AFTER INTERMEDIATE WHAT? (COURSES)

i) Professional Degree Courses

Intermediate (10+2) Course is the crucial and decisive course for the career of a young man or woman. With the much-thought, carefully finalized choice of the subject combinations at the Intermediate level, the choice of the youth with regard to the stream of their future studies is decided or crystallized.

There are usually five Subject groups at the Intermediate level:

- ➢ **Inter (MPC**)   leading to Engineering and Technology studies
- ➢ Inter (BPC), leading to Medicine, Agriculture and Animal Husbandry and Natural Sciences studies
- ➢ **Inter(CEC**)leading to Commerce and Business Management studies
- ➢ Inter (HEC) leading to Social Sciences and Languages studies
- ➢ **Inter(Vocational**) Courses allowing vertical Professional studies in the streams concerned.

We shall now look at the Professional Courses available to the students, after 10+2, stream-wise. (a) Professional Degree Courses after Intermediate (10+2), (MPC) Course:

1. Actuarial science,

2. Agricultural Engineering

3. Food Science And Technology

4. Bio-Medical Engineering

5. Architecture and Planning

6. Art and Design

7. Chemical Sciences

8. Computer and Information Technology,

9. Engineering and Technology,

10.   Mathematics and Statistics

11.   Pharmacy,

12.   Physics

13.   Artificial Intelligence,

14. CAD/CAM

15. Flying

16. Merchant Navy

17. Plastics Engineering and Technology,

18. Ship Radio officers.

Let us now look at these options briefly one by one:

1. ACTUARIAL SCIENCE:

1. Actuarial science essentially deals with the calculation of Insurance risks and premiums. It involves the application of mathematical, statistical and economic analysis to a wide range of decision –making processes in insurance, investment, financial planning and management. The Actuary, who is qualified in Actuarial science, plays an essential role in insurance business. The profession requires intensive training in mathematics and statistics, accounting and insurance probabilities.

He works out what premium an insurance company should charge to cover a particular risk. He calculates, for example, death rates for given ages and occupations, or liability for accident to certain types of Drivers.

This information reduces the element of risk for insurance companies, because events as a whole, unlike individual events, are predictable. .Thus the Actuary determines premium rates, studies mortality trends constructs mortality tables, lays down underwriting standards, etc.

Actuarial profession is relatively less known in India. The Actuarial profession was formally established in 1848with the formation of the Institute of Actuaries, London. At one point of time,it was the only Institute in the World, to conduct the professional Examination. Almost all the Actuaries appointed in the Life insurance. Almost all the Actuaries appointed in the Life insurance Corporation of India, qualified from this Institute.

Now there are the Faculty of Actuaries (Scotland) and the Society of Actuaries (USA). Its Indian counterpart, Actuarial Society of India, although established in 1944, started conducting examinations for a corresponding Indian qualification only from 1989.

Courses available in India:-

- ➢ The Actuarial Society of India situated at 9 Jeevan Udog, 3rd Floor,278 DN Road, Fort, MUMBAI-400 001conducts three stage examination leading to the Fellow Membership of the Society recognized as the professional qualification by the Insurance industry.

A candidate with 16 years of age and having passed the 10+2examinationand possessing a high degree of proficiency **in mathematics** as well as in other subjects is eligible for admission to the Entrance Examination, which consists of two papers --- Mathematics and English (Gen Essay and Precis), both of three hour duration. The Examinations are held twice a year. (May and November).

The Society advises that any standard textbook prescribed for B Sc.-level studies covering Integral calculus, theory of Equations and Higher algebra should be used to prepare for the Examination.

- ➢ University of Mumbai: BSc (with Actuarial Science as one of the subjects)
- ➢ University of Goa: BSc (with Actuarial Science as one of the subjects)
- ➢ Bharathidasan University : One-year Post graduate Diploma in Actuarial Science,
- ➢ Bishop Heber College (Tiruchirapally): One year Post-graduate Diploma in Actuarial Science.
- ➢ Several private Institutes have also come up in Hyderabad, training in Actuarial science.

With the liberalization of the Indian economy, and the enactment of the Insurance Regulatory and Development Authority (IRDA), Act, 1999privatisinginsurance business and permitting the entry of foreign insurance companies in India, the job prospects are quite bright. Apart from taking up employment in Insurance companies, the Actuaries can get opportunities in in any other sector, where finance, investment, statistics – based forecasting is involved. Like their counterparts in Chartered Accountancy, Cost Accountancy and Company secretary ship, professions, they can undertake practice to advise on matters like pension, gratuity and retirement benefit schemes.

2. AGRICULTURAL ENGINEERING:-

Agricultural Engineers apply engineering principles to problems in agriculture. They design and develop agricultural equipment and machinery and also work on soil and water conservation, irrigation, and drainage systems. Agriculture engineers contribute to making agricultural farming easier and more productive and profitable through the introduction of new farm machinery and through advancements in soil and water conservation. The nomenclature of the degree is either BE (Agriculture) or B Tech (Agricultural Engineering) at the first degree level.

