

PES Modern College of Arts, Science and Commerce, Ganeshkhind, Pune
Department of Microbiology
Annual Report 2016-17

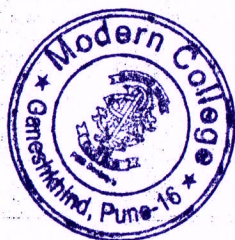
Workshop/Seminar organized:

Training Workshops

| Sr. No | Title | Resource persons | Class & No. of students benefitted | Conducted by (name of the department) | Dates |
|--------|---|---|---|---|---------------------------------|
| 1 | DBT-STAR sponsored Physicochemical and Microbiological analysis of Soil | Mr. Mihir Thatte, Vaintey Chem Products Pvt. Ltd. and Mr. Shreyas Kumbhare (ICMR-SRF, MCC-NCCS) | S.Y. B. Sc. Microbiology students (21) | Microbiology, Dept, MCASC, GK | 24/06/2016 and 25/06/2016 |
| 2 | DBT-STAR sponsored Biochemical techniques and instrumentation | Dr. Sougata Ghosh, Dr. Manasi Tukdeo (MCASC, GK) and Mr. Shreyas Kumbhare (ICMR-SRF, MCC-NCCS) | T.Y. B. Sc. Microbiology students of Dept, MCASC, GK, MCASC, Shivajinagar and Abasaheb Garware College, Pune (45) | Microbiology, Dept, MCASC, GK | 01/07/16, 02/07/16 and 04/07/16 |
| 3 | DST FIST sponsored Research Induction Program | Dr. Neelima Kulkarni & Dr. Sougata Ghosh (Microbiology), Dr. Vinay Kumar (Biotechnology), Dr. R. Kshirsagar (Zoology) | M. Sc. students of Microbiology, Zoology & Biotechnology | Dr. Vinay Kumar (Biotechnology), Dr. R. Kshirsagar (Zoology), Mrs. Sneha Ogale (Microbiology) | 06/09/16 and 07/09/16 |

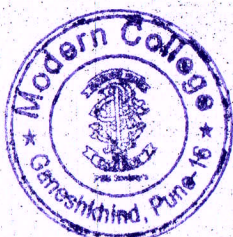
Training course conducted:

| Sr. no. | Title | Status |
|---------|--|---|
| 1 | Certificate Course: "Applied Techniques in Industry and Laboratories". Coordinator: Dr. Mrs. Kavita Parekh, Assistant Coordinator: Mr. Prasad Deshmane | Sanctioned by UGC; started in academic year (2012-13) |



Educational and Industrial Visits:

| Sr. No. | Class | Date of visit | Institute/ Industry visited | What seen | No of students | Accompanying teachers |
|---------|----------|---------------|---|---|----------------|--|
| 1 | MSc I | 07.10.16 | MCC-NCCS, Sai Trinity Building, Pune | Automated Gene Sequencers, MALDI & FAME facilities | 43 | Dr. Manasi Tukdeo, Mr. Shrikant Bhute, Ms. Yashashree Waikar |
| 2 | MSc II | 14.10.16 | National Centre for Cell Science, Pune | FACS facility | 42 | Dr. Sougata Ghosh, Ms. Yashashree Waikar, Ms. Amruta Godbole |
| 3 | M.Sc. II | 15.10.16 | PMC's Sewage Treatment Plant, near Dr. Naidu Hospital, Pune | Primary and secondary treatment plant, Grit removal, chlorination and aeration tank | 42 | Dr. Kavita Parekh, Dr. Sougata Ghosh, Ms. Amruta Godbole |
| 4 | TYBSc | 6.02.17 | Janakalyan Rakta Pedhi | functioning of a Blood Bank: Selection of donor, blood grouping by tube and gel technique, separation and maintenance of blood and its components, Automated ELISA for detection of HBV, HCV, HIV, NAT, disposal of | 26 | Mrs. Sneha Ogale |



