery based CDM Project of kundil power supply Company Ltd. ,Begaum: A Case study at Emergent Ventures India Pvt Ltd | Rakesh Ranjan Tiwari | 2008 | Emergent Ventures India Gurgaon Haryana |
| 11 | Environmental Monitoring Analysis and stabilization studies for the abatement of organic Content & Ammonia in Hazardous Waste | Mandira Saha | 2008 | Ramky Enviro Engineering Ltd Mohali (Punjab) |
| 12 | Methane recovery from waste water of Santosh maize and industry Ltd Tamil Nadu: A Clean Development Mechanism Project Design Document | Harish Verma | 2008 | See Solutions Pvt Ltd. Nagpur |
| 13 | Rapid environment impact assessment for Textile park of Pali, Rajasthan | Shubha Chauchan | 2008 | Ramky Enviro Engineers Ltd New Delhi |
| 14 | Demonstration of waste Minimization in Basic Chrome sulphate at Kanpur | Shashank Mishra | 2008 | Ramky Enviro Engineers Ltd New Delhi |
| 15 | Environment Impact Assessment of Dairy Farm waste Management in Delhi | Pooja Tyagi | 2008 | MSV International Inc Gurgaon Haryana |
| 16 | Generation of energy in an anaerobes treatment of effluent from Molasses based Distillery Industry | Chandan Singh | 2008 | En- Vision Enviro Engineers Pvt Ltd Surratt |
| 17 | Design of 12 MGS sewage Treatment Plant Keshopur, New | Ramanuj | 2008 | India Private Limited Project Office New |

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| | Delhi | Verma | | Delhi |
| 18 | Preparation of detailed Project report under IIUS scheme at Chhindwara, M.P | Shubhi Vashishta | 2008 | Ramky Enviro Engineers Ltd New Delhi |
| 19 | Colour odour and COD removal by chemical dosing Textile Industry & En-Vision Enviro Engineers Pvt Ltd (Surat) | Pooja Singh | 2008 | En- Vision Enviro Engineers Pvt Ltd Surat |
| 20 | Construction of new module of 54.6 MLD (12 MGD) capacity STP & Rehabilitation of two existing Modules of 91.2 MLD(20MGD) & 182.4 MLD (40MGD) Capacities Sew | Astuti Jaiswal | 2008 | M/S Tokyo Engg .Consultants Co. Ltd New Delhi |
| 21 | Methane Emission from Various Landfill Sites of Delhi in Summer | Shukiti Tomar | 2009 | National Physical Laboratory New Delhi |
| 22 | Physico Chemical Treatment of Law Calorific Value Incinerable Hazardous waste for odour & Toxicity Reduction At GEPIL Surat | Satyendra Tripathi | 2009 | Gujarat Enviro Protection & Infrastructure Ltd Surat Gujarat |
| 23 | Study of Common Hazardous Waste Management Facility Ground water Analysis & Evaluation of Secure Landfill Cell At GEPIL Surat | Prem Prakash | 2009 | Gujarat Enviro Protection & Infrastructure Ltd Surat Gujarat |
| 24 | Analysis of Process Performance & Energy Consumption at 62.5 MLD Sewage Treatment Plant ,Delawas, Jaipur | Payal Pancholi | 2009 | Malaviya National Institute Of Technology Jaipur |
| 25 | Assessment for Energy Potential from the Municipal Solid Waste of Kanpur City | Preeti Galne | 2009 | ECOSAVE Systems Pvt. Ltd Mumbai |
| 26 | Waste Water Characterization of Amritsar city & Design of 120 MLD STP Based on Activated Sludge Process | Avdesh Bhardawaj | 2009 | M/S Tokyo Engg .Consultants Amritsar Punjab |

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| 27 | E.I.A. study of upcoming Project of 200 TPD of Cement Manufacturing Unit of Shivshakti Cement Assam | Rajesh Kumar | 2009 | En- Vision Enviro Engineers Pvt Ltd Surat |
| 28 | Shifting of Non Confirming Polluting Industries in Agra to confirming Area & Designing A CETP for Tanning Industry | Anand Gupta | 2009 | Ramky Enviro Engineers Ltd New Delhi |
| 29 | Waste Water & Hazardous waste Management Including Designing to two ETP s (4 & 5.5 MLD) & a secure Land fill Facility at Patratu Thermal Power Station | Malik Musbashir Ahmad | 2009 | Ramky Enviro Engineers Ltd New Delhi |
| 30 | Hazardous Waste Characterization & Stabilization of Organic Content & Heavy Metal & Environmental Monitoring of Hazardous Waste Treatment Storage & Disposal Facility | Rana Pratap Singh | 2009 | Ramky Enviro Engineers Ltd Pithampur Dist Dhar |
| 31 | Habak sewage Treatment Plant Effluent & Water Quality Deterioration of the receiving Stream | Imtiyyaz Ahmad Shah | 2010 | Research & Monitoring Division J & K Lake & Waterways Developmental Authority Srinagar |
| 32 | Performance Evaluation of STP plant at Rwss Dausa District (Rajasthan) | Mohd. Shahid Siddiqui | 2010 | Ramky Enviro Engineers Ltd New Delhi |
| 33 | Pilot Plant Study of Biogas Production From De-oiled Seed Cakes of Jatropha | Virendra Kumar | 2010 | I.I.T Delhi |
| 34 | Energy Recovery in Sewage Treatment Plant & Role in Earning of Carbon Credits | Shubhra Singh | 2010 | Tokyo |
| 35 | Pre-feasibility Study for The Effluent disposal & Utilization of Sludge Generated from STPS Located at Various Location in Delhi | Ruchi Srivastava | 2010 | Ramky Enviro Engineers Ltd New Delhi |

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| 36 | Status or Ambient air quality in Varanasi | Mohd Muzzafer Dar | 2011 | Envirotech Instruments Pvt. Ltd New Delhi |
| 37 | Characterization of Industrial Effluent & its impact on Common Effluent Treatment Plant Performances | Mahesh Prasad Barya | 2011 | Butibori Cetp Pvt Ltd Nagpur |
| 38 | Process design of 30 MGD Capacity Sewage Treatment Plant at Okhla, New Delhi Based On Up Flow Anaerobic Sludge Blanket Technology With facultative Aerated Logon | Sunil Sharma | 2011 | MWh India Pvt. Ltd New Delhi |
| 39 | Detail Study of Hazard Risk Assessment & Vulnerability Analysis For Distance Management in Chhattisgarh State (District: Dantewara & Baster) | Yashwant Kumer Pandey | 2011 | Ramky Enviro Engineers Ltd., Dwarka -7 New Delhi. |
| 40 | States of Ambient Air Quality in Agra | Priyanka Verma | 2011 | Envirotech Instruments Pvt. Ltd New Delhi |
| 41 | Optimization of the Process Parameters for Bio-sorption of Chromium in Electroplating Effluent by Bacillus Cereus | Swati Sauran | 2011 | School Of Environment Sciences Jawaharlal Nehru University New Delhi |
| 42 | Municipal Solid waste Management A case Study at Sushant colony at city Lucknow | D. Asha | 2011 | Ramky Enviro Engineers Ltd., Somajiguda , Hyderabad |
| 43 | Status of Air Quality in Kanpur City Based ok Monitoring Station Kanpur, | Laxmi Kumari | 2011 | Envirotech Instruments Pvt. Ltd New Delhi |
| 44 | Process design of 12 MGD Capacity sewage Treatment Plant at Keshopur, New Delhi, Based on moving bed Bio Rector (MBBR) Technology | Anjali Barwal | 2011 | MWh India Pvt. Ltd New Delhi |

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| 45 | A Decadal Trend of Air Pollution Scenario in Kolkata | Swati Moolchandani | 2012 | Central Pollution Control Board New Delhi |
| 46 | Performance Evaluation & Up gradation of Common effluent Treatment Plant Vapi, Gujarat | Sadhana Pandey | 2012 | GTZ, Asem Indo German Environment Program. New Delhi |
| 47 | A Decadal Trend of Air Pollution Scenario in Delhi | Bhavisha Sharma | 2012 | Pollution Assessment Monitoring & Survey Div., Central Pollution Control Board New Delhi |
| 48 | Preparation of City Sanitation Plan for Uttarkashi | Vinay Kumar Singh | 2012 | MWh India Pvt. Ltd New Delhi |
| 49 | Baseline Study on solid Waste Minimization Potential with GIS applications in VAPI Industrial Estate VAPI Gujarat | Apurva | 2012 | GTZ , Asem Indo German Environment Program New Delhi |
| 50 | Performance Evaluation of Individual ETP " S to Improve CETP & ITS GIS Mapping VAPI Gujarat | Mamta Singh | 2012 | GTZ , Asem Indo German Environment Program Gandhi Nagger Guajarati |