The Course is offered in our State through the EAMCET.

3. FOOD SCIENCE AND TECHNOLOGY:

At the first degree level, the College of Agricultural technology (PARBHANI 431402) of the Marhatwada Krishi Vidyapeeth offers B Tech (Food Science). The College of Agriculture Engineering (Coimbatore-641003) of the Tamilnadu Agricultural University offers B .Tech. (Food Processing Engineering) course.

On obtaining a graduate or Post-graduate degree in a discipline of agriculture and allied sciences, there are a wide range of options and opportunities of a career in teaching, research and transfer of technology areas in State Agricultural Universities, State Departments of Agriculture and Animal Husbandry, NGOs and in industry. Even banks which advance credit and loans for agro-based projects employ agricultural specialists. The Indian Council of Agricultural Research (ICAR), Krishi Anusnadhan Bhavan, pusa, New Delhi110012 an autonomous body under the Department of Agricultural Research and Education is one of the largest employers of scientific manpower in the country.

B.TECH (FOOD TECHNOLOGY) AT OSMANIA::

There is a separate College of Technology at osmania university, Hyderabad.

Presently, the College offers the following courses:

Sl.	Course	Students Intake	Duration
1.	B.Tech (Chemical Engineering)	60	4 years
2.	B.Tech (Food Technology)	20	4 years
3.	B.Tech (Textile Technology)	20	4 years

Eligibility for Admission

- A candidate for admission to the Four Year Degree course in Technology must have passed the Intermediate Examination of the Andhra Pradesh State Board of Intermediate Education with Mathematics, Physics and Chemistry as optional subjects or any other examination recognized by the Osmania University as equivalent thereto.
- All the eligible applicants will have to pass the Entrance Examination conducted by the Government of Andhra Pradesh. The candidates will be admitted strictly in accordance with the merit secured at the Entrance Examination keeping in view of the rules in force regarding the reservation of seats to various categories of candidates.

4.BIOMEDICAL ENGINEERING:

Biomedical Engineering (BME) constitutes human beings earliest efforts to understand the living world in terms of the basic sciences and to comprehend the body mechanism in terms of their technological creations. Biomedical Engineering involves the study and application of engineering processes for diagnosis and therapy. It is a rapidly changing interdisciplinary domain, in which each branch of engineering interacts with a number of other disciplines to yield a fundamental understanding of health maintenance processes and improved diagnosis, optimal interventional (surgical, therapeutic & rehabilitative) procedures, prosthesis and organ assist systems, health care systems performance and econometrics. Osmania University is the first University to start Biomedical Engineering at undergraduate level in the country. The course was started in the year 1982 with an intake of 10 students in the Department of Electronics and Communications Engineering. An exclusive Biomedical Engineering Department was formed in the year 1993 to give the much needed thrust to the programme.

The student intake was enhanced to 30 in the year 1996.The Department moved to its present premises in the year 1997.

The Department has been engaged in research and consultancy projects. It received research grants from various government agencies such as AICTE; UGC, DST, TEQIP (Phase I & II) etc., The Department established a Biomedical Instrumentation centre (BMIC) to cater to the needs of medical profession. The B.E (BME) programme of the department has been accredited by the NBA for the five years with effect from August 2013.

Career Options: After completion of the course, the students may find place in

- o MNC's like SIEMENS MEDICAL SOLUTIOINS as a Biomedical Engineer.
- o IIT's or Universities in India/Abroad for Masters Programme or Ph.D programme.
- o Hospitals as a Biomedical Engineer.
- o KPO (Knowledge Process out Sourcing) based Companies as a Knowledge Scientist.
- o IP (Intellectual Property) field.
- o Society as a good Entrepreneur.
- o

Field	Organizations
Software	Infosys, CTS, Wipro, Deloitte, Intergraph, TCS, Etc.
Hospitals	Kamineni, Global, Apollo, CARE, Medicity, Gandhi, NIMS, Yashoda, Vasan Eye care, Oxygen, rainbow childrens hospital, innova, Galaxy etc
Medical Device companies	Siemens Medical, GE healthcare, L & T medical, Philips medical, BPL medical, Novartis healthcare, Medisun, Pricol medical systems, Jhonson & Jhonson, Covedien - Delhi, Medtronic, Baxter,Boston scientific, Veol Medical Technologies, vTitan Corporation Pvt. Ltd, Relisys Medical Devices Limited, MediVed Innovations Etc.
Knowledge process Outsoursing based companies & IPR Related field	Evalue Serve – Delhi, CPA Global – Delhi, Scitech – Hyderabad,Pangea3 - Mumbai,Dolcera – Hyderabad, Deloitte healthcare consultancy

