

# Information Brochure

## GYAN GANGA

*(Banasthali Online e-Learning Programmes)*



**BANASTHALI UNIVERSITY**

P.O. BANASTHALI VIDYAPITH

(Rajasthan)-304022

Price : Rs. 200/- (By hand)

Rs. 250/- (By post)

No. F. 9-6/81-U. 3  
Government of India  
Ministry of Education and Culture  
(Department of Education)

New Delhi, the 25th October, 1983

## NOTIFICATION

In exercise of the powers conferred by Section 3 of the University Grants Commission Act, 1956 (3 of 1956) the Central Government, on the advice of the Commission, hereby declare that Banasthali Vidyapith P. O. Banasthali Vidyapith (Rajasthan) shall be deemed to be a University for the purpose of the aforesaid Act.

**M. R. Kolhatkar**

(M. R. Kolhatkar)

Joint Secretary to the Government of India

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# Banasthali University – An Overview

( [www.banasthali.org](http://www.banasthali.org))

Banasthali University is National Centre for women's education. Banasthali's educational programme aims at an all-round development of the student's personality. To achieve its objective of 'synthesis of spiritual values and scientific achievements of the East and the West', it has evolved Five-fold Educational Programme (Panchmukhi Shiksha) comprising of (i) Physical, (ii) Practical, (iii) Aesthetic, (iv) Moral and (v) Intellectual aspects. This way the students develop an integrated and balanced personality.

Since its inception in 1935 Banasthali has felt the need for autonomy in its educational efforts if it were successfully to implement its educational ideas. Though Banasthali has enjoyed virtual autonomy for its school programmes since the very beginning, it found affiliation to an outside agency for its university programme a suffocating experience. On October 25, 1983 the Government of India, on the advice of the University Grants Commission, notified Banasthali an institution deemed to be University.

Achievement of the University status put great responsibility on the institution. It had to show what it could do in the academic field but which it was not able to do due to lack of autonomy. Soon after attaining the University status in 1983 it embarked upon radically restructuring its undergraduate programmes. At the post-graduate level, Banasthali had taken up the task of opening up new and emerging areas of knowledge to its students, to give them a competitive edge in their professional life. For example post-graduate courses in Computer Science (covering both theoretical and application aspects), Operations Research, Electronics, Bio-Technology, Teacher Education and Management were started in past ten to fifteen years. These were followed by new courses in the emerging areas of life- sciences such as M.Sc (Bio-Informatics), M.Sc (Pharmaceutical Chemistry) and M.Sc (Applied Microbiology). It may not be an over statement to say that in the past twenty years Banasthali University has found for itself a respectable place in the community of University institutions. Initially along with professional programmes such as MBA and MCA, semester scheme was introduced in all PG programmes in science. This led to a great degree of inter-disciplinary approach in the teaching-learning. From 2004 all Post-graduate programmes are being run as semester courses. The programmes have been structured in such a fashion that the modular courses being offered provide a lot of flexibility in as far as taking relevant courses from the related discipline.

From 2007 Banasthali University has ushered into engineering and technology education by starting B.Tech programmes. Banasthali already offers M.Tech programmes in Computer Science, Software Engineering and VLSI Design. Starting of B.Tech programmes has given completeness to the Science and Technology education in Banasthali University.

In addition to constantly upgrading and strengthening its academic programme, Banasthali University is conscious of keeping right balance between its educational objectives and the market forces commercializing the education. It is with this backdrop that Banasthali now announces Online programmes for e-learning to provide anywhere, anytime education. Initially these programmes are being started with first level courses in four different areas i.e. Management, Informatics in Life Sciences, Languages, and Information and Communication Technology (ICT).

# GYAN GANGA

## Banasthali Online e-Learning Programmes

21st century is considered to be Information Technology era that has created an immense impact in every sphere of life including education system. Education shapes the destiny of a nation and is the principal instrument of developing human capabilities and transforming the economy. Therefore, to keep pace with the technological advancements there is a need to develop new methodologies for education. Today, Online Education is one of the ways of imparting effective education to the aspiring learners, residing anywhere in the world, to pursue and advance their learning process via the Internet, without compromising their professional responsibilities and duties with education by presenting a variety of solutions and subjects beyond the scope of traditional education

Electronic learning or e-learning is a general term commonly associated with the field of advanced learning technology (ALT) used to be referred as Computer Assisted Learning (CAL). These services have evolved since computers were first used in education.

E-learning is a form of flexible learning which naturally suits to distance learning. In higher education especially, the increasing tendency is to create a Virtual Learning Environment (VLE) in which all aspects of a course are handled through a consistent user interface. Through e-learning a wide range of academic degrees and certificate programmes are offered via the internet at a wide range of levels and in a wide range of disciplines. While some programmes require students to attend some campus classes or orientations, many are delivered completely online.

Major Benefits of e-learning are

- Online student support services,
- Online advising and registration,
- Online availability of course material,
- E-counseling

Acknowledging the benefits of e-learning, Banasthali University launches Gyan Ganga- an online portal for e-learning. In Gyan Ganga, initially the programmes are introduced with elementary level courses in the following four areas which latter are to be expanded to more areas and to advanced

Courses

- Management
- Bioinformatics/Life Sciences
- Languages
- Information and Communication Technology (ICT)

# GYAN GANGA

## Banasthali Online e-Learning Programmes

In Management, a large number of short modules are offered in banking each leading to a separate certificate. In Bioinformatics / Life Sciences, there are Certificate courses of minimum six months duration in Bioinformatics, Cheminformatics, Clinical Trials and Pharma Regulatory Affairs. In Languages, both English as well as modern European languages such as German and French, the courses are graded for O, A and B levels. In ICT, the beginning is made with two diploma courses, one in Networking and the other in Internet & Web Technologies.