**M. Tech Internship 2007-12**

| S. No. | Title | Student Name | year | Company Of Internship |
|---|---|---|---|---|
| 1 | Lighting design for anti corruption bureau Building ,Jhaln Institutional area, Jaipur | Pragati Khanwilkar | 2007 | The Forum, Jaipur |
| 2 | Energy Audit at study in different Industries | Pushpendra Nayak | 2007 | PHD chamber of Commerce, New Delhi |
| 3 | Energy audit of 210 MW Thermal Power Plant | Arunesh Dwivedi | 2007 | ERDA,Baroda |
| 4 | Nahar sugar and allied Industries Ltd" (Part -A) Milkfed Patiala | Sachin kumar Verma | 2007 | NITCON , Chandigarh |

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| 5 | Wind flow modeling in and around Jogimatti wind monitoring station in Chitrudurga district, Karnataka | Lalit Birla | 2007 | Centre For Wind Energy Technology Chennai |
| 6 | Detailed Energy audit of sugar mill | Mayur Dangare | 2007 | Sr Consultant DSCL, New Delhi |
| 7 | Detailed Energy Audit of a colour Industry | Ravikiran Bamne | 2007 | Devki Energy Consultancy Pvt Ltd Vadodara |
| 8 | Energy Audit of pharmaceutical Utricle Industry | Nitin Kulkarni | 2007 | |
| 9 | Energy Audit of Thermal Power Plant | Abhijit Roy | 2007 | Conzerv Systems Pvt Ltd |
| 10 | Preparation of Project Design document for cogeneration plant of sugar industry by using ACM006 & Energy audit or Pumping Stations | Samir D Gaykar | 2007 | Risk & Business Solutions Ernst & Young Pvt Ltd Hyderabad |
| 11 | Energy Audit of a thermal power plant | Sanjay Singh | 2007 | |
| 12 | Energy audit at Datia paper mill Pvt Ltd | Rajesh kumar singhdiya | 2007 | Energy Audit Services Faridabad |
| 13 | "Electrical Audit of Saifee Hospital Mumbai and PRIVI organics Ltd., Mahan " | Anupam Gupta | 2008 | DSCL Energy Services New Delhi |
| 14 | Detailed Energy audit ( Sponge Iron Industries & Steel Wire Industries) | Vivek Ahirwar | 2008 | CONSERV System Pvt Ltd Bangalore |
| 15 | Energy Management system | Chandrkant sahu | 2008 | |
| 16 | Detail Energy audit ( Ferrous Industries Ltd & Gas cylinder Filling Industry ) | Neelesh Patel | 2008 | CONSERV System Pvt Ltd Bangalore |
| 17 | Wind Power Estimation in a Complex Terrain | Asha S. chandran | 2008 | |

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| 18 | CDM validation of bundled wind Energy Project in Tamilnadu. | Abhishek Srivastava | 2008 | TUV Rhineland (India) Pvt. Ltd , Pune |
| 19 | Thermal audit of chemical Industry and Hospital | Shelendra Chanderiya | 2008 | M/S DSCL Energy Services Company Ltd Ahmadabad |
| 20 | Detailed Energy audit of Raghuleela Mega mall | Rishabh Agrawal | 2008 | |
| 21 | Detailed Energy audit of J.P. Morgan Services India Private Limited Mumbai | Ravikant Soni | 2008 | Blue Star Ltd Mumbai |
| 22 | Climate change a study of voluntary carbon mechanism | Edela Dungdung | 2008 | TUV India Private Limited, Sheetal Plaza, Ground Floor 1125 Model Clooney Pune |
| 23 | Convergence of computers, communication and power technologies for Effective Enterprise energy management systems | Darshna Pokharna | 2008 | CMS Computers Ltd. Universal; Solutions Mumbai |
| 24 | Verification of CDM project 56.25 MW bundled Wind energy Project ,Tirunlvdi ,Coimbatore District in Tamilnadu India & Validation of CDM project "Biomass Gasification Based Power Generation by Beach Minerals Company Private Limited | Manish Dabkara | 2008 | SGS India Pvt Ltd New Delhi |
| 25 | Industries and Power Plant | Narottam Baroniya | 2008 | Electrical Research & Development Association (ERDA),Baroda |
| 26 | Energy audit of Panchmahal steel Pvt Ltd | Niti Jinwal | 2008 | Electrical Research & Development Association |

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| | | | | (ERDA), Baroda5` |
| 27 | Detailed energy audit of a Malt Based food Industry | Nitesh Patel | 2008 | MITCON Consultancy Services Ltd |
| 28 | Designing of Earth Air Tunnel of Cater the fresh air requirement of an Office Building | Lokesh Joshi | 2009 | Wipro - Eco Energy Bangalore |
| 29 | Detailed Energy audit of Eight Pumping/ receiving Station of Mundra, Delhi Pipe Line (MDPL) of Hindustan Petroleum Corporation Limited (HPCL) | Mohish khare | 2009 | Technical & Management Consultancy Center (TMCC) 5135, Second Floor MHC Chandigarh |
| 30 | Designing of grid connected 5 mw solar PV power Plant | Pankaj Kumar | 2009 | Wipro - Eco Energy Bangalore |
| 31 | Energy Audit Report of 2x 25 mw thermal Power Plant | Pramod Bokade | 2009 | |
| 32 | Clean Development Mechanism Program of activity | Vikas Yadav | 2009 | Energy & Climate Change Specialist ,My Home Navdweep Varuna 816 Opp.NIFT Near Cyber Madhapur, Hyderabad |
| 33 | Validation of CDM project Energy Efficiency & Fuel Switch in Brewery Haryana India & Verification of CDM Project Hydro Electric Power project Himachal Pradesh Project Himachal Pradesh India | Ajay Singh Thankur | 2009 | SGS India Pvt Ltd Gurgaon |

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| 34 | Assessment of Compliance of Project Design Document of Biomass Power Project against relevant UNFCCC & Host Party Criteria | Chetan Swaroop Sharma | 2009 | TUV Rhineland Precisely Right , Alpha Tower Sigma Soft Tech Park Bangalore |
| 35 | 10 MW wind Project design Project Design document of Maharashtra & A study on role of Energy Audit in Carbon Foot print Reduction in Designated Industries | Sanjay Kandari | 2009 | SENERGY Global Ltd New Delhi |
| 36 | Detail Energy audit of chiller & study of thermal Images | Rahul Mahajan | 2009 | CONZER System Pvt Ltd Bangalore |
| 37 | Detail Energy Audit of Building | Anil Sudan Samudre | 2009 | Energetic Consulting Pvt Ltd., Thane |
| 38 | Designing & Installation of 20 kW Photo voltaic power Plant Solar Energy Center | Pragya Sharma | 2009 | Solar Energy Center, MNRE, Gurgaon |
| 39 | Comprehensive Under Standing of the CDM project cycle & Preparation o project design documents | Arpita Patankar | 2009 | GENSOL Consultant Pvt Ltd Ahmadabad Gujarat |
| 40 | Designing & Installation of grid Connected 3 MW solar Pvt Power Plant | Rahul Hiwase | 2010 | Tata Bp Solar India Ltd Bangalore |
| 41 | Energy Audit al Cummins Exhaust India Ltd Daman | Dusyant sahu | 2010 | Schneider Electric India Pvt Ltd Bangalore |
| 42 | Detail Energy Audit of leading Engineering Plant | Ankit Nager | 2010 | Confederation Of Indian Industry. Chandigarh |
| 43 | Financial Viability of Hydro Power CDM Project (H.P) | Vikash Kumar Ahirwar | 2010 | GENSOL Consultant Pvt Ltd Ahmadabad Gujarat |
| 44 | Energy Audit at Celebration Appeal Ltd | Atul Kumar | 2010 | Schneider Electric India Pvt Ltd Bangalore |