Research Opportunities	IISC, IIT's, CSIR institutes, CCMB, IICT, NIMHANS (DRDO), Universities, DEBEL, Many of the universities in abroad are offering research positions in Biomedical Engineering.
Higher Education	India(IIT', IISC,NIT's, Central Universities, State Universities, Deemed Universities like MIT, SRM, VIT, Satyabhama etc,.) & Abroad(Most of the universities in USA, Germany, Sweden, nether lands, UK, Switzerland offers MS in Biomedical Engineering, and the sample are Georgia, KTH Royal, Wisconsin, Texas, South western Medical center Dallas etc,.
Public sector in India	HSCC, NIMHANS, HLL, DEBEL, ESI Govt Hospitals, All the government hospitals & Medical Colleges of the state and central Govt.

5.ARCHITECTURE:

Architects are responsible for the planning, designing and supervision of the construction of all types of buildings----residential houses and complexes, educational and commercial complexes hospitals, hotels, houses of worship and many more. The design of buildings involves far more than aesthetics and its appearance. Buildings must also be functional, safe, and economical and must suit the requirements of the people who use them. Architecture also relies on technology and materials science to ensure that the structures withstand heavy loads and tresses. Architect take all the aspects into consideration.

Education in architecture is provided primarily at two levels-Polytechnic Diploma and first degree level, leading to the B Arch degree.

The conduct of aptitude test is mandatory for admissions to the 5-year B. Arch. course by all colleges or institutions where Architectural Education is given, leading to grant of Recognized Qualification by authorities. Such Colleges or Institutions include a University, its department, its constituent college and its affiliated college; a deemed to be University; institutions established by Act of Parliament; and National Institutes of Technology and institution for higher education declared to be a University.

b.	No admission shall be made, it is prescribed, under the Minority Institution/Management/Non-Resident Indian/Person of Indian Origin or any another Quota unless a candidate is subjected to the aptitude test in architecture.

c.	separate aptitude test in Architecture is advised to be conducted and such test should not be combined with the tests for admissions to Engineering, Pharmacy, Medicine and other disciplines. Similarly, admission counseling are to be conducted independently

1.5 The candidates admitted to 1st year of a 5-year course without appearing in the aptitude test in architecture and who have been granted B. Arch. degree or other qualifications shall not be deemed to have attained recognized qualification listed in the schedule of qualifications appended to the Architects Act, 1972. Such candidates will not be eligible for registration as an architect with the Council of Architecture.

ELIGIBILITY for Admission

No candidate, with less than 50% marks in aggregate, shall be admitted to the architecture course unless he/ she has passed an examination at the end of the new 10+2 scheme of Senior School Certificate Examination or equivalent with Mathematics as subjects of examination at the 10+2 level.

or

10+3 Diploma (any stream) recognised by Central/ State Governments with 50% aggregate marks.

or

International Baccalaureate Diploma, after 10 years of schooling, with not less than 50% marks in aggregate and with Mathematics as compulsory subject of examination.

All Admissions to Architecture degree course shall be subject to passing of National Aptitude Test in Architecture (NATA) conducted by the Council of Architecture.

Aptitude Test

The National Aptitude Test in Architecture (NATA) conducted by Council of Architecture is mandatory for admission to first year B.Arch. course for all architectural institutions in the country, including NITs, IITs, Government Institutions, Government aided Institutions, Universities, Deemed Universities and Private Universities established by a Central or State Legislature and other private institutions, for the academic session 2007-2008. It shall be mandatory for every architectural institution imparting 5-year B.Arch. degree course in the country to join the NATA and to admit students on the basis of valid NATA marks in the said course.

The test shall consist of 2 papers:

(i) Test - I – Aesthetic Sensitivity - 100 marks - duration of test: One hour.
(ii) Test - II – Drawing - 100 marks - duration of test: Two hours.

3.1 Test - I

Aesthetic Sensitivity is to evaluate candidate's perception, imagination and observation; creativity and communication; and Architectural awareness. The test shall comprise of:

(i)   Visualising three dimensional objects from two dimensional drawings
(ii)   Visualising different sides of three dimensional object
(iii)   Identifying commonly used materials and objects based on their textural qualities
(iv)   Analytical Reasoning
(v)   Mental Ability
(vi)   Imaginative comprehension and expression
(vii)   Architectural awareness

3.2 Test - II

The Drawing aptitude of the candidate shall be judged on the following aspects :

(i)   Ability to sketch a given object proportionately and rendering the same in visually appealing manner
(ii)   Visualising and drawing the effects of light on the object and shadows cast on the surroundings
(iii)   Sense of perspective drawing
(iv)   Combining and composing given three dimensional elements to form a building or structural form
(v)   Creating interesting two dimensional composition using given shapes or

forms
(vi)   Creating visual harmony using colours in given composition.
(vii)   Understanding   of   scale   and   sense   of   proportion
(viii) Drawing from memory through pencil sketch on themes from day to day experiences

Competent Authority and Conduct of Aptitude Test

The admissions shall be carried out by the Competent authority i.e. the Government or University, or such authorities/ institution concerned [School/ College of Architecture]/ Association or Federation of Institutions [Schools or College of Architecture], as approved by the Government / University, based on the marks obtained in NATA and the qualifying examinations as mentioned above, in the ratio of 50:50.