Most of these courses can be studied by minimum 10+2 level education. It is planned to introduce advanced courses in each of the above, once the student completes these first level courses. The minimum eligibility for each of these programmes is given in the table below:

S.No.		Course Category	Minimum Eligibility
1.	MBA MBB	Courses in Banking <b>Type A</b> <b>Type B</b>	Graduates or studying in undergraduate programmes
2.	E Z B	Certificate Course in Bioinformatics	10+2 with Science
3.	E Z C	Certificate Course in Cheminformatics	10+2 with Science
4.	E Z T	Certificate Course in Clinical Trials	Graduates in Science, B.E/ B.Tech./ B.Pharma
5.	E Z R	Certificate Course in Pharma Regulatory Affairs	Graduates in Science, B.E/ B.Tech./ B.Pharma
6.	L E O L F O L G O	O Level Course in English O Level Course in French O Level Course in German	10+2
7.	E S N	Diploma in Networking	
8.	E S W	Diploma in Internet & Web Designing	10+2 with elementary programming skills.

### How to Apply

#### Option 1 :

Submit application form online by clicking Banasthali Online on the official website of Banasthali University <http://www.banasthali.org>. A valid email id is a prerequisite on which the registered candidate will be informed about the user name and password for online access. However, additionally you must submit the application form in hard copy by taking a print of the form you submitted and posting it to the address given below. The form must accompany your passport size photograph, proof of date of birth and copies of mark sheets & certificates required for eligibility. A draft of the requisite fee or print of receipt of online fee submission also must

### Option2:

Application Form and Information Brochure can be downloaded from the website and submitted with a passport size photograph, copy of proof of date of birth and eligibility to the course along with requisite fee.

### Option3:

One can obtain the Application Form and Information Brochure in person by paying Rs. 200/- in cash from Vani Mandir, Banasthali University,

or

The Application Form and Information Brochure can be obtained by post by sending a D.D of Rs. 200/- drawn in favour of "Banasthali Vidyapith", payable at any of the banks in Banasthali/Jaipur along with a request for application clearly mentioning the course you wish to apply for, with your name at the reverse of the Bank Draft also.

The duly filled application form along with a passport size photograph, copy of proof of date of birth, copies of marksheets and certificates for eligibility to the course, and requisite fee should be sent by post to Banasthali University at:

Gyan Ganga  
Banasthali University  
P.O. Banasthali Vidyapith-304 022 (Rajasthan)  
Phone No. : (91) 01438-228647/48  
Fax : (91) 01438-228649  
e-mail : [gyanganga@bv.banasthali.ac.in](mailto:gyanganga@bv.banasthali.ac.in)  
URL : <http://www.banasthali.org>

## Enrolment Procedure

- Apply as per the Option 1/2/3 by paying the requisite fee.
- One must provide an e-mail address in the application on which the login –id and password along with student –id for each course shall be delivered. The registration ID will only be generated after receipt of duly filled application form and requisite fee and informed to you on your e-mail-id.
- One can apply during any time of the year. The registration is valid for a year from the date of enrolment.
- Student can register in more than one course at a time, however one has to fill separate application form for each course (in hard copy).

## Examination and Certification

- Examination for each course shall be conducted periodically at selected centres throughout the country i.e. Banasthali, Jaipur, Delhi, Dehradun, Bhopal, Ahmedabad, Kolkata and Bangalore. Banasthali has the right to withdraw any centre depending on the number of candidates registered for the centre.
- Every student passing the course shall be provided Marksheet and Certificate by Banasthali University, both online and in hard copy by post.

## Helpdesk

Learners, who wish to enroll, can make queries and get guidance by the expert faculty from the respective field by clicking at Helpdesk link on the portal and/or by e-mail.

## Management e-Universe

As the corporate world continues to take up new challenges & opportunities there is an urgent need to impart managerial learning online. The growth in global business requires more acquaintance of managerial aspects among masses. Keeping this in view the University shall offer programmes in areas of Finance, HRD, Marketing, Retail, Ethics in Management, General Management etc. To begin with about 110 programmes in banking are being offered in association with ICICI Bank. More programmes in this domain shall be added in future.

### Objectives:

- To impart behavioural skills in form of etiquette & communication to ensure result driven sales, operations & negotiation tasks.
- To acquaint learner with details of maintaining information security, knowing the customer and ensure preventing of frauds.
- To introduce fundamental concepts of banking industry and understand types of banking activities and some common products like mutual funds, gold retail, two wheeler loans etc.
- To introduce key IT fundamentals viz. computer system, networking, software development cycle & database.
- To demystify the process involved in banking activities like cheque clearing, assessment of real estate, foreign exchange remittance, working capital etc.
- To facilitate in learning the procedure & appraisal for banking products like derivatives, farm equipment loans, home loans, credit cards etc.
- To demystify the concept of quality for banking process and acquaint learner with advanced tools like Six Sigma & Five S.

## Courses :

The 110 courses offered at present are divided into 66 course packages. These packages are coded in two broad categories- 'MBA' and 'MBB'. These categories contain 6 (generally) and 2 courses respectively.