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| 45 | Framework for Micro Scale renewable Energy & Energy Efficiency project to enhance sustainable development | Juned Khan | 2010 | The Gold Standard Foundation Barakhamba Road, New Delhi |
| 46 | Detail Energy Audit of Murti service Station | Ankur Nager | 2010 | TUV SUD South Asia Pvt Ltd |
| 47 | Detail Energy Audit of Leading Engineering Plant | Ankit Nager | 2010 | Confederation of Indian Industry. Chandigarh |
| 48 | Energy Audit at Raymond 's Ltd | Kamlesh Shah | 2010 | Schneider Electric India Pvt Ltd Bangalore |
| 49 | Detail Energy Audit of a leading Tyre Manufacturing Company | Sager Samal | 2010 | Confederation Of Indian Industry. CHANDIGARH |
| 50 | Commissioning of a Commercial green Building New Delhi | Pradeep Joshi | 2010 | SGS India Pvt. Ltd. Gurgaon |
| 51 | Designing of grid connected 5 MWp solar PV power plant | Priyadarshi Khare | 2011 | Solar Energy Division GENSOL Consultants Pvt Ltd |
| 52 | Designing & Performance Evaluation of 1 MW grid Connected Solar Power plant | Ashish Sethiya | 2011 | Tata Bp Solar India Ltd Bangalore |
| 53 | Environment Aspects Impact Analysis & Group risk Assessment of Anand Rajkot Pipe line control station site of GSPL | Manish Dube | 2011 | Gujarat State Petro net Ltd , Vadodara |
| 54 | Energy Audit at Lona Industries Limited ,Panvel Maharashtra | Shyam Gupta | 2011 | GENSOL Consultant Pvt Ltd Ahmadabad Gujarat |
| 55 | Designing & Exaction of grid Connected 1 mw solar P.V. Power Plant | Ashish verma | 2011 | Tata BP SOLAR INDIA LTD BANGALORE |

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| 56 | A. Study of wind Characteristics and Effect of obstacles of wind energy Generation of Manatkheda | Garima Neema | 2011 | Centre FOR WIND ENERGY TECHNOLOGY Chennai |
| 57 | Effect of gas Production due to different waste Combinations with Poultry Letter | Arti singh | 2011 | I.I. T. Delhi |
| 58 | Energy Audit at the Oberorl Hotel Udai Vilas, Udaipur | Himanshu sharma | 2011 | Schneider Electric India Pvt Ltd Gurgaon |
| 59 | Energy audit at Shop & Detergent Manufacturing Plant | Jayant Jain | 2011 | Schneider Electric India Pvt Ltd Gurgaon |
| 60 | Project -1 implementation & Installation of 10 TPH Briquette Fired Boiler In Pharmacy Company of Hyderabad" Project-II "Installation & commissioning Water per Heater & Cyclone In Chemical plant at Hyderabad Project III " Erection of zero Liquid Discharge Project in APIIC at Pydibhimavaram Under Yajna Fuel Services Thane Mumbai | Mohammad Shahzad Sheikh | 2011 | Yajna Fuel Services Thane |
| 61 | Implementation ECOPROFIT Programmed in Bhiwandi Industrial Estate (2010-11) Joint Initiation of GIZ - ASEM , STENUM GMBH & BMA" | Kumar S. Pawar | 2011 | GTZ ASEM , Delhi |
| 62 | Energy Audit Optical Fiber Cable Industry | Ambuj Adhwaryu | 2011 | Mr. Vijayarengamani R. Associate General Manager Schneider Electric India Pvt Ltd Bangalore |
| 63 | CDM Project of energy efficiency measures at Moral overseas limited | Satish Bhargav | 2010 | Green Business Solutions 201, Om Bhavan |

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| | India | | | Indrapuri Indore |
| 64 | Energy Audit at Delphi TVS diesel system Limited Rudrapur | Rahul B. Kolhe | 2010 | Schneider Electric India Pvt Ltd Gurgaon |
| 65 | Pyrolysis of Crop residue of Obtain Liquid Fuel | Mrs Laxmi Raiwar Singadiya | 2011 | |
| 66 | Detail Energy Audit of Commercial building | Chinten Singh Parmar | 2010-12 | ENCON Energy Management Services Pvt Ltd Mumbai |
| 67 | Loss Analysis of grid Connected I.I.MW P Solar P.V, Plant | Richa Patel | 2010-12 | Wipro - Eco Energy Bangalore |
| 68 | Energy Simulation of Commercial Building | Kaushal Lodaya | 2010-12 | SGS India Pvt. Ltd. Gurgaon |
| 69 | Energy Audit at Pharmaceutical Industry | Sohail Khan Pathan | 2010-12 | Devki Energy Consultancy Pvt Ltd Vadodara |
| 70 | Performance Analysis of 40 MW Solar P.V Plant | Laxmikant Gaikward | 2010-12 | L&T Solar SBG, L&T Construction, Chennai |
| 71 | Energy Simulation of Existing Building | Shashank Mandovra | 2010-12 | SGS India Pvt. Ltd. Gurgaon |
| 72 | Energy Audit at Power Grid Corporation of India Limited | Umang Gupta | 2010-12 | Blue Star Ltd Mumbai |
| 73 | Detailed Project Management Cycle for renewable Energy Certification (REC) & Power Trading | Prashant Nene | 2010-12 | GENERAL CARBON Advisory Services Pvt Ltd Mumbai |
| 74 | Detail Energy Audit Conservation & Opportunities at Kirloskar Oil Engine Plant Kolhapur | Kaushik Paul | 2010-12 | Energetic Consulting Pvt Ltd Thane |

| | | | | |
|---|---|---|---|---|
| | | | | Mumbai |
| 75 | Detail HVAC Energy Audit of Thermal Power Plant | Mangesh Kumbhar | 2010-12 | Blue Star Ltd Mumbai |
| 76 | Validation of CDM Program Activity at Skol Breweries Ltd. Waluj, Aurangabad (CPA- 015) | Aditya Nandan Pawar | 2010-12 | TUV Rhineland (India ) Pvt Ltd Mayfair Towers Mumbai |
| 77 | Energy Audit Uniparts India Ltd ,Munjal Showa Ltd. | Bharat Kumar Rangwani | 2010-12 | Larsen & Toubro Limited - Mumbai |
| 78 | To Design Grid Interactive Roof Top Solar Photovoltaic Power Plant | Anjali Kanungo | 2010-12 | Wipro - Eco Energy Bangalore |
| 79 | Energy Audit of Engineering Plant & Radiator Industry | Madhav Kothri | 2010-12 | Devki Energy Consultancy Pvt Ltd Vadodara |
| 80 | Techno - Economic Feasibility of Grid Connected 20 MW Solar PV Power Plant | Neha Pathak | 2010-12 | GENSOL Consultant Pvt Ltd Ahmadabad Gujarat |

3.7.3 Copy of MoUs with institutions of national/international importance/other universities/ industries/corporate houses etc.

MOU with Kun Shan University for academic exchange is given below.

Kun Shan University 崑山科技大學

**Intent for Possible Co-operation and Communication for TEC Activities**

**of**

**Devi Ahilya University, Indore and Kun Shan University, Tainan, Taiwan**

This is a non-binding agreement. In order to widen the scope of collaboration, we take the opportunity for further co-operation and communication by starting to establish Taiwan Education Center (TEC) in India. Within the three year plan for the TEC, co-operations of both schools can take the opportunity of few activities. Activities of the international co-operations are as followed.

1. To search for a possible space for setting up the office of TEC in India: We strive to create a physical space that exhibit information related to promoting universities in both Taiwan and India with issues of higher education.
2. Exchanging visits of headmasters: In order to get a better understanding of each other and learn from each other, we provide the exchanging visits for the headmasters and people for management from both sides regularly or irregularly. Finally improve the in-depth co-operation of education in Taiwan and India.
3. Students' exchange: We will organize parts of students from both sides, and provide them a chance to receive education from both sides.
4. International Student Recruitment Promotion: We will recommend excellent graduates and encourage studying aboard from both side of school for providing of scholarships.

Dr. Bhagirath Prasad 10/9/08
Vice Chancellor,
Devi Ahilya University, Indore, M.P., India

H. M. Chou
Prof. HM Chou,
Project leader, Taiwan Education Centre in India
&
Dean of Engineering College
Kun Shan University, Tainan, Taiwan

B. Record of enhanced the research and development activities

Faculty exchange for teaching and lectures on specific topics

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

Yes, Energy Conservation Laboratory and Waste Water Laboratories are used for industrial interaction.

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

All the faculty members are actively involved in Research and Development in the field of renewable energy, energy conservation and environment. School approach is mainly to work on application research of real local, national and international field problems.

School has published papers in national and International refereed journals of good **Impact Factors** and some of the papers are highly cited worldwide. One Research publication has also awarded for the best cited paper by ELSIVIER, UK.

85 % reimbursement to Assistant professor,70% tp Associate Professor and 50% to Professor are provided for membership fee of Top International Research Bodies in the field by University

Internet Broad Band charges up to Rs 650 per month reimbursed to Ph. D Guiding Faculty.