| | | | | | | |
|---|--------------|----------|---|---|----|---|
| | | | | blood and contaminated materials. | | |
| 5 | TYBSc | 13.02.17 | Indian Institute of Science Education And Research (IISER) Pune | instrumentation for biochemistry and biotechnology, ultracentrifuge, FACS, X-ray, PCR, Nanodrop | | Dr. Neelima Kulkarni |
| 6 | S. Y. B. Sc. | 20-2-17 | Vadgaon Jalshuddhi Kendra | Water purification plant | 59 | Mrs. Gauri Bhagat , Miss Yashashree R. Waikar, Mrs. Trupti Kulkarni |
| 7 | TYBSc | 23.02.17 | Agriculture College, Shivajinagar, Pune | Production of Biofertilizer | | Mrs. Anupama Sonawane |
| 8 | MSc I | 28.02.17 | National Centre for Cell Science, Pune | Confocal Microscope | | Dr. Neelima Kulkarni, Dr. Kavita Parekh |

Guest lectures: 2016-17

| Sr. No | Dates | Topic | Class | No. of students | Resource person(s) |
|--------|---------------------|--|---------------------------------|-----------------|--|
| 1 | 05.08.16 | AMI lecture on "Journey of HiMedia" at Amphitheatre, Fergusson College, Pune | M. Sc. II students | 21 | Dr. Vishal Warke Director, Hi Media |
| 2 | 19.9.16 and 20.9.16 | Non-parametric tests (Run test, Sign test, | MSc I students at Microbiology, | 43 | Dr. Santosh Sutar, Assistant Director/ Assistant |



| | | | | | |
|---|----------|---|----------------------------|----|---|
| | | Wilcoxon's signed Rank test, Mann-Whitney test) and its problem solving | Dept, MCASC, GK. | | Professor, Yashvantrao Chavan School of Rural Development, Shivaji University, Kolhapur |
| 3 | 07.10.16 | Next Generation Sequencing | MSc I students at MCC-NCCS | 43 | Dr. Yogesh Shouche, Scientist G, MCC-NCCS |
| 4 | 15.10.16 | Dr. APJ Abdul Kalam on the occasion of Reading Inspiration day | MSc I students | 23 | Dr. Ujlamkar, HOD of Chemistry, Modern College, Shivajinagar |
| 5 | 18.02.17 | Egg Inoculation Technique | TYBSc & MSc | 69 | Dr. Swapnil Narale, Serum Institute of India Ltd., Pune |

Staff achievements:

1) Mrs. Sneha Ogale:

- 1) **Member of Organizing team**, Two day International Symposium on Microbial Ecology and Systematics, conducted on 16.9.16 and 17.9.16, organized by MCC-NCCS and AMI (Pune Unit) at NCL, Pune
- 2) **Selected as Trainer** for the series of state-level Pedagogy workshops for school science teachers conducted jointly by IISER-Pune with the Maharashtra state government. The workshops were conducted from 4th Oct to 7th Oct 2016 and 22-24 Nov 2016.
- 3) **Selected** for level2 RBPT (Research Based Pedagogical Tools) Workshop conducted jointly by IISER-Pune and It was supported by DBT, MHRD, British Council and Newton-Bhabha Fund.
- 4) **Member:** Website Updation Committee.
- 5) **Member of Alumni Association.**
- 6) **Life member** of Association of Microbiologists India.
- 7) **Life member** of Society of Biological Chemists (India).
- 8) **Executive Council member** of Association of Microbiologists India (Pune unit).

2) Mrs. Anupama Sonawane:

- 1) Publications in peer reviewed journals:

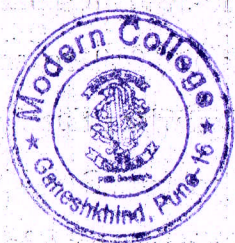


Anupama Sonawane, Manali Mahajan and Sonali Renake, 'Antifungal Activity of a Fungal Isolates against Pomegranate Wilt Pathogen *Fusarium* Int.J.Curr.Microbiol.App.Sci.2015.Special Issue-2: 48-57.