### Category Code: MBA 001

S.No	Course Package
1	Evolution of Money and banking
2	Banking An Introduction
3	Overview of Banking
4	Business Math
5	Business Math Advanced
6	Macroeconomics

### Category Code: MBA 006

S.No	Course Package
1	RBO Cash
2	RBO Remittance
3	RBO-Account_Opening
4	Retail Deposit Products Household
5	Basics of Retail Asset Finance
6	Basics of online Money2 India

### Category Code: MBA 002

S.No	Course Package
1	Indian Financial Systems
2	Introduction to Retail Banking
3	Type of Deposits and Accounts
4	IT Fundamentals
5	Type of Customers Part-I
6	Type of Customers Part-I

### Category Code: MBA 007

S.No	Course Package
1	Retail internet banking
2	Retail Deposit Products Salary
3	Mutual Fund-I
4	Mutual Fund-II
5	Forex Remittances
6	Cash Management Services

### Category Code: MBA 003

S.No	Course Package
1	Business Etiquette
2	Negotiation Skills
3	Know Your Customer for Retail Branch Banking
4	KYC-Current Accounts
5	An introduction to Mutual Funds
6	Basics of Life Insurance

### Category Code: MBA 008

S.No	Course Package
1	Cash Management Services Level-II
2	Derivatives
3	Documentary Bills for Collection
4	Factoring
5	Treasury Products Domestic Money Market
6	Cash Management Services

### Category Code: MBA 004

S.No	Course Package
1	Banker Customer Relationship
2	Financial Accounting
3	Regulatory Environment for Banking and Monetary Policy

### Category Code: MBA 009

S.No	Course Package
1	Open Office Calc - Charts
2	Open Office Calc - Data Tools
3	Open Office Calc - File Operations and Editing
4	Open Office Calc - Formatting, Sorting and Filtering
5	Open Office Calc - Formula and Functions
6	Open Office Calc - Handling Worksheets and Views
7	Open Office Impress - Content Formatting and Slide Formatting
8	Open Office Impress - Graphics, inserting objects and Linking

### Category Code: MBA 005

S.No	Course Package
1	Basics of Finance-Risk and Returns
2	Basics of Finance-Time Value of Money
3	Foundation of AML in India
4	Five S
5	Quality and Six Sigma for Beginners
6	Regulatory Environment of Banking
7	Negotiable instruments Acts

**Category Code: MBA 010**

<i>S.No</i>	<i>Course Package</i>
1	Open Office Impress - Introduction, Editing and Viewing
2	Open Office Impress - Working with masters, animation and more tools
3	Open Office Writer - Content Formatting
	Open Office Writer - Graphics
4	Open Office Writer - Introduction & Editing
5	Open Office Writer - Page Formatting
6	Open Office Writer - Tables
7	Open Office Writer - Tools & References

**Category Code: MBA 011**

<i>S.No</i>	<i>Course Package</i>
1	Finacle - Cash Receipts and Cash Payments
2	Finacle - Demand Draft issue
3	Finacle - Introduction and Menu Options
4	Finacle Processes
5	E-Search
6	Rural Education Institutional Finance

**Category Code : MBB 001**

<i>S.No</i>	<i>Course Package</i>
1	Dynamic Queue Management
2	Information Security

**Category Code : MBB 002**

<i>S.No</i>	<i>Course Package</i>
1	KYC - Current Accounts
2	Instant Pin and C Query

**Category Code : MBB 003**

<i>S.No</i>	<i>Course Package</i>
1	Mutual Fund - I
2	Mutual Fund - II

**Category Code : MBB 004**

<i>S.No</i>	<i>Course Package</i>
1	Working Capital Finance Master Level One
2	Working Capital Finance Master Level Two

**Category Code : MBB 005**

<i>S.No</i>	<i>Course Package</i>
1	Cash Management Services
2	Cash Management Services Level II

**Category Code : MBB 006**

<i>S.No</i>	<i>Course Package</i>
1	Commercial Vehicles Loans
2	Construction Equipment Loans

**Category Code : MBB 007**

<i>S.No</i>	<i>Course Package</i>
1	Retail Deposit Products Salary-I
2	Retail Deposit Products Salary-II

**Category Code : MBB 008**

<i>S.No</i>	<i>Course Package</i>
1	All About Waste
2	Five S

**Category Code : MBB 009**

<i>S.No</i>	<i>Course Package</i>
1	Quality and Six Sigma for Beginners
2	Quality tool box

**Category Code : MBB 010**

<i>S.No</i>	<i>Course Package</i>
1	SPRINT Bank@Campus Product
2	SPRINT Debit Card Product

**Category Code : MBB 011**

<i>S.No</i>	<i>Course Package</i>
1	Sprint Graded account product
2	SPRINT Maxi Cash Savings Account Prod

**Category Code : MBB 012**

<i>S.No</i>	<i>Course Package</i>
1	Trade Services
2	Treasury Products Domestic Money Market

**Category Code : MBB 013**

S.No	Course Package
1	Cheque Deposit Machinezz
2	Clearing

**Category Code : MBB 014**

S.No	Course Package
1	Retail internet banking
2	Retail Outward Remittance

**Category Code : MBB 015**

S.No	Course Package
1	KYC - Current Accounts
2	Instant Pin and C Query

**Category Code : MBB 016**

S.No	Course Package
1	Introduction to the SME Business
2	Professional Equipments Loans

**Category Code : MBB 017**

S.No	Course Package
1	Macroeconomics
2	Property Assessment

**Category Code : MBB 018**

S.No	Course Package
1	Retailing Gold Pieces
2	Basics of Retail Asset Finance

**Category Code : MBB 019**

S.No	Course Package
1	An introduction to Mutual Funds
2	Basics of Life Insurance

**Category Code : MBB 020**

S.No	Course Package
1	Basics of Online Money2India
2	Foreign Exchange Services

**Category Code : MBB 021**

S.No	Course Package
1	Farm Equipments Loans
2	Small Agri Loans

**Category Code : MBB 022**

S.No	Course Package
1	General Insurance
2	Retail Demat Program

**Category Code : MBB 023**

S.No	Course Package
1	SPRINT Mobile Banking Product
2	SPRINT Mobile Banking Product
3	SPRINT Young Stars Account Product