All architectural institutions in the country shall be required to submit a list of students admitted in the B.Arch. degree course, mentioning the total NATA score and total marks in qualifying examination, to the Council of Architecture.

Admission Counseling

The Admission Counseling for the candidates who have applied for admission to the 5-year Degree Course in Architecture should be held independent of the counseling for Engineering, Pharmacy and / or Medicine and other disciplines.

Persons interested in architecture should possess several aptitudes and interests found in businessmen and entrepreneurs, creative artists and engineers. After the completion of the degree in Architecture, the candidates will get many job opportunities in Government Departments and Private architectural firms.
Architecture Graduates can starts Architectural Assistants or junior designers under the guidance of experienced professionals.

6.BACHELOR OF FINE ART at JNTU, Hyderabad:

U.G COURSES : SCHOOL OF PLANNING AND ARCHITECTURE

S.No	Course	Intake	Eligibility	Admission Procedure	Duration Of Course	Regular & Part-Time	Tution Fee
1	B.Arch (General)	45	10+2 NATA	NATA	5 years	Regular	Rs.10,000/- Per annum
2	B.Tech (Planning)	40	10+2 EAMCET	EAMCET	4 years	Regular	Rs.31,000/- Per annum
3	B.Arch (SSS)	40	10+2 NATA	NATA	5 years	Regular	Rs.31,000/- Per annum
4	Bachelor of Design	60 (SSS)	10+2	Entrance Test	4 years	Regular	Rs.31,000/- Per Annum
5	B.Tech (Digital Techniques for Design and Planning)	60	10+2 EAMCET	EAMCET	4 years	Regular	Rs.31,000/- Per annum
6	B.Tech (Facilities and Services Planning)	60	10+2 EAMCET	EAMCET	4 years	Regular	Rs.31,000/- Per annum

DEGREE COURSES AT NATIONAL INSTITUTE OF FASHION TECHNOLOGY, Hyderabad:

8.B.TECH. (APPAREL PRODUCTION)

The four year Bachelor program is multidisciplinary, technological in character and is designed to meet the requirements of ever emerging challenges of the apparel industry. This program has been designed, keeping in mind the core apparel manufacturing technology, with emphasis on best practices in Apparel Manufacturing. The program prepares professionals who can significantly contribute to the fashion technology domain of the apparel industry.

The industry responsive course curriculum, state-of-the-art infrastructure, practical insights in real world through constant interaction with apparel industry along with experienced faculty helps the department to stay competitive and maintain the long standing tradition of providing highly trained personnel in garment manufacturing setups.

Course Content

Year-1
The first Foundation year the emphasis is on the understanding of the fundamentals & concepts of Design, Management & Technology for Fashion Industry. This creates a firm foundation for the students to understand the fast changing multidimensional fashion industry.

Year-2
The second year lays the foundation for the specialization of apparel technology subjects like understanding the raw materials through the working of the machine fundamental to apparel manufacturing. Introduction to statistical tools and software related to the apparel industry. The students also get hands on experience of how to transform the raw material from 2D to 3D through pattern making and garment construction.

Year- 3

The third year progresses from basics to a more complex and diverse subjects to impart the knowledge in production planning, operations management, quality management, fashion merchandising, costing and work study. The subjects of pattern making and garment construction move from basic garments to specialized products. The departmental electives offered in diverse and contemporary topics like Sustainable Production and IT applications give the required edge to the students. The understanding and comprehension of the textile fabric as raw material is enhanced with a four week textile internship during the 3rd year.

Year-4
The Final year equips students to not only learn through an intensive 14 week apparel internship but also introduces them to application based subjects like Plant layout, Ergonomics, Lean Manufacturing, Product Analysis and Development, Apparel CAD and Grading. The students learn about how to put their learning into action by undertaking a research based project in the final semester. Working on the real live projects and the implementation of their project gives them a comprehensive learning experience thus preparing them for their careers as apparel professionals. During the 3rd and 4th year, NIFT also offers a chance for the students to undertake twinning programs for a semester with fashion universities abroad and thus get a global exposure.

Careers:

The program equips students to pursue wide range of careers in areas of garment Production, Quality Assurance, Garment Fit, Industrial Engineering, Product Development, Sourcing, Project Analysis, