

**BHASKARACHARYA COLLEGE OF APPLIED SCIENCES
(University of Delhi)**

“STAR COLLEGE SCHEME PROGRESS REPORT”

SUBMITTED TO DBT FOR SECOND COORDINATORS MEETING



Sector -2, Phase I
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Bhaskaracharya College of Applied Sciences

University of Delhi

Star College Scheme: Progress Report

(for up gradation to Star College status/continuation of support at existing level to colleges supported under Star College Scheme)

1. *Name of the College :* **Bhaskaracharya College of Applied Sciences
University of Delhi
Sector-2, Phase-I
Dwarka, New Delhi 110075**

2. *Year of Support :* **December, 2010 onwards till date**

3. *Total grant received during the period of support:*

**Non Recurring grant: Rs 20 lakhs
Total Recurring grant: Rs 16 lakhs approx.**

4. *Recognition by other funding agency :*

- **UGC**
- **WHO (India Office)**
- **Department of Education (Delhi government),**
- **Ministry Of Health and Family Welfare(MHFW)**
- **Department of Science & Technology (DST)**
- **Ministry of Food Processing Industries (MOFPI)**
- **USFDA (India Office)**

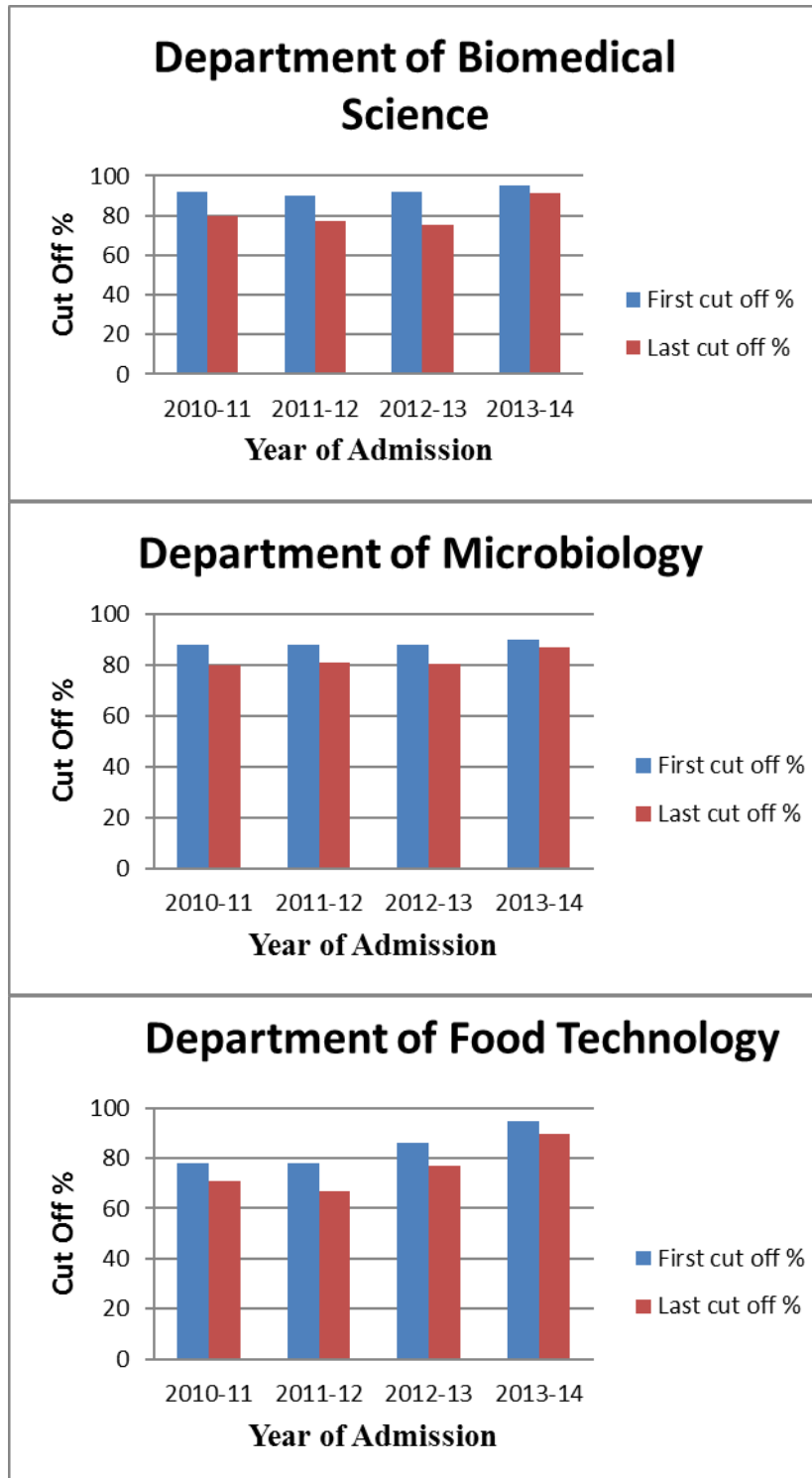
5. *Name of Departments supported :*

- **Biomedical Science**
- **Food Technology**
- **Microbiology**
- **Biochemistry (Allied Department-part of degree courses offered by all above three departments)**

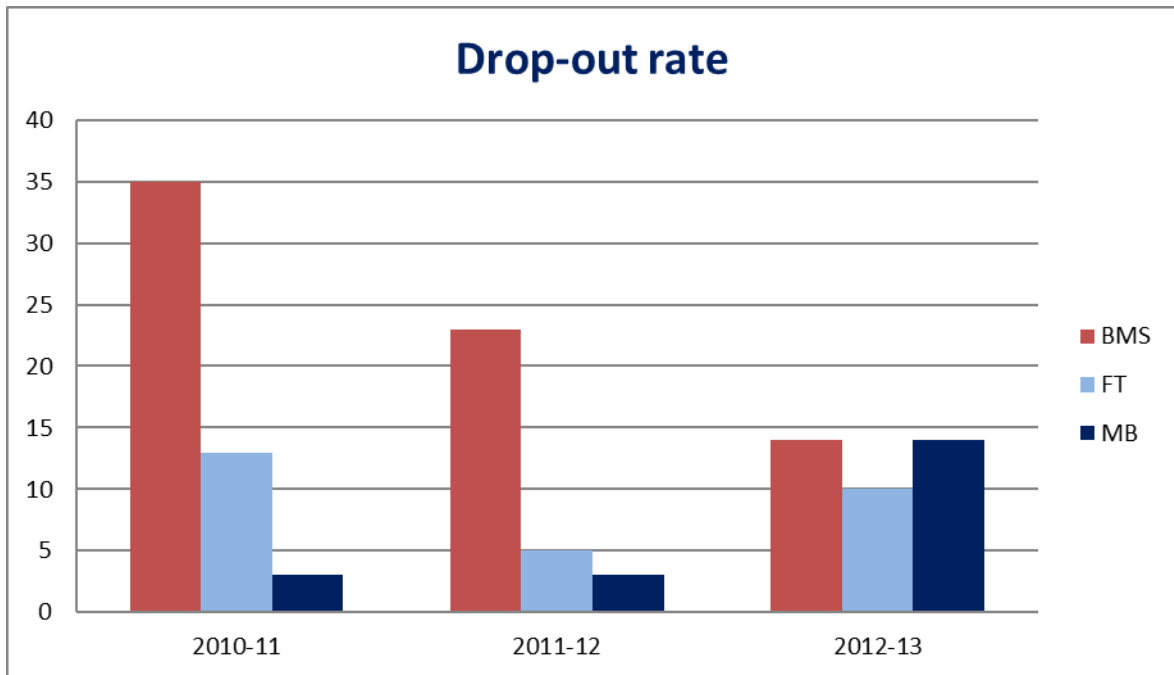
6. Department-wise Performance during the period:

Comparative analysis prior to support and after support in terms of:

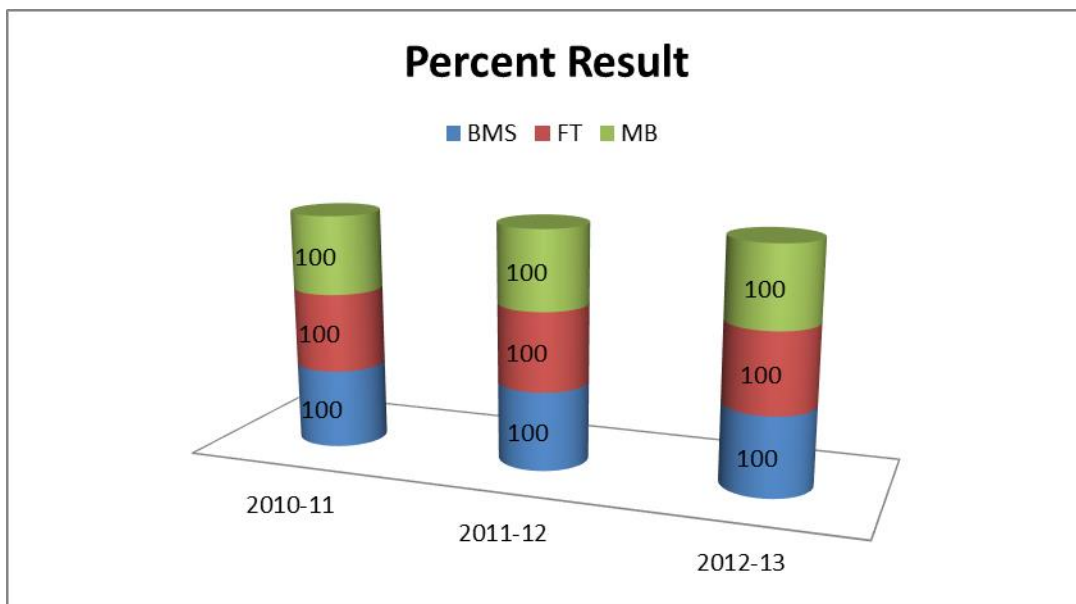
a. Cut off percent for admission



b. Drop-out rate



c. Percent result



d. Position in University

University Positions of Bhaskaracharya College of Applied Sciences			
	2009-2010	2010-2011	2011-2012