**Category Code : MBB 024**

S.No	Course Package
1	Indian Financial Systems
2	Banking An Introduction

**Category Code : MBB 025**

S.No	Course Package
1	Evolution of Money and Banking
2	Overview of Banking

**Category Code : MBB 026**

S.No	Course Package
1	Introduction to Retail Banking
2	Basics of Investing

**Category Code : MBB 027**

S.No	Course Package
1	Law In Everyday Banking
2	Foundation of AML in India

**Category Code : MBB 028**

S.No	Course Package
1	Know Your Customer for Retail Branch Banking
2	Phone Banking Fraud Prevention

**Category Code : MBB 029**

S.No	Course Package
1	Banking Ombudsman Scheme 2006
2	Regulatory Environment of Banking

**Category Code : MBB 030**

S.No	Course Package
1	Business Etiquette
2	Negotiation Skills

**Category Code : MBB 031**

S.No	Course Package
1	Types of Customers Part-I
2	Types of Customers Part-II

**Category Code : MBB 032**

S.No	Course Package
1	Bankers Selling Skill Builder
2	Private Banking Relationship Management Process

**Category Code : MBB 033**

S.No	Course Package
1	Retail Branch Operations
2	Retail Deposit Products Household

**Category Code : MBB 034**

S.No	Course Package
1	Home Loans Products and Credit
2	ICICI Bank Vehicle Finance

**Category Code : MBB 035**

S.No	Course Package
1	Personal Loans
2	ICICI Bank Credit Cards

**Category Code : MBB 036**

S.No	Course Package
1	IT Fundamentals
2	Currency Management

**Category Code : MBB 037**

S.No	Course Package
1	Forex Remittances
2	Treasury Products Forex Operations

**Category Code : MBB 038**

S.No	Course Package
1	Derivatives
2	Advanced Derivatives

**Category Code: MBB 039**

<i>S.No</i>	<i>Course Package</i>
1	Negotiable instruments Acts
2	Basel Norms In Banking Parlance

**Category Code: MBB 040**

<i>S.No</i>	<i>Course Package</i>
1	Business Math
2	Business Math Advanced

**Category Code: MBB 041**

<i>S.No</i>	<i>Course Package</i>
1	Aptitude Test
2	Chequemate

**Category Code: MBB 042**

<i>S.No</i>	<i>Course Package</i>
1	Basics of Finance - Financial Statements
2	Basics of Finance - Risk And Returns

**Category Code: MBB 043**

<i>S.No</i>	<i>Course Package</i>
1	Finacle - Cash Receipts and Cash Payments
2	Finacle - Demand Draft issue

**Category Code: MBB 044**

<i>S.No</i>	<i>Course Package</i>
1	Finacle - Introduction and Menu Options
2	Finacle Processes

**Category Code: MBB 045**

<i>S.No</i>	<i>Course Package</i>
1	Basics of Finance - Time Value Of Money
2	Financial Accounting

**Category Code: MBB 046**

<i>S.No</i>	<i>Course Package</i>
1	Mortgage Finance - Credit and Documentation
2	Property Assessment

**Category Code: MBB 047**

<i>S.No</i>	<i>Course Package</i>
1	Audit and Compliance
2	Compliance with Conscience

**Category Code: MBB 048**

<i>S.No</i>	<i>Course Package</i>
1	Mortgage Finance - Credit and Documentation
2	Mortgage Finance Products

**Category Code: MBB 049**

<i>S.No</i>	<i>Course Package</i>
1	FCRM
2	Foreign Exchange Services - Operations Manual

**Category Code: MBB 050**

<i>S.No</i>	<i>Course Package</i>
1	Special Requests
2	Tasc

**Category Code: MBB 051**

<i>S.No</i>	<i>Course Package</i>
1	Category Code: MBB 051
2	Emergency Response Procedures

**Category Code: MBB 052**

<i>S.No</i>	<i>Course Package</i>
1	Secured Lending Group
2	Small Agri Loans

**Category Code: MBB 053**

<i>S.No</i>	<i>Course Package</i>
1	Quick Cash Deposit & Fast Cash
2	Retailing Gold Pieces

**Category Code: MBB 054**

<i>S.No</i>	<i>Course Package</i>
1	Small Agri Loans
2	Structured Products

**Category Code: MBB 055**

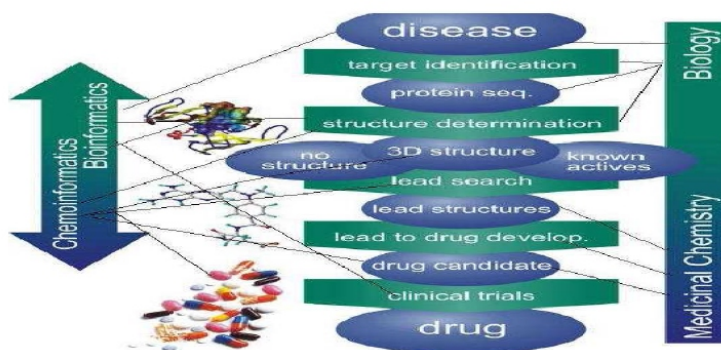
<i>S.No</i>	<i>Course Package</i>
1	NRI Services
2	Retail Outward Remittance

## Bioinformatics / Life Sciences Bio/Chem/Pharm e-Zone

Integrated Sciences is a catch Phrase in the field of learning. Web based training in Biological, Chemical and Pharmaceutical Sciences is undoubtedly an integration of instruction procedure and technotools. It is directed towards gaining a proficiency and specified competency in the area of genome analysis, protein structure predication and also biological/chemical data bases design. These include drug target identification, drug design, Synthesis and patenting of drugs, metabolomics pharmacology and many new morphs in the area. The courses will cater to the demanding scientific and industrial nutrients of expertise in these areas.