- 2) Attended **National conference on Faunal Diversity: Assessment and Consevation FDAC-2016**, sponsored by BCUD, Savitribai Phule Pune University, Pune on 22nd and 23rd January 2016.
 - 3) Organized 15th State Level Microbiological Contest and Microbio Olympiad organized at Shirpur.
 - 4) Life member of Association of Microbiologists India.
 - 5) Member of F.Y.B.Sc. admission committee
- 3) **Dr. Mrs. Neelima Kulkarni:**
- 1) Participated and Completed **Refresher course in Environmental Sciences (Microbiology)** conducted by Department of Environmental Sciences, SPPU and ASC, SPPU during 1st -21st Oct 2015.
 - 2) Attended **National conference on Faunal Diversity: Assessment and Consevation FDAC-2016**, sponsored by BCUD, Savitribai Phule Pune University, Pune on 22nd and 23rd January 2016.
 - 3) Participated in and won 1st prize for poster presented at **International Conference on 'Innovative Trends in Chemical, Physical and Biosciences (ITCPB 2016)'**, organized by Dept. of Microbiology, Annasaheb Magar Mahavidyalaya, Hadapsar Pune, on 9/02/16 and 10/02/16.
 - 4) **Chairperson:** Result analysis Committee.
 - 5) **Chairperson:** NAAC criterion III Committee.
 - 6) **Life member** of Association of Microbiologists India.
 - 7) **Life member** of Society of Biological Chemists (India).

Publications in peer reviewed journals:

- 4) **Neelima Kulkarni and Sneha Ogale**, (2015) 'ICT in Higher Education: A case study'. Dnyanmay; 1: 50-54.



- 5) **Neelima Kulkarni, Yogita Patil and Gayatri Sahasrabuddhe (2016) 'Screening of Actinomycetes for production of anticancer enzyme L- asparginase' Abstract published in e-book of abstracts. ISBN**
- 4) **Mr. Prasad Deshmane:**
- 1) **Participated in National Conference on Faunal Diversity: Assessment and Conservation (FDAC-2016), 22nd and 23rd January, 2016. Modern College of Arts, Science and Commerce, Ganeshkhind, Pune**
 - 2) **Co-coordinator for Certificate Course: "Applied Techniques in Industry and Laboratories".**
 - 3) **Incharge SCIENCE ASSOCIATION**
 - 4) **Committee member SWARMADHURI, classical singing competition**
- 5) **Dr. Kavita Parekh:**
- 1) **Attended Gene Annotation workshop on 19/10/15 held by Dr. Dheeraj Dhotre, and team, organized by AMI (Pune Unit) and MCC-NCCS.**
 - 2) **Participated in National Conference on Faunal Diversity: Assessment and Conservation (FDAC-2016), 22nd and 23rd January, 2016. Modern College of Arts, Science and Commerce, Ganeshkhind, Pune.**
 - 3) **Coordinator for Certificate Course: "Applied Techniques in Industry and Laboratories".**
 - 4) **Life member of Association of Microbiologists India.**
 - 5) **Worked as in-charge of 'Elocution competition committee' during youth week.**
- 6) **Mr. Sougata Ghosh :**
- 1) **First prize in oral presentation in Third International Conference on Nanotechnology for Biological and Biomedical Applications (Nano-Bio-Med 2015); Indian Institute of Technology (IIT Bombay), Mumbai, India.**
 - 2) **Poster Presented in International Conference of new ideas in cancer - Challenging dogmas, 26th to 28th February, 2016. Tata Theatre, National Centre of Performing Arts, Mumbai.**
 - 3) **Poster Presentation in National Symposium on Medical Biophysics, 25th and 26th September, 2015, Department of Physics, University of Pune, Pune.**



- 4) **Poster Presentation in National Conference on Faunal Diversity: Assessment and Conservation (FDAC-2016)**, 22nd and 23rd January, 2016. Modern College of Arts, Science and Commerce, Ganeshkhind, Pune.