	Student Name	Class	Position	Student Name	Class	Position	Student Name	Class	Position
Biomedical Science	Pallavee Khanna	II year	II	Attinder Chadhha	III year	III	Shubham Kesarwani	II year	I
				Charu Aggarwal	I year	II	Charu Aggarwal	II year	II
Food Technology	Shilpi Bhandari	II year	I	Manisha Rawat	I year	I	Manisha Rawat	II year	I
	Ananya Das	III year	III	Akshay Bhalla	I year	III			
Microbiology				Neha Singhal	II year	I	Neha Singhal	III year	II
							Shamsheeda Saifi	III year	II

e. Student enrollment for higher studies

95% of our students generally go for further studies. Students are selected in the following higher Institutes or Research Organizations

Biomedical Science	Food Technology	Microbiology
<ul style="list-style-type: none"> • Jawaharlal Nehru University • Banaras Hindu University • Dr. B. R. Ambedkar Center for Biomedical Research • South Campus, University of Delhi (UDSC) • Jamia Milia Islamia • Jamia Hamdard University • Indian Council of Agricultural Research • Hyderabad University • Indian Institute of Science • The Energy Research Institute • Indraprastha University • Poona University • Madurai Kamaraj University 	<ul style="list-style-type: none"> • Central Food Technology and Research Institute (Mysore) • G.B.Pant University (PantNagar) • Guru Nanak Dev University (Amritsar) • A.N.G.R.A U (Andhra Pradesh) • H.A.U • PAU • Guru Jambheshwar University • N.D.R.I Haryana. • Pondicherry University • Institute of Food Packaging 	<ul style="list-style-type: none"> • University of Delhi • Jamia Millia Islamia • Indian Institute of Science • Banaras Hindu University • TERI University • Kurukshetra University • Kumaon University • Jaipur National University • Sardar Bhagwan Singh PGI of Biomedical Sciences & Research • Jayoti Vidyapeeth Women's University Jaipur • LNJNI National Institute of Criminology & Forensic Science, IP University • Pondicherry University • Goa University

<ul style="list-style-type: none"> • National Centre for Biological Sciences • Indian Institute of Delhi 		<ul style="list-style-type: none"> • VIT Vellore • University of Himachal Pradesh • Indian Institute of Technology
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f. Performance in various competitive exams:

Food Technology students successfully compete in the above mentioned higher education institutes entrance examinations and also the ICAR –JRF exam. In the current year, out of a batch of 32 students, 30 have opted for higher studies

Biomedical Science students have been selected every year in the above mentioned Institutes. This year our University topper, Shubham Kerarwani also topped the combined M. Sc. – Ph. D. examination of Dr. B. R. Ambedkar Center for Biomedical Research, University of Delhi.

The students of **Department of Microbiology** are competing successfully for higher studies in various institutes mentioned above. Mr.Prateek and Mr. Aashish Jain have joined IIT,Mumbai and IIT,Roorkee respectively.

7. Number of workshops held for teachers and students:

Workshops conducted for the Students

Department of Biomedical Science				
S. No	Name of the Workshop/Conference/Seminars	Date / Duration	Name of the Organisers/ Resource Persons	Number of participants
1	Medical Laboratory Techniques	5 th and 6 th January, 2011	Biopack India Ltd	36
2	Basic Techniques of Molecular Biology & Use of microscopic techniques in Biomedical Science	12 th to 16 th Dec, 2011	Dr. Gayatri Prakash, Daulat Ram College	40
3	A Hitchhiker's Guide to Cheminformatics and Drug Discovery	14 th December, 2011	Dr. Jan Wildenhain University of Edinburgh, United Kingdom	60
4	Applications of Fluorescence Spectroscopy in Biomedical Science"	15 th December, 2011	Dr. Madhu Chopra, ACBR, DU	60
5	Techniques of animal handling such as Tubectomy, Hysterectomy and Orchidectomy on laboratory animals	20 th December, 2011	Dr. B. R. Ambedkar Center for Biomedical	30

	such as Wistar rats.		Research, DU	
6	Gene Expression Analysis	11 th to 12 th September, 2012	Dr. Tripti Bhatnagar, Codon Biotech	30
7	Human Papillomavirus in the causation of Human Cancer	19 th February, 2013	Prof. B. C. Das	90
8	Vitamin B12 deficiency: A silent epidemic	19 th February, 2013	Dr. Shantanu Sen Gupta	90

Department of Food Technology

S. No	Name of the Workshop/Conference/Seminars	Date / Duration	Name of the Organizers/ Resource Persons	Number of participants
1	First “Better Process Control School for Manufacturers of Low Acid Canned and Acidified Foods” in collaboration with US Food and Drug Administration, India Office	1 st to 5 th March, 2011	Dr. Shalini Sehgal Dr. Rizwana Mr. Tushar Kanti Dutta	37 food industry professionals and 15 students
2	Career in Food Safety – An international perspective	17 th August, 2011	Dr. Hirotoshi Tamura, Professor of Food Chemistry, Kagawa University	20 students
3	Advances in Microbiological Analysis	23rd January, 2012	Mr. Jules Jalenques, International Sales, Interscience, France in the college	30 final year students

4	<p>Winter School -Training On Comprehensive Understanding About Food Quality & Safety Testing</p> <p>Subjects covered during training :</p> <ol style="list-style-type: none"> 1. Nutritional analysis of Food. 2. Microbiological testing and safety precautions during handling of the samples. 3. Heavy Metals: Techniques for analyzing the metals by Atomic absorption spectrophotometer. 4. Pesticides: Pesticides residue analysis by Gas Chromatography Mass Spectrophotometry. 5. Antibiotics: Antibiotics analysis by Liquid Chromatography Mass Spectrophotometry. 6. Toxins: Analysis of Mycotoxins by HPLC and ELISA. 7. Water: Analysis of water and waste water. 	10 th December, 2012 to 2nd January, 2013	Intertek, India located at Gurgoan	17 students
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Department of Microbiology

S. No	Name of the Workshop/Conference/Seminars	Date / Duration	Name of the Organisers/Speakers	Number of participants
1	Bacteriophages of Lactic Acid Bacteria, Foe and Friend in Food Production.	21 st March 2011	Professor Kunt Heller of Max Rubner Institute, Kiet, Germany	120
2	Emerging water-borne pathogens – The Indian Experience with <i>Yersinia enterocolitica</i> .	17 th Feb. 2012	Professor J.S. Viridi, Head, Department of Microbiology	110
3	Functional foods for improved human health.	17 th Feb. 2012	Dr. A.K. Puniya, Principal Scientist, National Dairy Research Institute, Karnal	110
4	Biocatalysis: A promising tool for environmentally benign industrial growth.	5 th September 2012	Prof. R. K. Saxena Department of Microbiology, University of Delhi South Campus	100

5	Seminar Series: Ecological and Economical importance of bacteria and archaeobacteria.	15 th &16 th October 2012	B.Sc. (Hons.)Microbiology 1st year	36
6	Seminar Series: Various plant diseases in relation to their epidemiology in Indian context.	17 th October2012	B.Sc. (Hons.)Microbiology IIIrd year	31
7	Microbiology- an exciting career ahead”	2 nd Feb. 2013	Prof. J.S.Virdi Department of Microbiology, University of Delhi South Campus	115
8	From plant pathogen Interaction to GE crops: How science is converted to technologies.	25 th March2013	Prof. Deepak Pental, former Vice- Chancellor, University of Delhi	90

Department of Food Technology : IN-HOUSE PROJECTS

Final year students were divided into a team consisting of two or three members each and worked at developing new products – their conceptualization, standardization, development at lab scale, packaging (designing of labels) and shelf life studies and their proximate analysis and finally report submission.

I. List of new products developed

Beet Root Concentrate, Beet Root Rolls, HibtamJam, Chikoo Crunch, Tahinah, Chestnut Delight, Sweet Potato Spread, Instant Flax Seed Chutney, Ceralac

- We plan to file their patents too

II. Survey to study the status of Functional Foods, Knowledge about Food Laws and Probiotics among the college going youth

Dashmeet Kaur, Annu Bhatia, Priyanka Sharma, Garima Barniwal Jayati Bhatnagar Aman Dua, Rakesh kumar	B. Sc. (Hons) Food Technology Third Year	Survey to study the Status of Functional Foods, Knowledge About Food Laws And Probiotics among the college going youth
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Department of Biomedical Science : IN-HOUSE PROJECTS

S. No	Name of the Student	Name of the Departmental Mentor	Duration	Project Title
1	Ambreen Khan	Dr. Shivani G. Varmani	1 st June, 2012 to 21 st July, 2012	Nutritional aspects of adults
2	Sumati Bangia	Dr. Uma Dhawan	1 st June, 2012 to 21 st July, 2012	Microarray analysis
3	Aditi Arya	Dr. Uma Dhawan	1 st June, 2012 to 30 th June, 2012	Microarray analysis
4	Ankita Katoch	Dr. Uma Chaudhry	1 st June, 2012 to 30 th June, 2012	Analysis of beta-lactamase producing plasmids of <i>Neisseria gonorrhoea</i>
5	Upasana Bajaj	Dr. Uma Chaudhry	1 st June, 2012 to 30 th June, 2012	DNA Microbial analysis

Department of Microbiology : IN-HOUSE PROJECTS

Students of second and third year were encouraged to submit their research ideas under the guidance of departmental faculty. Two in-house projects have been started.