The following conferences were also successfully organized and large number of eminent scientists and dignitaries were present.

a. 2nd Bhartiaya Vigyan Sammelan and Expo, Devi Ahilya University, Indore, 1-3 December 2009

**b.** First and Second National Conference for Shanti Swarup Bhatnagar Awardees 8th -10$^{th}$ March, 2007 and July 17-19, 2009 DAVV. Indore

## CRITERION IV: INFRASTRUCTURE AND LEARNING RESOURCES

4.1 Physical Facilities

4.1.1 A. Details of Department physical infrastructure (in Sq m)

Energy Efficient Building with 5 kW solar power plants to cater the needs of Computers, Lighting, Fans, and LCD Projectors of class rooms, seminar hall, labs, staff and office.

| | |
|---|---|
| Land Registration No | : 639-624-7-1 |
| Date of Registration | : 02/11/1966 |
| Khasra Number | : 62;78 |
| Area of Land | : 2 Acres |
| **Building status: Independent Building of School** | |
| **Total built up area in Sq m** | **: 1259 Sq m** |
| Ground Floor in Sq m | : 306.59 **Sq m** |
| First floor in Sq m | : 629.54 **Sq m** |
| | |
| Total Instructional area (carpet area) ready in Sq m | : 447 **Sq m** |
| Total Administrative area (carpet area) ready in Sq m | : 86 **Sq m** |
| Head/Director Office in Sq m | : 37.35 **Sq m** |
| Faculty Rooms (4) in Sq m | |
| | |
| Office All Inclusive in Sq m | : 150.6 **Sq m** |
| Total Amenities area (carpet area) ready in Sq m | : 51 **Sq m** |
| Class Room I in Sq m | : 96.2 **Sq m** |
| Class Room II in Sq m | |
| Seminar Hall (75 seated) | : 85.0 **Sq m** |
| +lobby(for Tea etc) | : 50 **Sq m** |
| | |
| **Academic laboratories** | |
| Laboratory I ECLAB | : 85 **Sq m** |
| Laboratory II STPVLAB | : 80 **Sq m** |
| Heat Transfer Lab | |
| Biomass and biofuel Lab | |
| Environmental lab | |
| Computer lab | |
| | |
| **Laboratories Research** | : 80 **Sq m** |
| Biogas and biofuel Lab | |
| Biomass Combustion and Gasification Lab | : 100 **Sq m** |
| Solar Thermal Lab | |

| | | |
|---|---|---|
| Waste Water and Hazardous Waste stabilization Lab | : | |
| Workshop | : 100 | **Sq m** |
| Girls Common Room | : 20 | **Sq m** |

**Building Map File No. F5 4.1.1A**

B. Maintenance of Laboratories for its optimal utilization

- Laboratories are maintained by regularly checking the working of equipments is done.
- Contract with suppliers for maintenance is normally done.
- USIC of University also help.

C. Maintenance of Computers for its optimal utilization

- Annual Maintenance contract is given for regular maintenance
- Annual contract and on breakdown maintenance

D. Maintenance of UPS, Power Supplies

Annual contract and on breakdown maintenance are done

E. Maintenance of support services, sanitation, first aid boxes

- University Engineering Department takes care of support services and sanitation.
- First aid boxes are installed in all laboratories.
- Expertise of department is also used for support services.

F. Maintenance of building, garden, indoor games structure

- ✓ Maintenance of building is look after by Engineering department.
- ✓ Gardens are developed with different type of plants and also maintained by School.
- ✓ Common facilities are available for all departments and maintained by university.

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

- ✓ Air-conditioned class rooms
- ✓ Multimedia projection ,Wi-fi and Internet system
- ✓ Air-conditioned Seminar hall of capacity 75 seats equipped with Multimedia Projection and Wi-Fi facilities

**Photo of Class Rooms File No. F5 4.1.2**

4.1.3 Physical ambience for the faculty in terms of adequate research laboratories, computing facilities and allied services

- ✓ Faculty rooms are well furnished with AC and other facilities to related computers.
- ✓ Research laboratories are well equipped with required facilities and having modern instruments and equipments.
- ✓ Each Teacher has One/Two research laboratory separately for their research work.

**Photo of** research laboratories **File No. F5 4.1.3**

4.1.4 List of Facilities like office room, common room and separate rest rooms for women students and staff

Office Rooms : 02
Class Rooms: : 02
Seminar Hall : 01(75 seated) +lobby(for Tea etc)
Store : 02

**Academic laboratories**

Laboratory I ECLAB
Laboratory II STPVLAB
Heat Transfer Lab
Biomass and biofuel Lab
Environmental lab
Computer lab

**Research Laboratories**

Biogas and biofuel Lab
Biomass Combustion and Gasification Lab
Solar Thermal Lab
Waste Water and Hazardous Waste stabilization Lab
Workshop
Girls Common Room

**Photo of** offices, common room **File No. F5 4.1.4**

4.1.5 List of the infrastructure facilities are disabled-friendly
Ramps are being made. Internet for blinds is available in IT center.

4.1.8 Departmental special facilities are available on campus to promote students' interest in sports and cultural events/activities
School has its own Seminar Hall
It is used for cultural activates and also. are available for all departments .
Excellent sports facilities are available for all departments

*4.2* Library as a Learning Resource

4.2.1 Details of departmental library facilities:

- ✓ The School is fully equipped with recourses in terms of books in Library, CD's /DVDs
- ✓ Total Books available are 4439 titles 85
- ✓ 85 educational -technical video CD's and DVD's
- ✓ 05 Journals
- ✓ 84 e-journal and 7 print journals
- ✓ 22 Magazines
- ✓ Relevant software's related to Energy and Environment
- ✓ School library is fully computerized and linked with Central library and other Departmental libraries..

4.2.2 Provide details of the departmental library:

* Total area of the library (in Sq. Mts.) :22.5
* Total seating capacity :20
* Working hours (on working days, on holidays, before examination, during examination, during vacation) : 8 hrs/day (six days/week)
* Layout of the library

Photo graph and Layout of the library of library, File No. F5 4.2.2

(Individual reading carrels,
Lounge area for browsing and
Relaxed reading, IT zone for accessing e-resources)

* Clear and prominent display of floor plan

File No. F5 4.2.2 floor plan

* Adequate sign boards; Yes
* Fire alarm; To be installed
* Access to differently-abled users and Yes
  * Mode of access to collection

Computer/Manual

4.2.3 Departmental library holdings:

a) Print (books, back volumes and theses)

Books : 4439
Back volumes : 85

**Thesis M. Tech (Energy Management)**
Major Projects : 240
Minor Projects : 240

**Thesis M. Phil (Energy and Environment)**
Major Projects : 119
Minor Projects : 119

**Thesis Ph. D (Energy /Energy and Environment)**
Number of Thesis: 25

File No. F5 4.2.3A List of library books, thesis

b) Average number of books added during the last three years

Average number of books purchased in last three years : 40

c) Non Print (Audio Video, CDs, Downloaded Articles)

*Audio Video, CDs/DVDs :* 85
Downloaded Articles : 50

File No. F5 4.2.3E List of Cd/DVD's, Download Articles

d) Electronic (e-books, e-journals)

e-books :40
e-Journal in Energy and Environment :84

File No. F5 4.2.3D List of e-books

e) Special collections (e.g. text books, reference books, standards, patents)

Reference books : 100

Standards : 150

*(BIS standard, ISO, IES etc)*

File No. F5 4.2.3E List of standard codes

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

* OPAC
* Electronic Resource Management package for e-journals

**School use University website for access the e-journals and paid by university.**

* Federated searching tools to search articles in multiple databases
* Library Website

***Library server used for access the books***

* In-house/remote access to e-publications

4.2.5 Use of ICT deployed in the library

* Library automation

*Library is fully computerized for the records and availability check of books, journal and magazines*

* Total number of computers for public access

**One**

* Total numbers of printers for public access

One

* Internet band width speed □ 2mbps □ 10 mbps ✓□ **1 GBPS**
* Institutional Repository
* Content management system for e-learning

***Loaded in Computer Laboratory for access***

* Participation in resource sharing networks/consortia (like INFLIBNET)

***Yes, resource sharing networks is used***.

4.2.6 Details (per year) with regard to

* Ratio of library books to students enrolled

| Year | No. of Books | No. of students (As per sanctioned seats in different programs | Ratio of library books to students enrolled |
|---|---|---|---|
| 2008 | 4349 | 80 | 54 |
| 2009 | 4359 | 80 | 54 |
| 2010 | 4424 | 80 | 55 |
| 2011 | 4428 | 80 | 55 |
| 2012 | 4439 | 80 | 55 |