### Courses

1. Certificate Course in Bioinformatics
2. Certificate Course in Cheminformatics
3. Certificate Course in Clinical Trials
4. Certificate Course in Pharma Regulatory Affairs



## Certificate Course in Bioinformatics (Code : E Z B)

Bioinformatics is an emerging interdisciplinary area of Science and Technology, encompassing a systematic development and application of IT solution to handle biological information or data obtained by experiments, modeling, database search and instrumentation. Bioinformatics is the study of the inherent structure of biological information and biological systems. It brings together the avalanche of systematic biological data (e.g. genomes) with the analytic theory and practical tools of mathematics and computer science.

Bioinformatics touches all areas of biology, with application to genome analysis, protein structure, prediction, target identification, drug-design, metabolomics and systems biology. Bioinformatics has become of central importance in the genomic and post-genomic age because of the vast amount of information being generated from different disciplines for example sequencing of human, bacterial, rice genomes have unraveled plethora of information or biological data which has wide-spectrum of applications in IT, Pharma or Biotech industries. At present every individual is being intimidated by the hype created around of emerging trends in area of biological, pharmaceutical, chemical or medical sciences and one of them is bioinformatics.

### Aim and Objectives

The course is designed to provide an experience for an individual from any field to get well-acquainted with the tools and concepts of Bioinformatics. The aim of the course is to familiarize the learner with the concepts of computer science that relate to problems in biological sciences, commercial and academic perspectives on bioinformatics, the impact of bioinformatics on the methodologies used in biological sciences and the influence that biological sciences have on computing science.

The course is relevant to a wide range of professionals working in the industries that involve knowledge of networks and databases in bioinformatics and the use and development of computer software for the analysis of biological data, drug designing, target-identification etc.

The course would open new job avenues in the area of biology and students would be well-versed with concepts of bioinformatics and utilizing IT in the Life Sciences domain in the field of Gene-based drug discovery, Drug designing, Disease Diagnosis, Pharmacogenomics and Toxicogenomics.

## Course Module

### Introduction to Bioinformatics

- Bioinformatics concepts and definition
- Bioinformatics in business and pharmaceutical industry
- Internet and Bioinformatics
- Knowledge Discovery and Data mining
- Human Genome Project
- Problems faced by Bioinformatics professionals
- Career Opportunities in Bioinformatics

### Molecular Genetics

- Introduction
- Mendel Law of Inheritance
- Linkage and Crossing Over
- Mutations
- Chromosomal Aberrations
- DNA and its Replication
- Transcription
- Translation
- Regulation of Gene Expression

### Biological Databases and their Management

- Introduction
- Codd Rule
- History of Database
- SQL
- Database Management System
- Biological Databases, Sequence
- Data Normalization Databases

### Biostatistics

- Data Presentation and Tabulation
- Sampling
- Probability and Distribution
- Central Skew ness and Tendency
- ANOVA
- Hypothesis Testing
- Correlation and Regression
- Hidden Markov Model (HMM)
- Simple Algorithms
- Vital Statistics

### Basics of Bio-computing

- Introduction to Computers
- Microsoft Office
- Mail Merge
- UNIX
- Visual Basic
- Application of Computers in Bioinformatics

## Certificate Course in Cheminformatics (Code : E Z C)

Cheminformatics is the application of computational techniques to the discovery, management, interpretation and manipulation of chemical data and information extracted there from. Future Chemical Informatics Systems (CIS) will require a workforce with a solid background in chemistry and an expert grasp of the available computer technology. Chemical, Agrochemical, Pharmaceutical, and Biotechnological companies are in great need of people with extensive knowledge of Chemistry and the computer skills to handle the data generated by chemical researchers. Companies involved in medical, environmental, and chemical instrumentation will increasingly depend on chemical informatics in order to be successful. In addition, database producers, chemical software developers, and those in the primary and secondary chemical publishing areas offer attractive opportunities for graduates of the chemical informatics program.

Cheminformatics techniques are increasingly being used to analyze the huge volumes of chemical data resulting from combinatorial synthesis and high-throughput screening programs. Cheminformatics techniques have application of informatics methods to solve chemical problems i.e. the static and dynamic aspects of chemistry. Cheminformatics deals largely with small molecules and helps bioinformatics to design drug targets.

### Aim and Objectives

The aim of this course is to provide graduates in Chemistry and associated disciplines with knowledge and skill appropriate to career as cheminformatics specialist in the chemical industry and related fields. At the same time it is designed to offer course units that will be essential to professional chemists working, for example, in the pharmaceutical and allied industries, who wish to gain new skills in cheminformatics.

The objective of this course is to provide comprehensive understanding of this fast growing field in science and technology starting from basic principles to the point of application in various fields of Chemistry, Biotechnology, drug development and material science.

## Course Modules

### Basic of Cheminformatics

- Introduction to Cheminformatics
- Evolution of Cheminformatics
- History of Chemical Information Science
- Use of Cheminformatics-I
- Use of Cheminformatics-II
- Prospects of Cheminformatics
- Cheminformatics Glossary

### Chemical Information Sources

- History of Scientific Information Communication
- Chemical Literature
- Chemical Information Searches
- Chemical Information
- Chemical Information Sources
- Chemical Name and Formula Searching
- Analytical Chemistry (Constitutional Chemistry)
- Chemical History, Biography, Directories and Industry Sources

### Chemical Database Design & Their Management

- Database Concept
- Structured Query Language
- Chemical Database Design
- Bio-Catalysis Database
- The MOS Database
- The Failed Reaction Database
- Protecting Groups Database
- Solid-Phase Synthesis Database