S. No	Name	Class	Project Title
1	Mr. Surender Mr. Irshad	B.Sc.(Microbiology) IIIrd year	Incidence of coliforms and pathogenic bacteria on the currency notes in NCT
2.	Mr.Anay Mr. Amit	B.Sc.(Microbiology) IIInd year	Role of <i>Trichoderma</i> as biocontrol agent
3.	Ms.Surbhi Sinha	B.Sc.(Microbiology) IIInd year	Enumeration of Microbial Load on Fresh Fruits and Vegetables using Conventional Microbiological Methods

ALL THE INDUSTRIAL/ INSTITUTIONAL PROJECTS HAVE BEEN MENTIONED AS ANNEXURE 2 FOR THE THREE DEPARTMENTS AND INDIVIDUAL ACTIVITIES OF FACULTY MEMBERS AS ANNEXURE I.

SEMINARS AND CONFERENCES ATTENDED BY THE STUDENTS

- Students of B.Sc (Hons) Biomedical Sciences Part III attended a Seminar entitled 'Prospects of Diagnostics, Therapeutic Proteins & Human Vaccine Industry' in PHD chamber of commerce and industry, PHD House, 4/2 Siri Institutional Area on 11th July 2011
- B. Sc. (Hons) Biomedical Science (BMS) III year Students attended a Conference of PHD Chamber entitled "Pharma Tech India 2012 : Towards cutting edge Technology" held on 14th September, 2012 held at Taj Mahal Hotel, Man Singh Road, New Delhi. The Conference was designed to deliberate and showcase the strategic role of Technology for Pharmaceutical Industry
- Students of Microbiology, Biomedical Science and Food Technology attended the Academic Congress 6th-7th September, 2012, University of Delhi
- Students of the participating Departments attended the National Conference on Redefining Science Teaching: Future of Education organized by Acharaya Narendra Dev College on 7th-9th March, 2013.
- Selected Girl students also attended US-India Workshop on Best practices for Women in Science on 10th December, 2012.
- Students were encouraged to attend various seminars and conferences to understand the growing needs of Indian Food industry. Students attended the following-
 - 4th International Summit cum Exhibition on "Food Processing, Agribusiness and Cold Chain" on November 5th, 2012 at New Delhi.
 - National Conference on Ushering Second Green Revolution in Indian Agriculture through public-private Partnership organized by CII held at Vigyan Bhavan on 11th December, 2012.
 - International Conference on Innovations in Food Processing, Value Chain Management and Food Safety held at NIFTEM, Kundli, Sonapat on 10th- 11th January, 2013.

EDUCATIONAL VISITS

- Students of B.Sc. (H) Microbiology different batches have visited Technology Based Incubator and Department of Microbiology as well as Plant Molecular Biology South Campus, University of Delhi and had an extensive tour of their fermentation, tissue culture and green house facilities.
- Students of B.Sc. Microbiology (second and third year) visited national dairy research institute, karnal. they gained knowledge in areas of food and dairy microbiology,

anaerobic cultivation techniques, proteomics and robotics. They also visited model dairy plant and saw the process of packaging milk and milk products.

- Students of B.Sc (Hons) Biomedical Sciences Semester-2, Part-I and Faculty of the Department of Biomedical sciences, Bhaskaracharya College of Applied Sciences organized an educational trip to Dr. B. R. Ambedkar Center for Biomedical Research, University of Delhi. The purpose of the visit was to learn various techniques of animal handling such as Tubectomy, Hysterectomy and Orchidectomy on laboratory animals such as Wistar rats, which was a part of the course curriculum.
- An educational trip for FT 2nd year students was organized to Sky Gourmet Catering Services Pvt. Ltd., Delhi. Food production and packaging technology for airline industries in terms of quality, cost, service and safety parameters was explained to students by their Manager, Quality Assurance. Information about innovative procedures to enhance the quality of the food served onboard had also been given to the students during visit.
- B.Sc. (H) Food Technology semester II and IV students visited Parle Biscuit Factory located at Bahadurgarh, Haryana to gain industrial insight into baking technology.
- A trip to the Yakult Plant located at Sonapat was also organized for better understanding of fermentation technology for the students of all the three participating departments.

8. List of New Practicals Introduced and supported by the Star College Scheme-

Department of Biochemistry

1. Determination of Spectrum of different compounds using Spectrophotometry:
2. Analysis of mixtures using Spectrophotometry
3. To quantitate biomolecules given the values of Molar Extinction Coefficient and Specific Extinction Coefficient.
4. To prepare standard solutions of different compounds.
5. To prepare different types of Buffer solutions.
6. To determine the pKa value of acid.
7. To study the titration graphs of an acid.
8. To estimate the pK, pl and buffering zones of different acids.

Department Of Biomedical Science

1. Electro-blotting of proteins from SDS-PAGE gel onto PVDF membrane
2. Physiological data acquisition based experiments. (EEG, ECG, LFT, EMG, PET etc.)
3. Demonstration of - Barr Body
4. Metaphase chromosome preparation from peripheral human blood
5. Detection of single nucleotide polymorphisms (SNPs) using SNP specific primers and PCR.
6. Karyotyping with the help of photographs.
7. Study of abnormal karyotypes.
8. Demonstration of Confocal and electron microscopy in pathological experiments

9. Statistical calculation for LD 50 in the given data
10. Study of normal and abnormal ECG
11. Study of normal and abnormal Ultrasound scans
12. Study of normal and abnormal CT scans
13. Study of normal and abnormal MRI scans
14. Normal and abnormal X-ray films
15. To read the sequence of DNA from the given autoradiogram (manual sequencing)
16. Interpretation of sequence data obtained by automated sequencing.
17. Competent cell preparation and Transformation

Department of Food Technology

1. Estimation of pH and acidity of products.
2. Estimation of % brix: acidity ratio
3. To study the steps of can making process.
4. Preparation and evaluation of pectin products.
5. Microbiological Examination of different food samples
6. Bacteriological Analysis of Water
7. Biochemical tests for identification of bacteria
8. Assessment of personal hygiene
9. Introduction to labeling of foods
10. To study blanching and study the concept of Asepsis.
11. To perform pasteurization and sterilization of foods.
12. Standards of identity, standards of minimum quality and standards of fill of container.
13. Identification of different types of packaging materials used in the food industry.

NEW PRODUCT DEVELOPMENT PRACTICALS – Includes the conceptualization, standardization, development of different products at lab scale, their packaging (designing of labels) and shelf life studies and also their proximate analysis .

Department of Microbiology

1. Demonstration of the thermal death time and decimal reduction time of *E. coli*.
2. Cytochemical staining of DNA, RNA, Polysaccharides, Total proteins and Histones.
3. Preparation of Polytene chromosome from *Chironomouslarva/Drosophila larva*
4. Perform Southern Blot Hybridization (Restrict DNA for Southern Blot electrophoresis, perform electrophoresis of restricted DNA, perform southern transfer, hybridization and detection of gene of interest)
5. Perform DNA amplification by PCR.
6. To demonstrate the presence of mitochondria in striated muscle cells/ cheek epithelial cell using vital stain Janus Green B.
7. Study of polyploidy in Onion root tip by colchicine treatment
8. To perform Ames test in *Salmonella / E.coli* to study mutagenicity.
9. Study of Linkage, recombination, gene mapping using marker based data from *Drosophila*.
10. Pedigree analysis of some human inherited traits.
11. Study of Hardy-Weinberg Law using simulations (seeds).

12. Preparation of Yogurt/Dahi.
13. Alkaline phosphatase test to check the efficiency of pasteurization of milk.
14. Ligation of DNA fragments.
15. Restriction enzyme digestion (*EcoRI*) of genomic and plasmid DNA
16. Estimation of size of a DNA fragment after electrophoresis using DNA markers.
17. Construction of Restriction digestion maps from data provided.