* Average number of books added during the last four years
  **Average books added : 23**
  Few books are added in last four years.
* Assistance in searching Databases
  **TLSS software is used for Database and searching the books.**
* INFLIBNET/IUC facilities
  **Both facilities are used frequently for research work.**

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

Departmental budget: Rs **1.0 lac/year**

*(Including Project Heads for books and journal)*

**4.3 IT Infrastructure**

4.3.1 Details of Department IT and ICT Infrastructure

| | |
|---|---|
| Computer Laboratory | : 20 computers for students |
| ICT Infrastructure | : 3 LCD Multimedia projector-computers Systems Installed in class rooms and Seminar hall |
| Faculty Rooms | : 04 computers |
| Research Work/laboratories | : 10 |
| Offices and library | : 08 |
| **Total Computers in School** | **: 45** |

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

- Number of systems with individual configurations
  P4
- Computer-student ratio : 1:1
- Dedicated computing facilities : 02
- LAN facility : all computers in LAN
- Proprietary software : 20
- Number of nodes/
  computers with internet facility : 45
- Any other (please specify) : 450 computers with internet available for students as a common facility in IT center. The center facilities are avail ale from 8.0 a.m to 8.0 p.m

4.3.3 Plans and strategies for deploying and upgrading the IT infrastructure and associated facilities

- *Speed up-gradation*
- *Increase in Latest technology based Computers.*

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.

- ✓ Power Point Presentations
- ✓ Video films data base for teaching and learning
- ✓ E- books loaded on computer for access to students

4.3.5 IT facilities available to individual teachers for effective teaching and quality research

*IT facilities are available for all teachers individually ad used extensively.*

4.3.8 A. Details of ICT-enabled classrooms/learning spaces available

Class rooms and seminar hall are equipped with multimedia setup to make ICT-enabled classrooms

B. Record of utilization for enhancing the quality of teaching and learning

- ✓ Teaching notes, Power Point Presentations, e-books and audio video material are loaded in class room computers.
- ✓ Industrial visits in different types of Industries
- ✓ Technical Video films on Energy and environment
- ✓ E-books and other ICT materials loaded in Departmental computers.
- ✓ Seminars, Minor and Major projects

4.3.9 Records of Faculty and computer- aided teaching-learning materials

- ✓ Teaching notes, Power Point Presentations audio video material in soft and hard copies distributed to students by individual teacher

4.3.10 Department availing of the National Knowledge Network connectivity

- ✓ Through Internet network

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

- NKN system link through IT center in the class rooms.

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

- Rs, 60,000 only, but we met the requirements through other Projects.

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

Gradually the open environment will be establishedfor teaching and learning possibly by the end of XII plan.

**4.3 Any other information regarding Infrastructure and Learning Resources which the university would like to include.**

University has ICT infrastructure. Wi-Fi campus ,best auditorium and sports fields.

## 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

School of Energy and Environmental Studies have 07 sanctioned posts . At present, 03 posts are filled. The following teachers are holding the responsibility to run the M. Tech (energy Management), M/Phil (Energy and Environment) and Ph.D programs in Energy & Energy and Environment. The structure is given below.
*All teachers discuss the problems of the students and take unanimous decision for the growth of student and to provide a stress free environment to the students.*

**Dr S. P. Singh, Professor and Head**

- ✓ Functional characteristics: Head
- ✓ Academic programs monitoring and quality
- ✓ Chairmen, Departmental Committee to discuss weekly problems with other faculty members and provide solutions for smooth functioning of the academic programs and all departmental activates
- ✓ Chairman, Departmental Research committee
- ✓ Students Admission
- ✓ Students placement
- ✓ Students Scholarship matters
- ✓ Governance and Leadership for Administrative, academic, Financial matters of the department
- ✓ Chairman of Grievance Redressal Cell
- ✓ Overall Responsibility for solving the problems of all students: Mentor for all students

**Dr R.N. Singh, Professor**

- ✓ Counseling and Career counseling for M. Tech Students
- ✓ Student Records M. Tech Students
- ✓ Member of Grievance Redressal Cell
- ✓ Records and activates of Alumni Association
- ✓ Records and activates Parent-Teacher Association
- ✓ Member, Departmental Committee to discuss weekly problems with other faculty members and provide solutions for smooth functioning of the academic programs and all departmental activates
- ✓ Member, Departmental Research committee

**Dr Rubina Chaudhary, Associate Professor**

- ✓ Counseling and Career counseling for M. Phil Students
- ✓ Student Records for M. Phil Students
- ✓ Examination In charge for all Departmental tests and examinations including admission tests (M. Phil ,M. Tech and Ph. D Students)
- ✓ Member of Grievance Redressal Cell
- ✓ Chairperson of Complaints Cell for preventing sexual harassment of women
- ✓ Member, Departmental Committee to discuss weekly problems with other faculty members and provide solutions for smooth functioning of the academic programs and all departmental activates
- ✓ Chairperson, departmental sport activities.

Two regular Staff Members and Two self financed program staff help to students for their fulfillment of formalities related to admission, enrollment, result, scholarships etc in addition to help in other activates of students

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

Field visits in different large industries/organizations and huge renewable energy field systems is found very effective for understanding the issues related to technical and economical aspects of real design, construction, implementation and operational systems.

**File No. F6 5.1.2**

5.1.3 Record of department student's 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.

- ✓ University Career Counseling Cell organizes the lectures time to time.
- ✓ A language laboratory is setup for all students from UGC grant at School Of Computer Science and Information technology
- ✓ Department give the training of skill development through real field project such as Energy auditing and energy conservation , designing of solar thermal and power generation projects, Environmental Impact Assessment etc and these activities help in their jobs.

**Photo and list of Energy Studies related projects under skill development**

**File No. F6 5.1.3**

5.1.4 Department publish its updated prospectus and handbook info annually on website and online access of course plans, syllabi and result

*Yes, update the website time to time*

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

| M. Tech and M. Phil Students | | | |
|---|---|---|---|
| **Year** | **Type of Scholarship** | **Number of Scholarship** | **Agency** |
| **2007-2009** | GATE Fellowship | 06 | AICTE , New Delhi |
| | Post Metri Scholarship | 03 | M.P. Govt |
| **2008-2010** | GATE Fellowship | 04 | AICTE , New Delhi |
| | Post Metri Scholarship | 02 | M.P. Govt |
| **2009-2011** | GATE Fellowship | 02 | AICTE , New Delhi |
| | Post Metri Scholarship | 01 | M.P. Govt |
| | Maulana Azad National Fellowship | 01 | MANF For Minority Student ( Under UGC), New Delhi |
| **2010-2012** | GATE Fellowship | 02 | AICTE , New Delhi |
| | Post Metri Scholarship | 01 | M.P. Govt |
| **2011-2013** | GATE Fellowship | 07 | AICTE , New Delhi |
| | Post Metri Scholarship | 02 | M.P. Govt |
| **2012-2014** | GATE Fellowship | 06 | AICTE , New Delhi |
| | Post Metri Scholarship | 0 | |
| **Ph. D Students Scholarship** | | | |
| **2007** | Rajeev Gandhi National fellowship | 01 | UGC, New Delhi |
| **2008** | nil | nil | nil |
| **2009** | nil | nil | nil |
| **2010** | NRE fellowship | 01 | NREF, New Delhi |
| **2011** | NRE fellowship | 02 | NREF, New Delhi |
| **2012** | MP Biotechnology Council fellowship | 01 | M.P. Govt. |

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.)

| **M. Tech and M. Phil Students** | | | |
|---|---|---|---|
| Year | Central government provided scholarship<br><br>In % | Central government provided scholarship<br><br>In %% | Other Agencies provided scholarship<br>In % |
| 2007-09 | 66.7 | 33.3 | 0 |
| 2008-10 | 66.7 | 33.3 | 0 |
| 2009-11 | 50.0 | 25.0 | 25 |
| 2010-12 | 66.7 | 33.3 | 0 |
| 2011-13 | 77.8 | 22.2 | 0 |
| 2012-14 | 100.0 | 0.0 | 0 |
| **Ph. D Students Scholarship** | | | |
| 2007 | 100.0 | 0.0 | 0 |
| 2008 | 0.0 | 0.0 | 0 |
| 2009 | 0.0 | 0.0 | 0 |
| 2010 | 100.0 | 0.0 | 0 |
| 2011 | 100.0 | 0.0 | 0 |
| 2012 | 0.0 | 100.0 | 0 |

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

**N.A**

5.1.8 Department support services available for

* Students participating in various competitions/conferences in India and abroad
  **Yes, Rail fare concessions are provided for conferences in India.**
* Physically challenged / differently-abled students
  **No student till the inception of department joined the program. But the**

**facilities may be proved in department. Ramp planned in 2013-14.**

- SC/ST, OBC and economically weaker sections
  - **Facilities provided as per Government rules.**
  - **Additional classes are taken for improvement in subjects and in communication skills.**
- Health centre, health insurance etc.
  **Common facility for all in University Health center**
- Skill development (spoken English, computer literacy, etc.)
  **Computer application and software's are taught in courses for skill development**.
- performance enhancement for slow learners
  **Yes, remedial classes are conducted for performance enhancement after identifying the weak students**
- exposure of students to other institutions of higher learning/ corporates/business houses, etc.
  **Regular activity for the exposure of students to industrial/cooperate organizations are done on every alternative Saturday throughout the year**.
- publication of student magazines
  **Students are encouraged to write articles in magazines /newspapers.**
- Record of student participation in sports and extracurricular activities

**File No. F6 5.1.8**

5.1.9 Placement Records

**File No. F6 5.1.9**

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).