### Medicinal Chemistry

- History of Medicinal Chemistry
- Prodrugs and Soft Drugs
- Drug Solubility
- Natural Resources of Lead Compounds
- Pharmacokinetics & Drug Metabolism
- Biological Testing and Bioassays
- Preclinical Testing and Clinical Trials
- Synthesis of Drugs and Intermediates
- Patenting and Manufacturing of Drugs and Intermediates
- Complexes and Chelating Agents
- Molecular Modeling Using zComputers

## Certificate Course in Clinical Trials (Code : E Z T)

Traditional medical practice entails a doctor prescribing for a patient that treatment which in his judgment, based on past experience of himself and others, offers the best prognosis. Since there are few conditions for which treatment is 100% effective, there is much scope for potential improvements in therapy and such improvements are derived via a clinical trial. Clinical trial is a new emerging field in the area of pharmaceutical sciences or medical sciences. Clinical trials are research studies that test the effects of "health interventions" on people. Such health interventions are most commonly new drugs or treatments, though clinical trials may also examine the effects of other health interventions such as diagnostic methods, surgeries or procedures, technological devices, and educational methods.

## Aim and Objectives

This online course aims to endow an overall understanding of clinical trials before moving into the field, and for those who already have general or specialist experience of clinical trials and who wish to broaden their role in the design, management, analysis and reporting of clinical trials. The objective of the course is to provide students with a theoretical and practical understanding of the issues involved in the design, conduct, analysis and interpretation of clinical trials. Further the course aim to develop a theoretical and practical understanding of the issues involved in the design, conduct, analysis and interpretation of randomized controlled trials of health interventions, skills to scrutinize information, to critically analyse and carry out research, and to communicate effectively, describe the uses and applications of the main types of interventional studies: clinical trials and community trials, describe the essential features and stages in the conduct of a clinical trial, and the role of randomization, use of placebo, blinding/masking and intention-to-treat analysis, to equip the students with knowledge of clinical trials and to carry out the trials. The course curriculum would provide the students an update knowledge in order to plan and design clinical trials along with the writing of protocols.

## Course Modules

### Contract Research

- Introduction
- Contract Research Organizations
- Contract Research Areas
- Contract Research Delivery Models
- Contract Research Business Environment
- Contract Research Information Sources
- IT and Contract Research
- Regulatory Affairs and Contract research
- Case- Studies

### Biostatistics

- Data Presentation and Tabulation
- Sampling
- Probability and Distribution
- Central Skewness and Tendency
- ANOVA
- Hypothesis Testing
- Correlation and Regression
- Hidden Markov Model (HMM)
- Simple Algorithms
- Vital Statistics

### Clinical Trials & Regulation

- Introduction
- Features of Clinical Trials
- Good Clinical Trials Practices
- Bio-availability Studies
- Designing of Clinical Trials Studies
- Clinical Trials Delivery Model
- Clinical Trial Informatics

### Contract Research and Clinical Trials Environment

- Introduction
- Contract Research Organizations
- Contract Research and Clinical Trial Environment
- Non-Clinical Safety Studies
- Choice of control Group
- Human Pharmacology
- Post-Marketing Surveillance
- Structure, Contents and Format for Clinical Trial Studies

### Schedule-Y

- Application of Permission
- Approval of Clinical Trial
- Responsibilities of Sponsor
- Informed Consent

## Certificate Course in Pharma Regulatory Affairs (Code : E Z R)

The total revolution of biological and chemical sciences has resulted into new concepts in pharmaceutical sciences giving rise to importance of regulations for the new products. The pharma regulatory affairs are important for the knowledge of the laws and regulations mandated by the federal government, especially those of the Food and Drug Administration (FDA), as they apply to the development, testing, approval, manufacturing, commercialization and postmarketing surveillance of pharmaceutical, biopharmaceutical and medical device products. This program is intended to provide students with a basic understanding of the areas of regulatory affairs and quality operations to give students a thorough and up-to-date knowledge of federal laws and regulations as they apply to all stages of the development and commercialization of pharmaceutical, biopharmaceutical and medical device products.

### Aim and Objectives

The online program aims to prepare aspirants for regulatory affairs positions in the pharmaceutical, biopharmaceutical and medical device industries and to equip them with the educational foundation that will help them advance in the regulatory affairs profession. The course will provide the student with the fundamentals required in both regulatory affairs and quality operations. The course has been framed with the thorough and up-to-date knowledge of federal laws and regulations as they apply to all stages of the development and commercialization of pharmaceutical, biopharmaceutical and medical device products, to prepare students for regulatory affairs positions in the pharmaceutical, biopharmaceutical and medical device industries and to equip participants with the educational foundation that will help them advance in the regulatory affairs profession.

## Course Modules

### Pharma Regulatory Regime in USA, EU and India

- Pharmaceutical Legislation
- Regulatory Bodies
- Import of Drugs in USA
- Export of Drugs from USA
- Licensing in Europe
- Regulations of Export and Manufacture of Drugs in India
- Pharmacovigilance

### Pharma Regulation Practices and Procedure

- Pharma Regulatory Affairs
- Drug Regulatory Authorities
- Good Manufacturing Practices
- Regulations of Pharmaceutical products
- Regulations of Alternative Systems of Medicine
- Bioethics
- Drug Policy in India
- Regulatory profession pharmaceutical

### Regulatory Compliance for Pharma and Biotech Products

- Regulatory Compliance in USA
- Orphan Drugs
- Regulatory Compliance in India and Other Countries
- Drugs and Magic Pharmaceuticals Production in Transgenic Animals
- Future of Compliance-an efficient and effective Commercial Operation
- Strengthening Governance and Regulatory Compliance

The number of career opportunities continues to grow in this field. As regulatory processes increase in complexity and scope, and globalization occurs within the field, there will be continuing industry demand for people with a strong foundation in regulatory affairs. The students of the program will have an understanding of the regulatory processes involved in biotechnology, medical device, pharmaceutical and food products.

Students will become eligible for occupations involving drug or medical device submissions and quality assurance functions and roles. The individuals who are interested in pursuing a career in regulatory affairs would get a thorough understanding of current regulations and their application to the development and commercialization of drug, biological and bio-device products.

The Regulatory Affairs program provides professionals with the specialized knowledge required to help biotechnology, medical device, pharmaceutical and food companies manage regulatory processes.

### Introduction to Pharmaceutics

- Introduction to Pharmaceutical drugs and Products
- Classification
- Testing
- Introduction to Pharmaceutical Chemistry
- Industrial Application

### Good Manufacturing Practices, Quality Assurance and Regulation

- Introduction
- Overview of Good Manufacturing Practices
- International GMP Regulation
- Indian GMP Regulation
- Quality Assurance

## Language Learning ezi

*A language is an exact reflection of the character and the growth of its speaker*  
- Mahatma Gandhi

Language learning ezi way caters to the needs of scholars, professionals, housewives and any one who feels the need to master language skills: listening, speaking, reading and writing. Language is a short hand for certain conventional activities in which we should not strive to seek principles. It has been proven that language is not a biological phenomena, it is a human designed tool so we must care about language we choose to use.

In fact the reality of meaning lies in the form of electrochemical events in our brains. So e-learning would help you connect yourself with the real world experience through intensive language practice. It will undoubtedly help you develop proficiency, fluency and confidence in the use of foreign language of your career needs: English, French, German and Spanish.

The ability to read, think and reason critically, constructed and deconstruct ideas and arguments, verbalize thoughts, opinion and judgments – all this and much more made easy Online. It is chiefly designed to prepare students for career as scholars. If you have the drive to master a foreign language elearning programmes on Banasthali University portal will guide you how to get a first foot in the ladder and make it to the top.

Language Learning ezi is a sure way to success for the freshers.

One can choose any one or more from English, French and German. The program aims to help you master conversation skills, earn fluency in speaking, accuracy in using grammatical structures and short writing assignments. Technically, the site is very well equipped with quick material loading and audio loading.

The skill sets for each language are graded here :

### **O Level**

#### **Listening**

Ability to understand real life spoken English through recording of natural speech, selected and edited.  
Ability to understand spoken discourse which uses elementary spoken structure.

#### **Speaking**

Speaking to engage in simple dialogue.  
To develop oral fluency by focusing on topics that are personally relevant to students and which encourage students to draw on their own experiences, feelings and cultural knowledge.

#### **Reading**

Read and understand simple elementary texts.  
Reading authentic texts through activities and tasks designed to increase the involvement and confidence in the reading process.

#### **Writing**

Write simple sentences and paragraphs  
To personalize their own writing and expand their awareness of different writings- descriptive, narrative, stating opinions.

Giving the learner mastery of and ability to understand and manipulate the basic grammatical structures and the most essential vocabulary items.

## **A Level**

### **Listening**

Listening and understanding the discourse which uses the structure given for the Intermediate level.

### **Speaking**

Speaking to engage in simple conversation

### **Reading**

To read and understand intermediate level texts.

### **Writing**

To write paragraphs and short essays. Giving the learner mastery of and ability to understand and manipulate the basic grammatical structures and the most essential vocabulary items.

Exposing the learner to the culture of the relevant countries. Duration of course 60 hrs of self study on the basis of assignments.

Contents : Type of languages  
a. The language will be contemporary;  
b. suitable to every day situations.

## **B Level**

Consolidating, strengthening and further developing the following four language skills.

### **Listening**

Listening to and understanding the language spoken by the native speaker at the normal pace and rhythm on some familiar everyday topics.

### **Speaking**

To maintain sustained conversation on the topic of general interest.

### **Reading**

To read and understand the material provided on the programme from contemporary writings.

### **Writing**

To compose and write on a range of topics : Descriptive, narrative, brief – essays and letters & memoirs.

Exposing the learner to the cultural item of both Indian and the target language.

Initiating the learner in the use of dictionaries of colloquials and slangs and other specialized mono-lingual dictionaries.

Students will be encouraged to translate from and into the native to foreign language.

Duration of the course about 60 hrs of material will be provided for the self study and other assignments.

The language material will be relevant to the communicative and professional levels. The candidates will be prepared to present his ideas in a cogent manner.

Grammar The student will show fairly good command of B & A level grammatical structure in their everyday use of language.

Cultural Content The programme will include items from cinema, operas, music, art, Literature and other such elements satisfying the professional needs of the learner. The focus will be on the intercultural interaction

Evaluation Evaluation will be based on oral and written examinations.

## English O Level (Code : L E O)

1. The language of the programme is contemporary in nature
2. The language is suited to everyday situation
3. Vocabulary is related to the day to day communication
4. Grammar or language structure is functional in nature
5. Elementary structures required for basic needs.
6. Cultural aspects

### Details of the course

#### Listening :

Listening to conversations pertaining to different situations in life like:

1. Planning for the next day.
2. Asking the details of anything purchased.
3. Enquiring somebody of something
4. Making a call to a bus- stand, at railway station or at a doctors, to make enquires.

#### Speaking

1. A dialogue on daily routines and role play to highlight the usage of simple present tense.
2. A dialogue on what you all have at home and role play highlighting the usage of : have got, there is, there are etc. and vocabulary related to different rooms in the house, food items, clothes, relationships, one's religious and ideological beliefs.
3. Dialogue related to urban and rural life and role play to highlight comparative form and superlatives.
4. Pronunciation of basic vowels, diphthongs and consonants; aspects of connected speech.
5. Primary Stress

#### Reading

1. Reading elementary texts with narration of past events highlighting all aspects of the past tense.

#### Writing

1. Writing in simple sentences about the past experiences, the present moment and future expectations.
1. Simple tense required to express the past and present happenings, and pertaining to requests, instructions, acceptance, refusal and explanation.