9. Interdepartmental activities conducted:

- A workshop was organized on “**Role of probiotics in health and disease**” on 13th February 2013 by Dr. Neerja Hajela, Head Science, Yakult – Danone India
- The students of the all the participating departments visited **Yakult, Sonipat** on 18th February 2013.
- **WORKSHOPS CONDUCTED**

Interdepartmental Workshops				
S. No	Name of the Workshops and silent features	Date / Duration	Resource Persons	Number of participants
1	<p>Basic Microbiological Techniques A and B</p> <p>Various basic microbiological techniques were taught to students which would help them to work independently and in an inter-disciplinary manner towards the accomplishment of the project. They were given in depth knowledge of principle and working of various instruments and sterilization techniques to be used in the project. The students gained hands on experience for preparation of media and bacterial culture techniques</p>	<p>A : 14th and 15th June, 2012</p> <p>B: 27th and 28th June 2012</p>	<p>Dr. Shalini Sehgal and Dr. Purnima Anand</p>	15
2	<p>Sampling and enumeration of micro-organisms</p> <p>In this workshop students were taught sampling techniques and quantitative methods of enumeration of micro-organisms with special emphasis on standard plate count, serial dilution and</p>	<p>25th July, 2012 and 8th August, 2012</p>	<p>Dr. Shalini Sehgal</p>	15

	plating techniques.			
3	<p>Hands on Training on “Polymerase Chain Reaction</p> <p>Students were given hands on training to set up a PCR reaction using primers already designed by the faculty members, in order to amplify products from known food pathogens.</p>	28 th June, 2012	Dr. Uma Chaudhry	25
4	<p>Use of Biostatistical Tools in Biological Research</p> <p>Students were given training on various data collection tools, types of data, They were also introduced to various type of studies and to the commonly used statistical software, Agreement analysis, Sample size determination. Hands on training on all topics in various Statistical Softwares (SPSS, Epi-info,etc.) was also imparted.</p>	5 th July, 2013	Dr. VandanaSabarwal (Institute of Home Economics)	84
5	<p>Seminar on “Changing Paradigm of Food Safety”. Following lectures were held-</p> <ul style="list-style-type: none"> • Food Safety – An Indian Perspective • Cold Chain Management • Need of Food Safety in Fruits and Vegetable Industry- 	5 th July,2013	<p>Dr. R. K. Khandal, Vice Chancellor, UP Tech.University, Lucknow</p> <p>Ms. P. Alli Rani ,CEO, FHEL ,Concor , India.</p> <p>Mr.Rakesh Mehra, HEAD, IQF OPERATIONS, SAFAL</p>	85

• **Various Innovation Projects were conducted :**

Project No.	Project Title	Project Investigators
BCAS-101	Study of Rise in Consumption of the Mobile phones/Electronic Gadgets in Delhi region and Material Analysis projecting potential Electronic waste and their impact on environment	Dr. Geeta Bhatt, Dr. Manoj Khanna, Dr. Balaram Pani
BCAS-102	Studies to assess the quality of fruits and vegetables with respect to microbial load and the remedial measures for their control	Dr. Shalini Sehgal, Dr. Purnima Anand, Dr. Uma Chaudhry

BCAS-103	Development of Cost-Effective Nutritious Multi Cereal Bar and It's Sustainable Packaging Using Nano-Biopolymer	Dr. Meenakshi Garg Dr. Susmita Dey Dr. Shivani G. Varmani
BCAS-104	Development and study of alternate packaging materials from agro wastes and its application in food packaging	Dr. S. K. Shukla Dr. Anand Bharadvaja Dr. Rizwana
BCAS-105	Determine the Speciation of some Selected Heavy Metals from E-wastes and their Impact on Ground Water	Dr. Ramesh Kataria, Dr. Manoj K. Tiwari, Dr. Parthasarthy Pal

• **Interdepartmental Student Project Activities of this year :**

S. No.	Name	Department	Project Title
1.	Babbal Reehal	Dept. of Microbiology	Survey of Current Food Safety Practices in a popular Retail Chain (R1)
2.	Namya Rishi	Dept. of Microbiology	Survey of Current Food Safety Practices in a popular Retail Chain (R2)
3.	Tejaswani Arya	Dept. of Biomedical Science	To study the hygienic conditions in Retail Outlets
4.	Aakash Dudhmande	Dept. of Bio-medical Science	Microbiological Sampling Technique on Fresh Produce

Other activities

- **Faculty Training** -A visit to Kohinoor Foods Pvt. Ltd. located at Bahalgarh , Sonapat was organized for the faculty of Food Technology to understand the latest in retort technology. The faculty members were shown the latest state of art machine for retort packaging and a detailed information was given on the functioning of steam retorts on 13th February ,
- First international “Better Process Control School for Manufacturers of Low Acid Canned Foods” in collaboration with US Food and Drug Administration, India Office was held at Negumbo, Srilanka from 21st to 23rd November, 2011.
- Laboratory Safety Workshop titled Chemical Lab safety: Hazards and Disposal guidelines (as per ILLL initiative) was conducted in the college for the lab staff on 10th May, 2011.
- Entrepreneurship Awareness Camp in collaboration with Innovation & Entrepreneurship Development Centre (IEDC), Acharya Narendra Dev College (University of Delhi) from January 4 -6, 2012 sponsored by National Science & Technology Entrepreneurship Development Board (NSTEDB), Department of Science & Technology (Government of India)

- **Best Teacher Award** : Dr. Shalini Sehgal , Department of Food Technology received the (citation and cash award) for the year 2011-2012 conferred by Directorate of Higher Education and presented by Mrs. Sheila Dikshit, Honorable Chief Minister of Delhi on 10th May, 2012.
- **Star Student Award** : Mr. Swetaketu Majumder has been nominated for the first time for Star Student Award for designing the webpage of Star College Scheme and other related activities. The award includes an appreciation certificate and a cash prize of Rs. 2500.
- The Food Technology Departmental Society '**Ambrosia**' organised its annual inter college festival, Ambrosia 2012 on 27th September. Dr. Anupa Sidhu, Director of Lady Irwin College, University of Delhi was the chief guest for the occasion. During the technical session a lecture on 'Food Packaging' was given by Mr. Suman Kumar. A number of events were conducted to give an opportunity to the students from different colleges to display their talent in the field of Food Science. The most interesting of all was 'Taste of India', an event in which participants presented their home made dishes representing different states of India. Besides, there were brain storming sessions like Food Quiz, Crossword puzzle, Essay writing, Painting and Photography events on 'Safe Food' and 'Street Food'.
- The annual festival **MICROQUEST-2013** included various students' activities such as Art streak, Collage competition, Micro burst, Micro masti and Treasure hunt.
- A poster making competition on the Importance of Microorganisms: "**Bugs for better or worse**" was also organized on 5th September 2012, in which many students participated.
- A poster making competition on the theme "**Science – Then and Now**" was also organized which saw a very active participation from students all the streams in the college on 17th February, 2013.
- A seminar was held on "**Changing Paradigm of Food Safety**" on 5th July, 2013 organised by DU Innovative Project BCAS -102.
- Ms. Juhi Saxena, Ms. Megha Neagi and Ms. Manisha Rawat of BSc. (H) Food Technology have been the recipient of "Italian Technical Services Scholarship in Food Safety" for the years 2010, 2011, 2012 respectively for their academic performance in the final year.
- **Exhibition** of the training and educational material under the Food Safety Education Initiative on 5th July, 2013.
- **ECO CLUB ACTIVITIES**
 - Paper recycling unit was procured and installed in the college. It is recycling approx 1kg of paper every day. The recycled paper was put into several uses. Workshop for the

students on “Hands on training on Paper recycling” was organized to make students understand the importance of reuse-reduce and recycle.

- A workshop on “Reuse of Recycle Paper” was also organized in the college for students to understand its usage.
- An E-waste collection bin had been installed within the college premises to sensitize the students, faculty and non-teaching staff to dispose their electronic waste properly.

10. Resources generated:

I. GENERATION OF VIRTUAL LABS (FOR LIFE SCIENCES)

Breaking away from the traditional hierarchical method of teaching, towards a constructive approach, we have been able to develop few virtual labs under the Star College Scheme which would help students learn the techniques which are difficult to perform in the labs.

1. Ames test or Reverse mutation test for screening substances for mutagenicity.
2. Southern Blot Hybridization.
3. Detection of microbial load using Standard Plate Count Technique.

This new method of learning marks a paradigm shift in teaching as well, provisioning students to understand and develop a scientific acumen.

II. BIOLOGICAL REPOSITORY COLLECTION

We have taken a new initiative of making a biological repository collections of microorganisms routinely required for various undergraduate students. Biological Repository have been created and made available to other college teachers are *Escherichia coli* DH5α, *Escherichia coli* BL21, *Bacillus*, *Pseudomonas*, *Shigella*, *Neisseria* etc.

III. HUMAN GENETICS LABORATORY MANUAL , FOOD MICROBIOLOGY MANUAL and MOLECULAR BIOLOGY MANUAL were printed and provided to students of III year and II year respectively (2012-13) for incorporating their observations.

IV. FOOD SAFETY EDUCATION INITIATIVE

A complete training kit comprising of 14 posters (seven in Hindi and seven in English), leaflets, booklets were designed to help food handlers understand that the basic techniques of hand washing, hygiene, temperature control, proper storage play an important role in maintaining the supply of safe food. This training kit was used at various outlets to train the workers at the outlets and also being sent to the corporate offices of Indian Retail Sector for wider circulation at National level under the Food Safety Education Initiative.

V. The Microbiology society published a magazine ‘**LIFE UNDER LENS**’ in which students contributed a variety of articles related to microbiology and science.

11. Collaborative activities with neighbouring colleges:

1. Certificate Course in Bioinformatics & in-silico Drug Discovery was introduced as an initiative taken jointly by our College and Acharya Narendra Dev College, University of Delhi wherein students from both the colleges were given Hands-on Training in Bioinformatics. Dr Uma Dhawan from our college and Dr Gagan Dhawan from ANDC are co-ordinating the course. The classes were run on Saturdays and Sundays and during the vacations in both the colleges.
2. Biological Repository Collection generated by the Department has been made available to other colleges. Various biological strains, plasmids, reconstituted solutions and even slides have been given freely to other colleges.
3. Antardhvani – A multi-cultural festival of University of Delhi for the first time introduced an Award for Good Practices in which Bhaskaracharya College of Applied Sciences participated and its initiatives like New Product Development, Food Safety Education Initiative , Knowledge Initiative and the Star College Scheme were showcased. The visitors highly appreciated the efforts put in by the team and the students. The new products were appreciated and people wanted to purchase them too.

12. Qualitative improvements due to DBT support :

1. The faculty has been able to involve students in undertaking in house small research projects.
2. Educational material in the form of training kits, poster, visual labs, culture collection.
3. Virtual Labs have been generated to help students learn practicals that are difficult to perform at the undergraduate program.
4. Faculty has been benefitted by the Star College scheme, as they were able to present their work in various Conferences. The financial support in the form reimbursement of registration fees and travel assistance helped.
5. Economically weaker students have been helped by the grant to undertake industrial trainings as some industries charge for 4-8 week training. This training was compulsory under the earlier curriculum.

13. Strengths and weaknesses of participating departments-

Strengths

1. Excellent Infrastructure
2. Qualified Faculty and inclination for research as showcased by the Innovative Projects and other projects
3. Recognition of the college by various agencies.

4. Emphasis on co-curricular activities.
5. With introduction of Four Year degree program, we are the only college in the University of Delhi **OFFERING FIVE B. TECH. DEGREE COURSES.**

Weaknesses

1. No appointments in DU For last two years which has led to lack of permanent faculty in the departments.
 2. Space crunch due to the increase in the no. of allotted seats in all the three departments.
 3. Being a science college, the students are busy from morning to evening in their regular classes (timing are 9.15am-5.00 pm) leaving very little time to pursue other activities although a special slot for once a week has been allocated.
 4. No transfer of technology from college to Industry in spite of the fact that innovative new cost effective food products have been developed.
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ANNEXURE-I

TEACHER'S ACTIVITIES (2010-2013)

(A) Workshops / Conferences Attended

Department of Biomedical Science

S. No.	Name of the Workshop /Conference attended	Name of the Organizers	Date of attending
Dr. Uma Chaudhry			
1	Quality Matters in Higher Education	The Open University, UK under the UK India Education and Research Initiative	8 th to 12 th March 2010
2	Indo-European Conference on "Quality Assurance in Higher Education"	University of Delhi	6 th and 7 th May, 2010
3	Prospects of Diagnostics, Therapeutic Proteins & Human Vaccine Industry	PHD chamber of commerce and industry, PHD House	11 th July, 2011
4	12 th IUSTI World Congress 2011, presented a paper on : Characterization of putative Immunodominant Proteins of <i>Chlamydia trachomatis</i> to be positionally conserved and secreted using a Bioinformatics Approach	International Union of Sexually Transmitted Diseases	2 nd to 5 th November, 2011
5	Bioinformatics and molecular modeling in drug design	Dr. B. R. Ambedkar Center for Biomedical research, DU	18 th to 20 th January, 2012
6	Brainstorming Session on R & D Output Indicators (Biotech. and Pharma Industry)	PHD Chamber of Commerce and Industry	30 th May 2012
7	Emerging Trends in Development of Drugs and Devices	Department of Chemistry, University of Delhi and three National Science Academies of India	21 st to 23 rd January, 2013
8	32nd Annual Convention of Indian Association for Cancer Research (IACR) on Emerging Trends in Cancer Research: Road to Prevention & Cure and an International Symposium on Infection & Cancer	Dr. B. R. Ambedkar Center for Biomedical research, DU	13 th to 17 th February, 2013
9	International Conference and Exhibition on Food Processing and Technology Presented a paper on : Rapid detection and characterization of pathogens present on fresh produce : A paradigm shift from	OMICS group International in Hyderabad International Convention Centre,	22 nd to 24 th November, 2012

	culture plate to molecular biology	India	
10	"In Pursuit of an Idea", a unique event where IIC and NIC together works on to develop innovative applications based on published data and real world problems	Institute of Informatics & Communication (IIC), UDSC and National informatics Centre (NIC), Govt. of India entitled	24 th May, 2013 S.P. Jain Auditorium, University of Delhi South Campus.
11	Biotechnology, Techniques and trends	Hindu College, DU	28 th to 31 st May, 2013
Dr. Shivani G. Varmani			
1	Refresher Course in Biotechnology	Jawaharlal Nehru University, Delhi	July-August 2011
2	Prospects of Diagnostics, Therapeutic Proteins & Human Vaccine Industry	PHD chamber of commerce and industry, PHD House	11 th July, 2011
3	Bioinformatics for College Teachers	Sri Venkateshwara College, University of Delhi	27 th to 30 th July, 2011
Dr. Uma Dhawan			
1	Managing Bibliography with EndNote	School of Biological Sciences, University of Edinburgh, UK	22 nd April, 2011
2	Biomolecular interactions using label-free technique	Biological Sciences, University of Edinburgh, UK	17 th March, 2011
3	Project Planning	School of Biological Sciences, University of Edinburgh, UK	11 th February, 2011
4	Next GenBUG	National e-Science Center, University of Edinburgh, UK	14 th March, 2011
5	Emerging Trends in Development of Drugs and Devices	Department of Chemistry, University of Delhi and three National Science Academies of India	21 st to 23 rd January, 2013
6	32nd Annual Convention of Indian Association for Cancer Research (IACR) on Emerging Trends in Cancer Research: Road to Prevention & Cure and an International Symposium on Infection & Cancer	Dr. B. R. Ambedkar Center for Biomedical research, DU	13 th to 17 th February, 2013

(A) Workshops / Conferences Attended

Department of Microbiology

S. No.	Name of the Workshop /Conference attended	Name of the Organizers	Date of attending
Dr. Vijay Kumar Nalla			
1	Emerging Trends on Molecular Genomics of Breast Cancer	National Institute of Immunology (NII) (New Delhi)	12 th September, 2010
2	Comparative Genomics of Eukaryotic Microorganisms: Understanding the complexity of Diversity Research paper entitled, "Comparative genomics and genome wide analysis of bidirectional promoters in <i>Candida albicans</i> " was published	European Molecular Biology Organization	15 th October 2011
3	Effective Grant writing skills and IPR	Held at India Habitat Centre by Biotech Consortium India Ltd.	4 th July 2012
4	Emerging Trends in Cancer Research: Road to Prevention & Cure and an International Symposium on Infection & Cancer	Dr. B. R. Ambedkar Center for Biomedical research, University of Delhi	13 th to 17 th February, 2013
Dr. Purnima Anand			
1	Prospects of Diagnostics, Therapeutic Proteins & Human Vaccine Industry	PHD CHAMBER OF COMMERCE AND INDUSTRY, PHD House, Delhi	11 th July 2011
2	Orientation Programme for Teachers	Jamia Milia Islamia.	15 th July to 12 th August, 2011
3	Jury Member in National Level Exhibition and Project Competition organized under "Innovation in Science Pursuit for Inspired Research"	Department of Science & Technology, Government of India	August 2011
4	First meeting of Coordinators of Colleges supported under Star College Scheme	SGTB Khalsa College, University of Delhi	30 th and 31 st May, 2012
5	The Academic Congress titled 'Enabling the Young: Redefining Education'	University of Delhi	6 th and 7 th September, 2012
6	Jury member for second national level exhibition and project competition under INSPIRE scheme of DST	Department of Science & Technology, Government of India	October, 2012.
7	One day International symposium on Lignocellulose Biotechnology Consortium	University of Delhi, South Campus	12 th December, 2012
8	US-India Workshop on Best practices for Women in Science	DST, U.S. Embassy and IUUSTF	10 th December, 2012.

Dr. Pawas Goswami			
1	21 days winter school on 'Chemical Analysis of Value Added Dairy Products and their Quality Assurance'	DairyChemistry Division, National Dairy Research Institute, Karnal	11 th to 31 st , January, 2011.
2	Promotion of Indigenous Dairy Products in International Market	National Dairy Research Institute, Karnal, Haryana.	22 nd January, 2011
3	Building Knowledge Networks through USP	University of Sao Paulo, Brazil	17 th to 20 th October, 2011
4	12 th Indian Science Communication Congress with the theme of Risk Communication and Development Presented a paper titled 'Genetically Modified Microorganisms: Trends and Awareness'	Indian National Science Academy, New Delhi	18 th to 20 th December, 2012.