Publications in peer reviewed international journals:

1. **Ghosh, S.,** More, P., Nitnavare, R., Jagtap, S., Chippalkatti, R., Derle, A., Kitture, R., Asok, A., Kale, S., Singh, S., Shaikh, M.L., Ramanamurthy, B., Bellare, J., Chopade, B.A. (2015) Antidiabetic and antioxidant properties of copper nanoparticles synthesized by medicinal plant *Dioscorea bulbifera*. *Journal of Nanomedicine and Nanotechnology*. S6: 007. doi:10.4172/2157-7439.S6-007
2. **Ghosh, S.,** Nitnavare, R., Dewle, A., Tomar, G.B., Chippalkatti, R., More, P., Kitture, R., Kale, S., Bellare, J., Chopade, B.A. (2015) Novel platinum-palladium bimetallic nanoparticles synthesized by *Dioscorea bulbifera* : Anticancer and antioxidant activities. *International Journal of Nanomedicine*.10:1- 4.
3. **Ghosh, S.,** Parihar, V. S., Dhavale, D. D., Chopade, B. A. (2015) Commentary on therapeutic potential of *Gnidia glauca*: A novel medicinal plant. *Medicinal Chemistry*. 5(8):351-353.
4. **Ghosh, S.,** Jagtap, S., More, P., Shete, U. J., Maheshwari, N. O., Rao, S. J., Kitture, R., Kale, S., Bellare, J., Patil, S., Pal, J. K., Chopade, B. A. (2015) *Dioscorea bulbifera* mediated synthesis of novel Au_{core}Ag_{shell} nanoparticles with potent antibiofilm and antileishmanial activity. *Journal of Nanomaterials*. 2015: Article ID 562938.
5. **Ghosh, S.,** More, P., Derle, A., Kitture, R., Kale, T., Gorain, M., Avasthi, A., Markad, P., Kundu, G. C., Kale, S., Dhavale, D. D., Bellare, J., Chopade, B. A. (2015) Diosgenin functionalized iron oxide nanoparticles as novel nanomaterial against breast cancer. *Journal of Nanoscience and Nanotechnology*. 15:1-9.
6. **Ghosh, S.,** Parihar, V. S., More, P., Dhavale, D. D., Chopade, B. A. (2015) Phytochemistry and therapeutic potential of medicinal plant : *Dioscorea bulbifera*. *Medicinal Chemistry*. 5(4): 154-159.

Publications in Conference Proceedings:

1. **Ghosh S.,** Derle A., Kitture R., Kale S.N., Chopade B.A. Promising magnetic nanoparticles functionalized with diosgenin inducing apoptosis against breast cancer. 26th to 28th February, 2016. A conference of new ideas in cancer -



Challenging dogmas, Tata Theatre, National Centre of Performing Arts, Mumbai. (Poster presentation) pp. 65.