## French O Level (Code : L F O)

The objective of the course is to ensure that students understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. It also seeks to prepare the students to introduce themselves, others and ask & answer questions about personal details such as where he/she lives, people he/she knows and things he/she has. The course shall assist students to interact in a simple way provided the other person talks slowly and clearly and is prepared to help.

- I French Alphabet/ Letters and Sounds/ Expression of greeting and introduction
- II Pronunciation Practice/  
Article - Definite/ Indefinite  
Sentence Structure with the auxiliary word "TO BE"  
Numbers : Cardinal / Ordinal  
Interrogative expressions with auxiliary verb "TO BE"
- III Adjective  
Adjective possessive / Demonstrative  
Sentence Structure with the auxiliary verb "To Have"
- IV Preposition/ Time/ days/Months/Seasons
- V Article Partitif/ Passages with the uses of Auxiliary verbs To Be and To Have (present Tense)

### Evaluation :-

1. Grammatical Structures
2. Reading Comprehension
3. Communication

## German O Level (Code : L G O)

The objective of the course is to ensure that students understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. It also seeks to prepare the students to introduce themselves, others and ask & answer questions about personal details such as where he/she lives, people he/she knows and things he/she has. The course shall assist students to interact in a simple way provided the other person talks slowly and clearly and is prepared to help.

- I The German Alphabet  
Letters and sounds  
Topic : Expressions of greeting and introduction
  
- II Pronunciation Practice  
Simple Questions words; negation; kein.  
It Sentence Structure; articles i.e. definite and indefinite.  
Topic : Asking for specific information
  
- III Personal Pronouns  
Verb Conjugation: Present tense  
Topic : Telephone Conversation
  
- IV Numbers  
Time  
Topic : asking for age, price, numbers
  
- V Verb conjugation : to have, to be (negative, interrogative)  
Introduction of the direct object (Accusative)  
Topic : Family, relations

## Other European Language

Elementary level one semester certificate courses are also offered in Spanish / Italian / Dutch heaving course content comparable to that of O-level courses in French & German.

## ICT e-Sphere

Skills in effective use of Information & Communication Technologies are now as essential as the three basic "R"s-Reading, Writing & Arithmetic. Banasthali in addition to offering regular University degree programmes in the fields of IT & Communication also offers a number of part time certificate and diploma courses. These courses range from introductory Computer awareness to advanced skill development in Web Technologies and Software Engineering. The benefits of offering all these courses online does not need special emphasis. Presently we are starting from the following two:

- Diploma in Networking
- Diploma in Internet & Web Designing

The curriculum covers a broad range of topics from the basis on how to build a network to how to design a website and more complex networking concepts.

### Diploma in Networking (Code : E S N)

It provides students with the basis foundation in networking. Students who successfully complete this portion of the program are eligible to earn certificate of "Diploma in Networking" from Banasthali University. However if anyone wishes to get certificate of Cisco Certified Network Associate (CCNA) he/ she has to appear in a CCNA final certification examination from any of The Prometric Thomson Learning centre or VUE from all over the world on payment of a prescribed fee. However, if a student gets 80% or more scores in their course module examination they will attract a flat discount of 70% in the form of CCNA voucher.

The curriculum includes four separate modules as given under the curriculum emphasizes the use of decision-making and problem-solving techniques to resolve networking issues. The students learn how to install and configure switches and routers in local and wide-area networks using various protocols, how to provide Level 1 troubleshooting service, and how to improve network performance and security.

#### Course Modules

1. Computer Basics, OSI model and Industry Standards, LAN, Network topologies, IP addressing, including subnet masks, Networking components and Collision Domain, Structured Cable, Routing and Addressing, Basic Network design, Ethernet technology.
2. WANs and Routers, Router CLI, Router Components, Router Startup and Setup, Beginning Router configuration, IOS, TCP/IP, Routed and Routing Protocols, Network Troubleshooting, Access control lists

3. Advanced router configuration, LAN switching theory, VLANs and VTP, Advanced LAN and LAN switched design, Novell IPX, Case studies, OSPF/ EIGRP, Spanning tree protocol
4. WAN theory and Design, WAN technology, PPP, Frame Relay, ISDN and DDR, NAT, PAT, and DHCP Network troubleshooting, Case studies.

The curriculum covers a broad range of topics from the basis on how to build a network to how to design a website and more complex networking concepts.

### Diploma in Internet & Web Designing (Code : E S W)

The course is mainly focused on Internet and its services and web design. After completion of the course the students will be able to design web pages using Java programming, HTML and ASP.

#### Course Modules

1. Computer Networks concepts, Overview of OSI model, Introduction to TCP/IP, Structure of Internet, Concepts of IP Addressing, Naming services, and Domain name server, Various services of Internet, e-mail, Search Engines, Downloading, Chatting, Video Conferencing.
2. Web Server and Browsers, Web Documents, HTML and its feature, Embedding of Images, Audio and Video, Web Designing Tools (Front Page., Express, Visual InterDev, etc.), Concept of Dynamic Web Pages using , JavaScript and VB Script, Server side ,programming and Database Interfacing, Introduction to ASP.
3. OOP Concepts, Basic features of Java, Variables and Data Types, Operation and Expression, Control Constructs, Objects and Classes in Java, Essential Java Classes and packages, Vector, I/O, Exception Handling, Threads and programming with Thread.
4. Lab Work
  - (i) Java Programming
  - (ii) Web page Designing & Hosting project

The students need to design and develop a project using Web programming skills