Students are employed during their project in last semester. There is no need to call companies for interview in campus in our department.

5.1.11 A. Record of registered Alumni Association

**File No. F 6 5.1.11**

D. Record of activities and contributions to the development of the department

**File No. F 6 5.1.11**

C. Record of alumni meets

**File No. F 6 5.1.11**

5.1.12 A. Committee members and record of student grievance redressal

**File No. F 6 5.1.12**

B. Details of the nature of grievances reported and the redressal

No grievances reported

5.1.13 A. Record of anti-ragging committee

**File No. F 6 5.1.13**

B. List of instances reported during the last four years and what action has been taken

in these cases

**No ragging case reported**

5.1.14 Details of the cooperation rendered by parents, industry and its stakeholders to ensure the overall development of its students

- ✓ Industries help by giving permissions and to explain the processes and technologies used in industrial experts during their field visits. Also Industrial experts come for lectures in the department and discuss the issues related to energy and environment on specific processes and system performances.
- ✓ Training and jobs are provided to students with the cooperation of Stakeholders.
- ✓ Industrial experts and Stakeholders cooperate also in modifications in curriculum every year by providing their suggestions and expert opinion.

5.1.18 A. List of participation of women students in intra- and inter-institutional sports competitions and cultural activities

**File No. F 6 5.1.18**

B. List of participation of women students in intra- and inter-institutional sports competitions and cultural activities

**File No. F 6 5.1.18**

**5.2 Student Progression**

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

Most of the students after passing M. Tech and M. Phil prefer to join Consultancy organizations/Industries. However, few M. Phil students recently joined Ph.D. programmes.

| Student progression | Percentage against enrolled |
|---|---|
| UG to PG | |
| PG to M.Phil. | |
| PG to Ph.D. | **5 %** |
| Ph.D. to Post-Doctoral | **18%** |
| Employed<br>• Campus selection<br>• Other than campus recruitment | 95% |
| Entrepreneurs | Nil |

School faculty approach to the different organizations for training and later on these Students are taken in jobs in the same organizations.

5.2.2 Programme-wise pass percentage during the time span stipulated

The course completed by students in stipulated time

**M. Tech (energy Management) : 2 years**

| Name of the Course (refer to question no. 4) M.Tech | Selected Male | Female | Pass percentage Male | Female |
|---|---|---|---|---|
| 2007 | 11 | 02 | 100% | 100% |
| 2008 | 13 | 01 | 100% | 0% |
| 2009 | 11 | 03 | 100% | 100% |
| 2010 | 14 | 03 | 88% | 100% |
| 2011 | 13 | 05 | 100% | 100% |
| 2012 | 11 | 05 | 100% | 100% |

M. Phil Students passed in stipulated time period.

**M. Phil Energy and Environment: 1 year**

| Name of the Course (refer to question no. 4) M.Phil | Selected Male | Female | Pass percentage Male | Female |
|---|---|---|---|---|
| 2007 | 05 | 08 | 100% | 80% |
| 2008 | 08 | 03 | 87.5% | 100% |
| 2009 | 03 | 02 | 100% | 100% |
| 2010 | 04 | 05 | 100% | 100% |
| 2011 | 02 | 04 | 100% | 100% |
| 2012 | 03 | 02 | 80% | 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.

**NET Qualified Students**

| Student name | Year | NET |
|---|---|---|
| **Apurva** | 2012 | UGC NET (Lectureship) |
| **Vinay Kumar Singh** | 2012 | UGC NET (Lectureship) |
| **Ku. Bhavisha Sharma** | 2012 | Rajasthan SET (Lectureship) |
| Satyendra Tripathi | 2012 | UGC NET (Lectureship) |

**GATE qualified students**

| Student name | Year |
|---|---|
| **Deepash Singh Chauhan** | 2013 |
| **Gurpreet Kaur Rai** | 2013 |
| **Gaurav Chaudhary** | 2013 |
| **Narandra Patel** | 2013 |
| **Shaishav Sharma** | 2013 |

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

| S.No | Year | Male /Female | Gen | SC | ST | OBC | Others | Total No. of Ph. D Students |
|---|---|---|---|---|---|---|---|---|
| 1 | **2008** | **M**<br>**F** | **-**<br>**01** | **-**<br>**-** | | **01**<br>**-** | | **02** |
| 2 | **2009** | **M**<br>**F** | **01**<br>**-** | **-**<br>**-** | **-**<br>**-** | **-**<br>**-** | **-**<br>**-** | **01** |
| 3 | **2010** | **M**<br>**F** | **01** | | | | | **01** |
| 4 | **2011** | **M**<br>**F** | **01**<br>**-** | **-**<br>**-** | **-**<br>**-** | **-**<br>**-** | **-**<br>**-** | **01** |
| 5 | **2012** | **M**<br>**F** | **01**<br>**01** | **01**<br>**-** | **-**<br>**-** | **-**<br>**01** | **-**<br>**-** | **04** |

**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.

Debate competition prize

5.3.3 A. Gathered data and feedback from pass-out graduates

**File No. F 6 5.3.3**

B. Gathered data and feedback from employers

**File No. F 6 5.3.3**

C. Use of the data for the growth and development of the department

**File No. F 6 5.3.3**

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

- ✓ **Green Calendar for International Energy and Environmental Days**
- ✓ **Khan River cleanings drive**
- ✓ **Plantation Activities**

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

**File No. F 6 5.3.5**

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

**File No. F 6 5.3.5**

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

**SEES Alumni association having an interaction through Internet**

B. Details on its constitution, activities and funding.

Rs 300 per student fee is taken for the alumni association

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

- ✓ Departmental curriculum revision committee
- ✓ Departmental sports and cultural cell

**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

**Vision**

To be a frontline School in specializing in need based research and in developing professionals for energy and environmental solutions

**Mission**

- ✓ To develop and provide world class professionals with excellent analytical, communication skills, and ability to work in the field of Energy and environment

- ✓ To ensure the excellent research work to be competitive internationally and to cater the need of local/regional and national significance in the area of energy and environment;
- ✓ Inculcate professional ethics among youths to serve mankind and society.

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 department's mission statement is very distinct and provides the world class Manpower with capabilities for dealing with energy and environment related issues
The reflection of vision and mission can be seen by assessing the student's employment in nationally and internationally reputed organizations /industries/institutions in India and abroad in the different activities.
The Energy Conservation Act was passed by the Parliament of India in the year 2001 and it has come into force from March 1, 2002. The Act has several features that can substantially contribute to the energy conservation viz. labeling of equipment and applications as per efficiency norms, directing energy intensive and designated consumers to confirm to set energy norms, mandatory energy audits by accredited Energy Auditors, and appointment of Energy Manager. Energy audit has already been made mandatory for industries having connected load more than 500 KVA in many states. It has created a significant demand of trained manpower of Energy Auditors and Energy Managers.
To meet for this requirement and to facilitate the training of engineers/scientists interested in becoming Energy Auditor/Energy Manager/Energy scientists, the School has got the reputation nationally and internationally.
The Students are serving as energy planners, consultants, energy managers ,energy auditors and implementing the small to large projects in Energy (specially in renewable energy systems) and environment. Very Few highlights on projects designed / developed / implemented by students of our School.

- First plasma incinerator for power generation for MSW in India was completed
- Energy Conservation Prize of Rajasthan Government was given to our student.
- 500 MW solar power plants in Pokharan in Rajasthan, student of School was involved in implementation.
- Post of Directors are held in most of the Multinational companies working in Energy and Environment like SGS, Ernest and Young, Kopper etc in different places
- Post of CDM Advisor to ASIAN BANK is also hold by our student
- Our student as Director CDM in Bonn Germany (UNFCC) is also working

6.1.3 Write-up of

* ensuring the organization's management system development, implementation and continuous improvement

For Continuous Improvement in Academic programs, financial budget and its utilization, social activities, research and Trainings & self evaluation of teachers are discussed frequently in Departmental committee. The following activities ensure the development in departmental management system

Discuss in open house of School meeting for better development of the School. All activities are finished within stipulated time period.