(A) Workshops / Conferences Attended

Department of Food Technology

S. No.	Name of the Workshop /Conference attended	Name of the Organizers	Date of attending
Dr. Rizwana			
1	New Trends in Packaging of Fresh and Processed Foods for Domestic and Export Market	All India Food Processors Association, New Delhi	9 th April, 2010
2	5 th Food Safety and Quality Summit “India the Food Factory of the World Food Safety Challenge and Opportunities”	Confederation of Indian Industries	8 th and 9 th July, 2010
3	Integrated Food Law	Department of Food Science and Technology and AFST in Puducherry	3 rd September, 2010
4	66 th Annual Conference of AIFPA “Inclusive Growth of Food Processing Industries	All India Food Processing Association (AIFPA) in Pragati Maidan	3 rd December, 2010
Dr. Shalini Sehgal			
1	Recent Developments in Health, Food and Nutrition	ILSI, India held at Delhi	April, 2010
2	5 th Food Safety and Quality Summit “India the Food Factory of the World – Food Safety Challenge and Opportunities	Confederation of Indian Industries	July, 2010
3	Food Safety and Standards Act – The Step Forward	All India Food Processing Association (AIFPA) in Pragati Maidan	July, 2010
4	Integrated Food Law	Department of Food Science and Technology and AFST in Puducherry	3 rd September, 2010
5	Inclusive Growth of Food Processing Industries	AIFPA at New Delhi.	December, 2010
6	Development of Educational framework for Human Resources in Food Safety Sector	FSSAI, New Delhi.	3 rd and 4 th November, 2011
7	The Academic Congress titled ‘Enabling the Young: Redefining Education’	University of Delhi	6 th and 7 th September, 2012

8	4 th International Summit cum Exhibition on "Food Processing, Agribusiness and Cold Chain"	ASSOCHAM	5 th November, 2012
9	US-India Workshop on Best practices for Women in Science	DST, U.S. Embassy and IUUSTF	10 th December, 2012.
10	National Conference on Ushering Second Green Revolution in Indian Agriculture through public-private Partnership	Confederation of Indian Industries	11 th December, 2012.
11	International Conference on Innovations in Food Processing, Value Chain Management and Food Safety	NIFTEM, Kundli, Sonapat	10 th and 11 th January, 2013.
12	International Conference on 'Food Safety Implementation' Delhi. Panel discussion in Technical Session on the following topic: "Challenges on Food Safety-Traceability and Product Recall"	FSSAI, New Delhi.	19 th and 20 th March, 2013
Dr. Meenakshi Garg			
1	All India Food Safety Summit	MOFPI, New Delhi	16 th December, 2011
2	International workshop on "Sustainability and water quality"	American Chemical Society, by ONGC	17 th to 20 th January, 2011

(B) PUBLISHED RESEARCH PAPERS and OTHER ACTIVITIES

Dr. Shivani G. Varmani

- Co-principal Investigator for the UGC sanctioned major research project entitled ‘Effects of Religious Fasting on Weight Loss in Indian Overweight and Obese Adult’
- Principal Investigator for DU innovative project entitled “Development of Cost Effective Nutritious Multi Cereal Bar and its Sustainable Packaging Using Nano-Biopolymer” *and two national patents are filed by the Delhi University under this project.*
- Soni A, Sadhu SD, Garg M, Garg A, Handa R, Varmani SG, and Kaur B. Preparation of Starch-PVA Blend Using Potato and its Mechanical Characterisation. *Jr. of Nanomedicine and Nanotechnology*, Dec.2012 vol.3: issue 9; pg 97.
- Chauhan H, Garg M, Varmani SG and Sadhu SD. To Study the Preparation and Nutritional Quality of Multi-Cereal Bar in the *Proceedings of the ICBPN 2012 International Conference* held in Kottayam, Kerala on 20-22, September 2012.
- Umair S, Garg M, Varmani SG and Sadhu SD. Development of Multi-Cereal Protein Bar with Jaggery in the Proceedings of the *ICBPN 2012 International Conference* held in Kottayam, Kerala on 20-22, September 2012.
- Soni A, Sadhu SD, Garg A, Handa R, Garg M and Varmani SG. *Preparation of a Packaging Material from a Biopolymer and Study of the Mechanical Properties of the Film* has been accepted for the International Conference by APA at Chandigarh on 21-22 Feb. 2013.
- Dutta, A Jain, S, Varmani, S G, Garg M and Sadhu, S D. Preparation of Low Cost Multi Cereal Nutritive Bar in *J Food Process Technol. Open Access*, Nov. 2012, vol. 3, p10.
- Negi, T, Garg M, Varmani, SG and Sadhu, S. Making of Papaya Papada in the Proceedings of 1st International Conference on *Innovations in Food Processing, Value Chain Management and Food Safety* at NIFTEM, Kundali, Sonapat, Haryana on 10-11 Jan.2013.
- Jain S, Dutta A, Varmani S G; Garg M, Sadhu SD. Low Cost Multi Cereal Nutritive Bar in the *Proceedings of the 1st International Conference on Innovations in Food Processing, Value Chain Management and Food Safety* at NIFTEM Kundali, Sonapat, Haryana on 10-11 Jan.2013.

Dr. Uma Dhawan

- Invited as an external expert for the comprehensive examination of a PhD student at The

Energy Resource Institute (TERI), New Delhi on July 20, 2012.

- Resource person in workshop for college teachers on theory and practical course “Biochemistry and Environmental Chemistry” for B.Sc. (Hons.) Chemistry (CHHT-514 and CHHP-514) organised by the Department of Chemistry, University of Delhi, July 2-7, 2012.
- Coordinator for a new add-on course in **Bioinformatics and *in-silico* Drug Discovery** for undergraduate and post-graduate students jointly run by Acharya Narendra Dev College and Bhaskaracharya College of Applied Sciences
- Dr Uma Dhawan has been awarded with Universitas 21 Award to do Masters degree in Bioinformatics from University of Edinburgh, UK under University of Delhi Faculty Training Program. She has also been awarded Master’s degree in Bioinformatics with distinction from the School of Biological Sciences, College of Science and Engineering, University of Edinburgh, UK (November, 2011).

Dr. Uma Chaudhry

- One student, Mahaveer Chand Golechha, was awarded Ph. D. degree under joint supervision.
- Appointed as a supervisor for two more Ph. D. students, Mr. Prashant and Ms Renu Pandey, by University of Delhi.
- Presented a paper on “Characterization of Putative Immuno-dominant Proteins of *Chlamydia Trachomatis* to be Positionally Conserved and Secreted using a Bioinformatic Approach” in the 12th International Union of Sexually Transmitted Infections - World Congress held in New Delhi from 2nd to 5th November, 2011.
- Participated in a Workshop on “Bioinformatics and Molecular Modeling in Drug Design” held at Dr B R Ambedkar Center for Biomedical Research, University of Delhi from 18th to 20th January, 2012.
- Dr Uma Chaudhry’s first student Mr. Mahaveer Chand Golechha was awarded with his Ph. D. degree in the Convocation of University of Delhi held on 24th March 2012. Board of Research Studies for Science, University of Delhi has appointed her as a supervisor for another Ph. D. student, Ms Renu Pandey, to work in our college and ACBR under direct supervision. She has three publications to her credit :
 - Naringin Protects against Kainic Acid-Induced Status Epilepticus in Rats: Evidence for an antioxidant, Anti-Inflammatory and Neuro protective Intervention. Biol. Pharm. Bull. 34(3) 360-365 (2011).
 - Sesamol protects kainic acid induced Status epilepticus in rats: evidence for an Antioxidant, antiapoptotic, and neuroprotective Intervention. Epilepsia, 52 (Suppl. 6):23–263, 2011
 - An insight into the drug resistance profile & mechanism of drug resistance in *Neisseria gonorrhoeae*. Indian J Med Res 134, October 2011, pp 419-431

- Golechha M, Chaudhry U, Bhatia J, Saluja D and Arya DS. 'Naringin Protects against Kainic Acid-Induced Status Epilepticus in Rats: Evidence for antioxidant, Anti-Inflammatory and Neuro protective Intervention' in *Biological and Pharmaceutical Bulletin*. 34(3) 360-365 (2011).

Dr. Rizwana

- Delivered lectures on 'HACCP' and 'Hygiene, Microbiological Quality and Safety Issues Associated with Processing of Meat, Poultry and Marine Products in the Short Term Training Programme on 'Upgradation of Food Processing Skills in Small and Medium Enterprises' organized by National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Kundli 19-21 September, 2011.
- Co-ordinator of the first international "Better Process Control School for Manufacturers of Low Acid Foods" in Negombo, Sri Lanka in collaboration with US Food and Drug Administration, India Office from 21st to 23rd November, 2011 .
- Doctor of Philosophy [Ph D degree] has been awarded on 22/12/2010 from Department of Toxicology, Faculty of Science, Jamia Hamdard on the topic entitled "Effects of Different Treatments on the Quality and Microbiological Safety of Meat Sourced from Indian livestock".
- Member of the project funded by Ministry of Food Processing Industries, Government of India. The grant was utilized to upgrade Food Technology Labs and the Pilot Plant of the college.
- Delivered a lecture on *Preservation of Meat to Ensure Safety and Maintain Quality* in the 7th Short Term Training Program (STTP) on Quality Issues in Meat and Poultry Processing Sector on 2-4 April 2012 organised by NIFTEM and National Meat and Poultry Processing Board, New Delhi.
- Project Faculty of Innovation Project BCAS-104 on 'Development and Study of Alternate Packaging Materials from Agro-wastes and its Application in Food Packaging', University of Delhi.

Dr. Shalini Sehgal

- Course Coordinator of the first Indian " Better Process Control School for Manufacturers of Low Acid Canned and Acidified Foods" in collaboration with US Food and Drug Administration, India Office for food professionals from various Indian Food Industries from 1st-5th March,2011 held at Bhaskaracharya College of Applied Sciences and at Negombo, Sri Lanka from 21st to 23rd November, 2011
- Resource person for the FSSAI trainings on Food Safety and contributed as an expert in the structure and review of Training Manual for the Food Safety Regulators in India by FSSAI, India.