2. Luikham S., **Ghosh S.**, Chopade B.A. Promising magnetic nanoparticles functionalized with diosgenin as novel anticancer nanomedicine against breast cancer. 26th and 27th February, 2016 National Conference on Innovative Research in Life Science (IRLS), Sinhgad College of Science, Pune. (Poster presentation)
3. Luikham S., Jadhav S.P., Sawant H.S., Ogale S.S., **Ghosh S.** Antimicrobial synergy and antidiabetic activity of *Litchi chinensis* peel extracts. 22nd and 23rd January, 2016. Faunal Diversity: Assessment and Conservation (FDAC-2016). Modern College of Arts, Science and Commerce, Ganeshkhind, Pune.
4. **Ghosh S.**, More P., Kitture R., Kale S., Bellare J., Chopade B.A. Diosgenin functionalized magnetic nanoparticles as novel apoptotic inducers against breast cancer. 1st to 4th December, 2015. Third international conference on nanotechnology for biological and biomedical applications (Nano-Bio-Med 2015), Indian Institute of Technology (IIT Bombay), Mumbai, India. (Oral presentation-Contributory talk).
5. **Ghosh S.**, Jagtap S., More P., Kitture R., Kale S., Bellare J., Chopade B.A. Novel Au_{core}Ag_{shell} nanoparticles synthesized by *Dioscorea bulbifera* as potent biofilm inhibitor and leishmanicidal nanomaterial. 1st to 4th December, 2015. Third international conference on nanotechnology for biological and biomedical applications (Nano-Bio-Med 2015), Indian Institute of Technology (IIT Bombay), Mumbai, India. (Poster presentation)
6. More P., **Ghosh S.**, Kitture R., Asok A., Kale S., Bellare J., Chopade B.A. Biogenic copper nanoparticles as potent α -amylase and α -glucosidase inhibitor with free radical scavenging potential. 1st to 4th December, 2015. Third international conference on nanotechnology for biological and biomedical applications (Nano-Bio-Med 2015), Indian Institute of Technology (IIT Bombay), Mumbai, India. (Poster presentation)
7. Kitture R., Kale S., More P., **Ghosh S.**, Avasthi A., Chopade B.A. Rutin functionalized Fe₃O₄ for cancer therapeutics. 1st to 4th December, 2015. Third international conference on nanotechnology for biological and biomedical applications (Nano-Bio-Med 2015), Indian Institute of Technology (IIT Bombay), Mumbai, India. (Poster presentation)



8. Kitture R., Avasthi A., Ghosh S., Kale S., Chopade BA. Synergistic effect of iron oxide (Fe_3O_4) upon conjugation with rutin for bio-applications. National Symposium on Medical Biophysics, 25th and 26th September, 2015, Department of Physics, University of Pune, Pune. (Poster presentation) pp. 85.

Member of Editorial Board/Reviewer's Team

- 1) International Journal of Advances In Engineering Research (IRA Publications).
- 2) International Journal of Research in Science and Technology (IRA Publications).
- 3) Chemotherapy Research and Practice (Hindawi Publications)
- 1) Arabian Journal of Chemistry (Elsevier).

Social Activities :

- 1) Organized Republic Day celebration with street children – Food and cloth distribution, painting and learning initiatives on 26th January, 2015 at Pune University Signal.
 - 2) Organized Toys from Trash workshop with the street children on 25th December, 2015 at Pune University Signal.
 - 3) Delivered Lecture on “Benefits of organic farming and potential of medicinal plants as complementary and alternative medicine” On 25th and 26th April, 2015 at Pani Panchayat, Saswad, Maharashtra.
- 7) Gauri Bhagat
- 1) **Participated in National Conference on Faunal Diversity: Assessment and Conservation**
(FDAC-2016), 22nd and 23rd January, 2016. Modern College of Arts, Science and Commerce,
Ganeshkhind, Pune.
 - 2) Co-Coordinator for Certificate Course: “**Applied Techniques in Industry and Laboratories**”.
 - 3) Organized 15th State Level Microbiological Contest and Microbio Olympiad organized at Shirpur.



4) Class teacher of SYBSc 2015-16 class

8) Dr. Manasi Tukdeo

- 1) Participated in National Conference on Faunal Diversity: Assessment and Conservation (FDAC-2016), 22nd and 23rd January, 2016. Modern College of Arts, Science and Commerce, Ganeshkhind, Pune.
- 2) Participated in and won 1st prize for poster presented at International Conference on 'Innovative Trends in Chemical, Physical and Biosciences (ITCPB 2016)', organized by Dept. of Microbiology, Annasaheb Magar Mahavidyalaya, Hadapsar Pune, on 9/02/16 and 10/02/16

9) Mrs. Gauri Dalal

- 1) Member for departmental-level committee for activities under Annual Science Exhibition, 'Anubhuti'