- Effective team interaction
- Constructive communication
- Fast Decision making
- open and friendly environment honest communication
- Departmental meetings at regular intervals
- Self Appraisal, PBAS, feedback and suggestions from experts and stakeholders

* interacting with its stakeholders
  - Interaction with stakeholders remains in contact by Phone, e-mails, visits, in conferences, meetings and also invited for lectures in department time to time.

**File No. 1.15 C**

* Reinforcing a culture of excellence
  School has developed a culture of excellence by emphasizing on the following aspects to re enforce a culture of excellence.

  - ✓ Leadership commitment and dedication to execute the vision and mission of the department
  - ✓ Open and sincere discussions about values and ethics in research and education and efforts are made to inculcate these in the students just after the admissions in one day workshop.
  - ✓ Dedicated Faculty works as mentor and work with staff and students together by way of team spirit and harmony.

* identifying organizational needs and striving to fulfill them

  - ✓ Development of **research laboratories** of International Standard
  - ✓ Development of **testing laboratories** for all renewable systems of International Standard
  - ✓ National and International MoU,s and research projects
  - ✓ Start the new M.B.A (Energy Management) and M. Sc in Energy and Environment courses

The more research projects are to be written for latest and high end equipments and instruments for research laboratories.

The formalities for **M.B.A** Course in **Energy Management** are already in process and may be started in one year period. Planning and designing of M.Sc. in Energy and Environment course would be done in future after required infrastructure and other facilities.

6.1.4 Records of Departmental and other committees meetings

**File No.F.7 6.1.4**

6.1.6 Write-up of a culture of participative decisions in the department

All administration and academic decisions are taken and maintained by collective decisions and actions with participation and by sharing the responsibilities by Faculty, staff and students

6.1.7 Record of grooming leadership at various levels

School is working under the leadership of departmental head. The faculty members are also given additional charges of important activities like Research Cell, IQAC, Students Union, UGC Projects , Career Guidance Cell, Grievance Redressal Cell, Anti ragging cell, Women Cell, etc.

6.1.10 Record of knowledge management strategy

Any new segment of knowledge that is received or created at SEES is well disseminated to all levels. Such a sharing of knowledge leads to better learning experiences and evolving of new programmes. Any learning experience by a faculty member who is deputed to attend seminars, workshops or courses outside School are shared in the Faculty Meetings or at the Department meetings. They also submit a report at the Head's office after their return from attending national or international programmes.

The following sets of data have been used for knowledge generation and management.

- Data from the feasibility study helped decide whether or not to offer an academic programme.
- Examination office result analysis helped departments evolve a strategy to enhance the academic performance of students.
- Admission analysis showed the popularity of a programme and accordingly the departments evolved mechanisms to enhance the enrolment or start new courses.
- Output from the feedback of student, aluminizes, eminent personality visiting in the department system helped enhance the course curriculum in the departments and laboratories.

6.1.11 Values Reflected in the Functioning of the College

➢ Contributing to national development

On the academic front, our results show that we continue to maintain high standards of excellence which is proved by placements, academic and research delivery service of students to the nation. The goal of higher education is to equip the individual with knowledge and skills that meaningfully contribute towards meeting society's needs and thereby contribute to the development of the nation. This goal has been embodied in the quality policy of the School and is substantially met through the following means:

- A 25% increase in the sanctioned strength of students is obtained from the top Universities to enhance the Gross enrollment ratio every year.
- The syllabus of all the courses are continually planned and existing ones updated to
    - ✓ Meet societal needs of the industries
    - ✓ Equip students for current trends in research
    - ✓ Enhance employability skills (e.g. by organizing Communication skills & Personality development trainings
- Different teaching methods ensure that the core competencies of students are developed making them employable
- Field visits and internship based on live projects also help students extend their academic learning to society.
- The faculty are trained periodically in the advances of their core disciplines as well as to enhance their professionalism to meet the challenges of the trends in higher education

* Fostering global competencies among students

Global competencies involve effective communication skills, leadership qualities, creativity, interpersonal skills, higher level of emotional quotient and being a good team player. The following measures foster the global competency of students:

- Continuous updating of curriculum in keeping with global standards.
- Project works enable students to enhance and develop their creativity. The project report presentation and the ensuring viva voce develop their communication skills
- Collaboration with different Industries and other Universities help the students to develop global competencies through exchange programmes, study abroad programmes and collaborative projects.
- Leadership is developed at the School level, (class representatives, and Programme/event volunteers) and at the college level (Student council

members). At all levels of leadership, students work as teams and so they are trained as good team players as they plan and organize creative programmes.

* Inculcating a sound value system among students

The importance of a value system to guide students as they step into a world of work is recognized by the School and is incorporated in the motto of the college as well as in its mission statement. The college adopts several means to inculcate those values that are needed to live in a pluralistic society.

- The School conducts a number of programmes on Water Conservation, Energy Efficiency, Environmental Days Celebration, Personality Enhancement Programme, etc to inculcate a sound value system among students. Students regularly participate in Blood Donation Camp.
- Courses on a wide variety of subjects dealing with societal and environmental issues such as "Environmental Impact Assessment", "Waste Management" etc. inculcate the much needed values of socio-cultural tolerance and eco-consciousness. The courses include field trips that help students have a feel of the issues around it.
- A spirit of generosity, love for nature and wildlife is felt and expressed through various celebrations like Earth Day, Environment Day etc.

* Promoting use of technology

In a fast changing world, technology is not merely for communication. It can significantly improve the efficiency of the teaching-learning-testing process as also the process of administration and management.

- e-Governance:
  - ✓ During admissions, application is uploaded in the website for online submission. (www.mponline.nic.in)
  - ✓ The IT Center of University compiles and keeps records of Projects undertaken by students, R&D Projects, Workshops/Seminars organized by School, placement of students and faculty details. (Website: http://www.sees.dauniv.ac.in)
- All the classrooms and Seminal Hall is equipped with Projector with latest technology, Computers with internet connection to provide the audio-video sessions.

* Quest for excellence

The college, since its inception, has been striving towards excellence. Realizing that this is an ongoing process the college takes continuous steps to improve on all fronts.

- Lectures and workshops for the faculty and students are arranged with eminent speakers from the nation.

- Feedback to faculty is given every year with appropriate inputs for further improvement.
- Memoranda of Understanding (MoUs) have been signed with various foreign universities for exchange programmes, collaborative projects and sharing of research work.
- Young faculty and students are motivated towards research (granting leave for faculty and stipend for students).
- All research papers sent for outside presentations need to be screened internally so as to ensure the quality.
- Leadership training is given frequently for faculty members in manageable groups.

**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

* Enhancing Teaching and learning
  - Departments to benchmark with international departments of repute
  - Introduction of MBA with unique specialization in the Energy Management.
  - Modular teaching with Integrated Curricular from inter discipline department of the University
  - The college to have at least 20% success in UGC-NET, CSIR Examination, at National Level
* Enhancing Research and development
  - Formation of a Research Ethics Committee
  - Each Professor/ Reader to have at least one major ongoing project
* Enhancing Community engagement
  - Formalizing School interface by signing MoU with at least one developed country University
  - Reformulation of MoU with Kun Shan University, Tainan, Taiwan
* Enhancing Human resource planning and development
  - To organize at least one national workshop/ Seminar on green energy Technologies on par withInternational Standards
  - 2 training programmes, on use of Solar energy devices and operation and maintenance of biogas plant
  - Formalizing Mentoring for first year students
* Enhancing Industry interaction
  - Finalizing Institute – Industries forum
  - Signing at least 1 MoUs per year with Industries /NGOs
* Enhancing Internationalisation
  - On line forum to discuss Energy & Environmental issues around the globe

- An institutional blog to discuss local Energy & Environmental issues

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

- The organizational structure of School of energy and Environmental Studies involves leadership at several levels. Such a system, being decentralized has been highly effective in taking decisions and implementing them.
- Both the top down and the bottom up approach are used to initiate new plans / suggestions.
- The institution has the culture of respecting the suggestion/ feedback given by any member of the School community.
- The plans proposed are discussed at the respective committees, fine tuned and then implemented.
- Before finalizing any plan, the need for implementation, the resources involved and the possible road blocks are thoroughly looked into.