- Resource Person for Food Technology in the Inspire Science Camp held at Bhaskaracharya College of Applied Sciences.
- ADDITIONAL QUALIFICATIONS OBTAINED - Training on “Food Safety Fundamentals and the New India Regulations by AIB International(Food Services Asia Pacific)
- Participated as an Expert in the evaluation for recipes cooked using different brands of microwave ovens conducted by Intertek India Private Limited, Gurgaon in November, 2010.
- Selected to attend the US Food and Drug Administration (FDA) one week Container Integrity Testing Class in Alameda, California, USA from 2-6 April, 2012.
- Coordinator of the ongoing project ‘Star College Scheme for strengthening of life science and biotechnology education and training at undergraduate level’ sanctioned by the Department of Biotechnology (DBT), Ministry of Science and Technology, Govt. of India.
- Resource person on ‘Emerging Food Processing Technologies’ for the India Africa Forum Summit (IAFS-II) held at Shri Ram Institute for Industrial Research from March 1st to 15th, 2012.
- Co-guide for M Sc. Dissertation on “Assessment Of Hygiene, Sanitation and Microbiological Quality of Food and Water Served at Various Pre-Schools of East and Central Delhi” undertaken at the Department of Food and Nutrition, Lady Irwin College, University of Delhi.
- Developed the course content of “Appreciation programme on Food Safety for Housewives/Young Girls” and contributed two chapters on ‘Food Safety and Water Quality’ for the School of Agriculture, IGNOU.
- Resource person for the FSSAI trainings for the Designated Officers on Food Processing and Food Safety held at NIB, Noida from 5-9th September, 2011.
- Resource person for the training of PBOR on “Food Quality” and “Testing and Evaluation” at Indian Society of Agribusiness Professionals (ISAP), Delhi in August, 2011.
- Paper presented at the International Conference and Exhibition on Food Technology and Processing titled *Evaluation of Food Safety Practices in the Retail Outlets of West Delhi (India)* at Hyderabad, 20-22 November, 2012.
- Principal Investigator of the DU Innovative Project BCAS-102 titled “Studies to Assess the Quality of Fruits and Vegetables with Respect to Microbial Load and the Remedial Measures for their Control”.
- Coordinator of the Food Safety Education Initiative , designed a complete educational kit

- Shalini Sehgal, R.K. Khandal, Uma Chaudhry and Purnima Anand. 'Evaluation of food safety practices in the retail outlets of West Delhi (India)' J Food Process Technology/S1: 2157-7110-S1.007-6/Special Issue 2012
- Uma Chaudhry, R. K. Khandal, Shalini Sehgal and Purnima Anand. 'Rapid detection and characterization of pathogens present on fresh produce: A paradigm shift from culture plate to molecular biology.' J Food Process Technology/S1: 2157-7110-S1.007-001/Special Issue 2012
- Shalini Sehgal, Purnima Anand and Manjusha N. 'Microbial Hazards Associated With the Vegetables Sold in Retail Market': Poster presentation in the National conference for "Redefining Science Teaching: Future of Education" organized by Acharya Narendra Dev College, Delhi University on 9th March 2013

Dr. Meenakshi Garg

- Received a two-year diploma in packaging from IIP.
- Participated in UGC sponsored Refresher Course in Research Methodology from Dec.12,2011 to Dec. 31,2011
- Supervised two M.Sc. Students of School of Continuing Education, IGNOU New Delhi
- UGC sanctioned a major project on Effects of religious fasting on weight loss in Indian overweight and obese adult as PI for three years
- Garg,M and Kaur B.Effect of temperature on drying characteristics of corn seeds in NanoSciTech 2012,International Conferenace on Feb.16-18,2012 at Chandigarh,India
- Principal investigator for the UGC sanctioned major research project entitled Effects of Religious Fasting on Weight Loss in Indian Overweight and Obese Adult.
- Principal investigator for DU innovative project entitled Development of Cost Effective Nutritious Multi Cereal Bar and its Sustainable Packaging Using Nano-Biopolymer and two national patents are filed by the Delhi University under this project.
Publications of Dr. Meenakshi Garg
- Soni A, Sadhu SD, Garg M, Garg A, Handa R, Varmani SG, and Kaur B. (Dec.2012). Preparation of Starch-PVA Blend Using Potato and its Mechanical Characterisation. *Jr. of Nanomedicine and Nanotechnology*, vol.3: issue 9; pg 97.
- Chauhan H, Garg M, Varmani SG and Sadhu SD. To Study the Preparation and Nutritional Quality of Multi-Cereal Bar in the *Proceedings of the ICBPN 2012 International Conference* held in Kottayam, Kerala on 20-22, September 2012.
- Umair S, Garg M, Varmani SG and Sadhu SD. Development of Multi-Cereal Protein Bar with Jaggery in the *Proceedings of the ICBPN 2012 International Conference* held in Kottayam, Kerala on 20-22, September 2012.

- Soni A, Sadhu SD, Garg A, Handa R, Garg M and Varmani SG. *Preparation of a Packaging Material from a Biopolymer and Study of the Mechanical Properties of the Film* has been accepted at the International Conference at Chandigarh by APA on 21-22 Feb. 2013.
- Dutta, A Jain, S, Varmani, S G, Garg M and Sadhu,S D. (Nov. 2012). Preparation of Low Cost Multi Cereal Nutritive Bar in *J Food Process Technol Open Access*, vol. 3, p10.
- Negi,T, Garg M, Varmani,SG and Sadhu,S. Making of Papaya Papada in the Proceedings of 1st International Conference on *Innovations in Food Processing, Value Chain Management and Food Safety* at NIFTEM, Kundli, Sonapat, Haryana on 10-11 Jan. 2013.
- Jain S, Dutta A, Varmani S G; Garg M, Sadhu SD. Low Cost Multi Cereal Nutritive Bar in the Proceedings of the 1st International Conference on *Innovations in Food Processing, Value Chain Management and Food Safety* at NIFTEM Kundli, Sonapat, Haryana on 10-11 Jan. 2013.

Dr. Eram S. Rao

- Book published by Dr Eram S. Rao :
Rao, Eram. S. (2013) *Food Quality Evaluation*. New Delhi: Variety Book Publishers and Distributers New Delhi.
- Presented a paper on *Human Resource and Skill Development of Food Processing Industry* in International Conference on Development of Backward Regions Through Agriculture & Food Processing: Preparing a Roadmap held at Institute of Professional Studies , University of Allahabad from December 27 - 28, 2012.
- Presented a talk on *Nutritional Requirements for the Mother and Child* in Teleconferencing for Doctors at IGNOU, New Delhi on Feb. 14, 2013.

Dr. Purnima Anand

- Shalini Sehgal, R.K. Khandal, Uma Chaudhry and Purnima Anand. ‘Evaluation of food safety practices in the retail outlets of West Delhi (India)’ *J Food Process Technology/S1: 2157-7110-S1.007-6/Special Issue 2012*
- Uma Chaudhry, R. K. Khandal, Shalini Sehgal and Purnima Anand. ‘Rapid detection and characterization of pathogens present on fresh produce: A paradigm shift from culture plate to molecular biology.’*J Food Process Technology/S1: 2157-7110-S1.007-001/Special Issue 2012*
- Shalini Sehgal, Purnima Anand and Manjusha N. ‘Microbial Hazards Associated With the Vegetables Sold in Retail Market’:Poster presentation in the National conference for “Redefining Science Teaching: Future of Education” organized by Acharya Narendra Dev College, Delhi University on 9th March 2013

- Coordinator and Resource Person for Microbiology in the Inspire Science Camp held at Bhaskaracharya College of Applied Sciences.

Dr. Ruchi Gulati Marwah

- Coordinator and Resource Person for Microbiology in the Inspire Science Camp held at Bhaskaracharya College of Applied Sciences.
- P Anand, RK Saxena and RG Marwah. A novel downstream process for 1,3-propanediol from glycerol-based fermentation. *Applied Microbiology and Biotechnology*, 2011, 90 (4) : 1267-1276 (IF 3.425).
- MO Fatope, GB Varma , NM Al-Azri, RG Marwah and RS Nair, Kaurane Diterpenoids from *Blepharispermumhirtum*. *Chemistry and Biodiversity*, 2010, 7, 1862-1870. (IF 1.926).
- S.Srinivasan,S Gupta, R Marwah, P Manisankar, and R Kumar. Synthesis, characterization and in vitro biological studies of novel N-Aryl Piperazinyl Fluoroquinolones. *Research Journal of Pharmaceutical, Biological and Chemical Sciences*,2010,Vol. 1(3):727-738.