STUDENT ACHIEVEMENTS :

| | | | |
|---|--|------------------------|--|
| 1 | Ms. Yogita Patil and Ms. Gayatri Sahasrabuddhe | M.Sc. II, Microbiology | Best Poster Award in Two days International Conference on Innovative Trends in Chemical, Physical and BioSciences (ITCPB-2016), 9 th and 10 th February, 2016 at Annasaheb Magar Mahavidyalaya, Pune |
| 2 | Ms. Anindita Karkhanis | M.Sc. II, Microbiology | Best Poster Award in Two days International Conference on Innovative Trends in Chemical, Physical and BioSciences (ITCPB-2016), 9 th and 10 th February, 2016 at Annasaheb Magar Mahavidyalaya, Pune |
| 3 | Mr. Soching Luikham | T.Y.B.Sc. Microbiology | Won First Prize in poster presentation at National Conference on Innovative Research in Life Science (IRLS) at Sinhgad College of Science, Pune organized on 26 th and 27 th February, 2016 |



| | | | |
|---|---------------------|----------------------------|--|
| 4 | Mr. Soching Luikham | T.Y.B.Sc. Microbiology | Won First Prize in poster presentation at National Conference on Faunal Diversity: Assessment and Conservation (FDAC-2016) at Modern College of Arts, Science and Commerce, Ganeshkhind, Pune on 22 nd and 23 rd January, 2016. |
| 5 | Ms. Pranali Mehere | F.Y. B.Sc. Microbiology | Won best poster award at 15 th State Level Microbiological Contest and Microbio Olympiad organized at Shirpur. |

- The annual Science Exhibition 'Anubhuti' was organized on 11th January 2016. Students from science departments participated in projects, models, posters, student presentations and rangoli & salad decoration competitions based on scientific themes.

| PROJECT COMPETITION (2015-2016) | | | | |
|---------------------------------|--|---|-----------|--------|
| S.NO. | NAME OF PROJECT | NAME OF PARTICIPANTS | CLASS | REMARK |
| 1 | Microbial Art | Tejas Chauhan Mahesh Chaudhari Shubham Barmukh Rohit Diwate | S.Y.B.Sc. | |
| 2 | Mitosis | Nilesha Bhosale Pooja Gawali Pooja Pathak Priyatosh Chaturvedi | F.Y.B.Sc. | |
| 3 | Drinking water Analysis | Kishori Joshi Trupti Chavan Pradnya Londhe Kajol Gawali Reshma Shinde | S.Y.B.Sc. | |
| 4 | Antidiabetic and antimicrobial activity | Soching Luikham Sharvari Jadhav Harshada Sawant | T.Y.B.Sc. | |
| 5 | Lens Solution | Ashwini Patil Pradnya Ingale | T.Y.B.Sc. | |
| 6 | Antimicrobial activity of Soaps and detergents | Hemangi Deo Rasika Kulkarni | F.Y.B.Sc. | |



| | | | | |
|---|--|--|-----------|--|
| | | Pranali Meher | | |
| 7 | Antimicrobial activity of Coriander, Cloves and Hibiscus | Gauri Tungikar Bhakti Kavitar Aishwarya Chhatre Sakshi Londhe | F.Y.B.Sc. | |

Poster Competition:

| POSTER COMPETITION (2015-2016) | | | | |
|--------------------------------|---------------------------------|--|----------|--|
| Sr.No. | Name of the Poster | Name of the Participants | Class | Remark |
| 1 | Applications of Yeast and Fungi | Mrunali Kamble Ratna Pal | F.Y.B.Sc | |
| 2 | Drugs from endophytic fungi | Anindita Karkhanis Nikita Patil Iqbal Siddiqui | M.Sc II | |
| 3 | Waste to drive | Hanuman Dighole | M.Sc I | |
| 4 | Biofilm | Rucha Datar Yogita Patil Anusha Priya | M.Sc.II | 1 st Prize at College level |

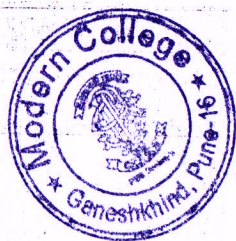
Science Exhibition (2015-16):- Rangoli

(2015-2016):- Salad decoration

| Sr.No. | Theme/Title | Name of Participants | Class | Remark |
|--------|-------------|--|-----------|---|
| S1 | Fermentor | Nihal Chauhan Sonali Nichit | T.Y.B.Sc. | |
| S2 | Autoclave | Neha Vaidya | M.Sc.I | 1 st Prize at Departmental level |
| S3 | Animal cell | Apoorva Joshi Gayatri Sahastrabuddhe | M.Sc.II | 2 nd Prize at Departmental level |

(2015-16):- Models

| Sr.No. | Theme/Title | Name of Participants | Class | Remarks |
|--------|-------------|----------------------|-------|---------|
|--------|-------------|----------------------|-------|---------|



| | | | | |
|---|---|---|-----------|---|
| 1 | Biofuel cell | Sharda Najan Rupali Lende Nikhil Kudale | T.Y.B.Sc. | |
| 2 | Fermentor | Shrikant Pawar Omkar Kholam Shubham Hiwale | F.Y.B.Sc. | 3 rd Prize at Departmental level |
| 3 | Ebola Virus | Nilam Kalbhor Nandini Suryawanshi Surbhi Mishra Priyanka Kanhurkar Prajakta Hande | S.Y.B.Sc. | 2 nd Prize at Departmental level |
| 4 | Working model of Flagella | Prathamesh Parab Pratibha Dohare Varsha Deshmukh Priyanka Mangale | T.Y.B.Sc. | |
| 5 | Model on Wine production | Karan Singh Yadav Preeti Sawarikar Rucha Sawaikar | M.Sc.I | 1 st Prize at Departmental level |
| 6 | Bioluminescence | Kajal Sutar Pooja Ghodekar Monali Sable | T.Y.B.Sc. | |
| 7 | Quorum sensing for Development of Competence in Gram positive bacteria | Hardik Shah Rashmi Ahire | M.Sc.I | |
| 8 | DNA Replication model | Vidhya Jadhav Neelam Dholani Deepa Garia | S.Y.B.Sc. | |

Anubhuti: Total number of participants:- 2015-2016

- 1) Projects = 7(26 students)
- 2) Posters = 4 (9 students)
- 3) Models = 8 (26 students)
- 4) Rangoli = 14 (33 students)
- 5) Salad decoration =3 (6 students)

Total number of participants = 100 students

II) UGC- Career Oriented Course:

The Department of Microbiology, Modern College of Arts, Science and Commerce, Ganeshkhind, Pune-16 offered an UGC sponsored Career Oriented Certificate Course in



“Applied Techniques in Industry and Laboratories”. The syllabus for the same was designed as per UGC guidelines of 20 credits of 15 hours each of which 8 were for field work/project/training. This syllabus was approved by University of Pune. This is the fourth consecutive year of the course with 20 students of T.Y.B.Sc Microbiology who have opted for this course.

The objectives of this course were to bridge the gap between academia and industry, to impart career and market oriented training, to impart soft skills and entrepreneurship skills and to empower students and increase their employability.

The core curriculum of the course was based on three papers:

- I. Techniques in Pathology Laboratories and Blood Banks
- II. Applied Techniques in Industries
- III. Practicals

Lectures and Practicals were conducted by experienced resource persons from industry and laboratories and internal staff.

The highlights of the course are:

- Practical and theoretical training by experts from industry and academics.
- Hands on Training in laboratories: Memorandum of Understanding (MOU)
A MOU was signed on 18/9/2012 with Janakalyan Blood Bank for a period of five years for hands on training program to increase employability of students. Students received a **work experience certificate** for the same from Janakalyan Blood Bank.
- A training on in Food and Water analysis was carried out by Kulkarni Laboratories Quality Management Services

Examinations are conducted and a joint certificate is awarded to the students with name of University of Pune and Modern College, Ganeshkhind. Placement assistance will be offered to students under this course.



Principal
Modern College of Arts, Science
& Commerce, Ganesh Khind,
Pune-16.

14

Sheha Ogale

HEAD
Department of Microbiology
PES's Modern College of Arts, Science
& Commerce, Ganeshkhind, Pune-16.