6.2.3 Write up of functioning independently and autonomously and ensure accountability

Ordinance 31 provides academic and evaluation function autonomous to the school. University conveys appreciation of the work of Dr. S P Singh. Performa based assessment (prescribe by UGC) is filled at the end of every year by each faculty. Self appraisal and PBA form are assessed by University. Remarks are conveyed to the faculty. So for no adverse remarks has been communicated for the faculty of the School

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

*One case filed by Daily Wage employee to retain his services in department. Case is under process in court.*

6.2.6 Performance audit of the department by external experts

**Planned in July 2013**

**6.3 Faculty Empowerment Strategies**

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

- Strengths and weakness are communicated to the teachers. Teachers are motivated for improvements.

6.3.3 List of teachers availing welfare schemes available for teaching and non-teaching staff.

1 Dr S.P.Singh
2 Dr R.N.Singh

3 Dr Rubina Chaudhary
4 Ms. Manju Soni
5 Mr Vimlesh Shrivastava

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

- Regular revision of the syllabus
- Regularly update the full functional web site of University.
- Transparency in the admission and examination process. The admission list is prepared by different board members. The final marks are complied of four members of a board and then merit list displayed on the notice board & internet same day.
  The examination copies are shown to the students before the comprehensive viva voce.
- Use of ICT in all the class rooms.
- Field visits are organized for the students on alternative Saturday.
- Seminar is organized every week for students presentation on specific topics.
- Extra coaching for the weak and advance students are held by individual teacher.
- Syllabus planning document distributed to all students in each semester.
- Continuous evaluation and monitoring through regular tests, assignments, tutorial, and projects.
- The state government and central government norms for reservation and qualification strictly followed

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

The course completed by students in stipulated time

**M. Tech (energy Management) : 2 years**

| **Name of the Course** (refer to question no. 4) M Tech | **Selected** Male | Female | **Pass percentage** Male | Female |
|---|---|---|---|---|
| 2007 | 11 | 02 | 100% | 100% |
| 2008 | 13 | 01 | 100% | 0% |
| 2009 | 11 | 03 | 100% | 100% |
| 2010 | 14 | 03 | 88% | 100% |
| 2011 | 13 | 05 | 100% | 100% |
| 2012 | 11 | 05 | 100% | 100% |

M. Phil Students passed in stipulated time period.

**M. Phil Energy and Environment: 1 year**

| Name of the Course (refer to question no. 4) M. Phil | Selected Male | Female | Pass percentage Male | Female |
|---|---|---|---|---|
| 2007 | 05 | 08 | 100% | 80% |
| 2008 | 08 | 03 | 87.5% | 100% |
| 2009 | 03 | 02 | 100% | 100% |
| 2010 | 04 | 05 | 100% | 100% |
| 2011 | 02 | 04 | 100% | 100% |
| 2012 | 03 | 02 | 80% | 100% |

Gender audit reveals no significant difference in pass percentages

## 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.

- Centralized system for **Financial Management**
- University maintain the Records

6.4.5 Efforts taken by the department for resource mobilization.

*Research and consultancy projects were brought for resources to build up facilities for research and academic programs.*

6.4.6 Record of endowment funds created

- University centrally creates endowment funds for the faculty.

## 6.5 Internal Quality Assurance System

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

Internal Quality Assurance cell was established in 2008 in the department

The IQAC committee of School planned the following activities in the month of June every year for next year and report submitted to university

**5.** Academic Activities:
  - **(a)** Curricular Aspects
  - **(b)** Teaching-Learning and Evaluation
  - **(c)** Research Activities
  - **(d)** Consultancy Activities

**6.** Infrastructure
**7.** Library: Learning Resource
**8.** Student Support and Progression
**9.** Governance and Leadership
**10.** Innovative Practices

Feedbacks are regularly taken. Analysis of student's feedback is placed on University website.

6.5.2 Internal workshops to improve teaching, learning and evaluation

I*nternal workshops are conducted regularly in the department. University organized 4 workshops in 2012-13*

CBCS August 15, 2012

September 26, 2012

May 10, 2013

June 15, 2013

6.5.3 Record of continuously review the teaching learning process

- Curriculums are regularly revised

**File No. F 7 6.5.3**

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

- University has made 8 Task Force. They are working in different area

## CRITERIA VII: INNOVATIONS AND BEST PRACTICES

### 7.1 Environment Consciousness

7.1.1 Department Area Green Audit details

**Energy Efficient Building Design**

**Features**

- ✓ East –west long orientation: Minimum cooling load in summer and maximum heat gain in winter
- ✓ Hollow walls: Reduction in cooling and heating load in summer and winter
- ✓ South wall windows for maximum solar heat gain in winters
- ✓ North wall window designs for proper lighting.
- ✓ Exact overhang sizes to cut direct radiation gain into the building
- ✓ Light colours on outside walls for minimum heat gain
- ✓ Light shaft for lighting
- ✓ Reflection from overhangs top white tiles to roof inside the building
- ✓ Passive cooling tower to cool /reduce Air conditioning load whole building in Summer

**Energy efficient lighting, Air conditioners and other gadgets**

The following Energy efficient lighting and Air conditioners are installed for use and demonstration.

- ✓ T5 (26 W) tube lights,
- ✓ CFL's,
- ✓ LED lights for inside and outdoor lighting,
- ✓ Metal Halide fixtures,
- ✓ Induction lighting systems
- ✓ Energy efficient Five Star and three star Air conditioners are installed in the building
- ➢ Flat LCD screens installed with computers in replace of old CPU.

**Water Conservation**

- ✓ Roof harvesting system based on rock fracturing technique was installed.
- ✓ Sprinklers are installed for gardens irrigation.
- ✓ Water wastages is minimized by checked regularly the leakages by maintenance.

**Waste Recycling Minimization**

- ✓ Use of Paper is minimized by using more electronic communication.
- ✓ Organic Solid waste is converted to compost by **vermi composting method**.

**Renewable Energy Systems**

- ✓ 5 $kW_p$ Photovoltaic power plant to meet the maximum demand of the department
- ✓ 2 cu meter biogas plant for departmental kitchen and for demonstration
- ✓ Water heating system c also coupled to kitchen for hot water requirements as tea making etc.

**Reuse of Resources**

- ✓ Composted slurry and composed manure from vermin composting systems are used in gardening and plantation in the department as well as in the university.

7.1.2 Departmental initiative to make the campus eco-friendly?

* Energy conservation
  - ✓ Energy Audit of all departments are done by the School faculty and students. Reports are to be submitted
* Use of renewable energy
  - ✓ 5 $kW_p$ Photovoltaic power plant to meet the maximum demand of the department
* Water harvesting
  - ✓ Roof harvesting system based on rock fracturing technique was installed
* Check dam construction
  - ✓ Small Pond is to be constructed for Water Recharging for University.
* Efforts for Carbon neutrality
  - ✓ Yes, Energy and water conservation in building in addition to gardens and plantation.
* Plantation
  - ✓ More than 500 Trees, shrubs and flower plants are grown in and around the School building.
* Hazardous waste management
  System to be installed
* e-waste management
  e-waste collected and sold to Government approved vender.
* any other (please specify)

**File No. F 8 7.1.2**

**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

- ✓ Involvement of students in frontline research and consultancy projects making better professionals in the field of Energy and Environment. It is observed that they are well trained with enhanced practical knowledge and fully developed skills in energy auditing and conservation, design of renewable energy systems and environment assessment projects. They learn about the practical design aspects, data collection and measurements, analysis of data, results interpretation and appropriate recommendations for future and preparation of Detailed Project Report (DPR). It is also acknowledged by us and stakeholders.

**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.

- Regular revision of the syllabus
- Regularly update the full functional web site of University.

- Transparency in the admission and examination process. The admission list is prepared by different board members. The final marks are complied of four members of a board and then merit list displayed on the notice board & internet same day.
  The examination copies are shown to the students before the comprehensive viva voce.
- Use of ICT in all the class rooms.
- Field visits are organized for the students on alternative Saturday.
- Seminar is organized every week for students presentation on specific topics.
- Extra coaching for the weak and advance students are held by individual teacher.
- Syllabus planning document distributed to all students in each semester.
- Continuous evaluation and monitoring through regular tests, assignments, tutorial, and projects.
- The state government and central government norms for reservation and qualification strictly followed.

**Format for Record of Best Practices of the department**

1. **Title of the Practice**
   This title should capture the keywords that describe the practice.
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)?
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)?
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)?
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.
6. **Problems Encountered and Resources Required**
   Please identify the problems encountered and resources required to implement the practice (in about 150 words).
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).