Dr. Pawas Goswami

- Kulkarni, A. and Goswami, P. (2012). Avian Fauna of Summer Hill, Shimla-Himachal Pradesh. Accepted for publication in *Bioscan*

ANNEXURE- II (a)

LIST OF PROJECTS TAKEN BY B. Sc. (Hons) Biomedical Science II YEAR STUDENTS

S. No.	Name of the Student	Name of the Institution	Duration	Project Title
1	Apoorva Uboveja	Maulana Azad Medical College	1 st June, 2012 to 21 st July, 2012	Protein extraction from <i>Tinospora</i> plant and determination of protein bands using SDS-PAGE
2	Akanksha	Maulana Azad Medical College	1 st June, 2012 to 21 st July, 2012	Protein extraction from <i>ocimum sanctum</i> plant and determination of protein bands using SDS-PAGE
3	Aanchal Gupta	Maulana Azad Medical College	1 st June, 2012 to 21 st July, 2012	P53 polymorphism in cancer.
4	Abhilekh	University of Delhi	1 st June, 2012 to 21 st July, 2012	Isolation of heavy metal (cadmium) resistant bacteria from <i>fly ash</i> and their characterization.
5	Charu Aggarwal	Miranda house (D. S. Kothari Centre for Research)	1 st June, 2012 to 21 st July, 2012	To clone and express mycobacterial proteins
6	Aradhaya Jain	Tata Memorial Centre, Mumbai	1 st June, 2012 to 21 st July, 2012	Screening of cervix pathology using different diagnostic modalities in Indian women.
7	Shivya Bhutani	All India Institute of Medical Lectures (AIIMS)	1 st June, 2012 to 21 st July, 2012	Karyotyping Studies
8	Monica	Chemistry Department, University of Delhi, North Campus	1 st June, 2012 to 21 st July, 2012	Medicinal Compounds Preparation
9	Yogesh Pandey	I.I.Sc, Bangalore	1 st June, 2012 to 30 th June, 2012	Mycobacterial Drug target analysis
10	Deep Prakash	I.I.Sc, Bangalore	1 st June, 2012 to 30 th June, 2012	Mycobacterial Drug target analysis
11	Shubham Kesarvani	I.I.Sc, Bangalore	1 st June, 2012 to 30 th June, 2012	Mycobacterial Drug target analysis
12	Somya Bhardwaj	All India Institute of Medical Lectures (AIIMS)	1 st June, 2012 to 30 th June, 2012	Naringin studies in neuronal models of rats
13	Kriti	All India Institute of Medical Lectures (AIIMS)	1 st June, 2012 to 30 th June, 2012	Clinical analysis of blood
14	Vandana	Genetics Department,	1 st June,	Plant Genetics

		University of Delhi, South Campus	2012 to 30 th June, 2012	
15	Ruchi Tiwari	Genetics Department, University of Delhi, South Campus	1 st June, 2012 to 30 th June, 2012	Plant Tissue Culture Techniques
16	Anjali Dixit	V. Patel Chest Institute, North Campus	1 st June, 2012 to 30 th June, 2012	Immunization studies
17	Ankit Kumar	V. Patel Chest Institute, North Campus	1 st June, 2012 to 30 th June, 2012	Investigated the effect of naltrexone and neurobehavioral changes due to acute and repeated restraint stress in wistar rats.
18	Nabeel Ali	V. Patel Chest Institute, North Campus	1 st June, 2012 to 30 th June, 2012	Effect of naltrexone and neurobehavioral changes
19	Kamta Dubey	North campus, du	1 st June, 2012 to 30 th June, 2012	Effect of alcohol (ethyl alcohol) on macrophages in-vitro studies.
20	Tenzin	North campus, du	1 st June, 2012 to 30 th June, 2012	Effect of alcohol (n-butanol) on macrophages in-vitro studies.
21	Namrata Gautam	Genetics Department, University of Delhi, South Campus	1 st June, 2012 to 30 th June, 2012	Human Genetics Analysis of fragile X syndrome
22	Namit Dey	Chemistry Department, University of Delhi, North campus	1 st June, 2012 to 30 th June, 2012	Use of iron oxide and gold nanoparticles in nanobiotechnology.
23	Sunil Gupta	University of Delhi	1 st June, 2012 to 30 th June, 2012	Isolation of heavy metal(nickel) resistant bacteria from <i>fly ash</i> and their characterization.
24	Jyotsana Dhama	IIT, Delhi	1 st June, 2012 to 30 th June, 2012	Protein Purification techniques
25	Savita Goswami	IIT, Delhi	1 st June, 2012 to 30 th June, 2012	Protein Purification techniques
26	Siddharth Gussain	Dr. B. R. Ambedkar Center for Biomedical Research	1 st June, 2012 to 30 th June, 2012	<i>De novo</i> identification of protein complexes that bound to pre-pik3c2b

ANNEXURE- II (b)

LIST OF PROJECTS TAKEN BY B. Sc. (Hons) FOOD TECHNOLOGY STUDENTS

Department of Food Technology

Industrial projects (2012-13) The second year students go to the industry for familiarization with Food Industry for 4 weeks whereas third year student undertake a project (4-6 weeks) as listed below

Second year Students-

Name of the industry	Students
Safal	Aman, Karan, Jasveer, Deepak
Haldirams	Anita, Priya, Silvi
Mother Dairy	Manisha, Megha
PepsiCo	Monika, Vandana
Britannia	Akshay, Dashmeet, Manar
DMS	Rohant, Jyoti, Shashi, Kshitij, Sapna, Manish
Nirulas	Shubhendu, Raj Kumar
Intertek	Priyanka, Anu, Sanjay, Rakesh
Wallmart	JayatiBhatnagar
Sky chef	SapnaVerma, Ritu, Swati
Calpro	Garima, Sumiti

Third year students

Name of Student	Name of the Industry	Project
Vikas Malla	Parle Agro	Sanitation norms in Beverage Industry and its validation
Megha Negi	Safal	Frozen Foods
Alka Chahaun	Sky Gourmet Catering	Validation Of CCP
Vaishali Sharma	Golden Wheat and allied Mills Pvt. Ltd.	Developing Food safety Training Module
Prashant Kumar	Golden Wheat and allied Mills Pvt. Ltd.	Effect of dough mixing time on buns
Rajeev Kumar	Golden Wheat and allied Mills Pvt. Ltd.	Effect of dough mixing time on bread
Rahul Vashistha	Safal	Packaging of frozen peas
Ayush Kumar	Jumbo Ltd	Canning of peppers

Vikas Lakra	Delhi Milk scheme	To determine the weight of 500 ml pack at different time interval and determine one day loss
Prashant Kumar Gautam	Delhi Milk scheme	To determine the weight of 1L pack at different time interval and determine one day loss
Seema Bari	Intertek	Study of various technique used in commercial analysis of Honey
Chandni Parvanda	Britannia	Controlling weight variation in 50-50 biscuits
Ankita Batra	Bikanerwala foods Pvt Ltd	Quality analysis and processing of milk based canned product
Jyoti Bohra	Safal	Frozen Foods
Manjari Singh	Frontier Biscuits Factory Pvt Ltd	Biscuit formulation
Deepika Sharma	Frontier Biscuits Factory Pvt Ltd	Biscuit Analysis
Shikha	Frontier Biscuits Factory Pvt Ltd	Sensory evaluation of different khatais
Deepika Arora	Bikanerwala foods Pvt Ltd	standardization of finished Product
Anshu Mehra	Mother Dairy	Chemical and microanalysis of milk and milk products
Parvinder Singh	Delhi Milk scheme	To study difference in weight of milk during packing from different machines
Naveen Chillar	Sky Gourmet Catering Pvt Ltd	FSMS
Saloni Parashar	Nestle India Ltd	To reduce the losses caused due to non utilization of noodle cakes
Surbhi Negi	Mother Dairy	Milk Processing
Om Prakash	Golden Wheat and allied Mills Pvt. Ltd.	Proofing time effect,Raw material storage conditions and how to control product wastage in baking industry.

ANNEXURE- II (c)

LIST OF PROJECTS TAKEN BY B. Sc. (Hons) MICROBIOLOGY STUDENTS

S.No.	Name	Project/Summer Training Title	Duration	Place
1. 2. 3. 4. 5.	Mr. Surender Rawat Mr Irshad Mr.Gurdeep Rattu Mr Ajay Kumar Mr.Puneet Rathee	Sample testing in Pathology Lab	5 th June ,2012 to 21 st July, 2012	University College of Medical Sc.
6. 7. 8. 9. 10.	Ms.Shefali Thakur Ms.SnehaChatterjee Ms.NehaDayal Ms.Vishakha Ms.Diksha Kaila	Quality Control	28 th May, 2012 to 6 th July, 2012	Delhi Milk Scheme
11. 12.	Ms.Swati Gupta Ms.SonaliWadhwa	Quality assurance of milk and its products	5 th May, 2012 to 28 th July, 2012	Mother Dairy
13 14 15	Ms.Garima Ms.Divya Singh Mr.AkshatKinnoo	Microbiological analysis of packaged drinking water.	1 st June, 2012 to 30 th June, 2012	Bureau of Indian standard , central laboratory, Sahibabad

ADVISORY COMMITTEE OF STAR COLLEGE SCHEME AT BCAS

Chairman	Dr. Jai Prakash (Principal) Bhaskaracharya College of Applied Sciences University of Delhi ,Sector – 2, Phase – I Dwarka, New Delhi 110075 Tel: +91-11-25087597 Email: bhaskaracharya.college@gmail.com			
DBT Representatives			External Experts	
Technical Experts		Financial Expert		
Dr. Suman Govil Adviser, HRD Division Department of Biotechnology Ministry of Science & Technology 6th Floor, Room No. 611, Block-2, CGO Complex, Lodi Road, New Delhi-110003	Dr. Padma Singh, Scientist C Department of Biotechnology Ministry of Science and Technology Block-2, 7 th Floor CGO Complex, Lodhi Road New Delhi- 110003	Mr. Nand Kishore Department of Biotechnology Ministry of Science and Technology Block-2, 7 th Floor CGO Complex, Lodhi Road New Delhi- 110003	Dr. Mukesh Kumar, Deputy Director General, International Health Division Indian Council Of Medical Research, Ramalingaswami Bhawan, Ansari Nagar New Delhi-110029,India	Prof. S.C. Bhatla Head Department of Botany University of Delhi, Delhi-110 007.
Coordinator Star College Scheme	Dr. Shalini Sehgal Associate professor Department of Food Technology			
Faculty Members	Dr. Anita Sondhi Associate professor Department of Biochemistry Bhaskaracharya College of Applied Sciences	Dr. Uma Chaudhry Assistant Professor Department of Biomedical Sciences	Dr. Purnima Anand Assistant Professor Department of Microbiology	

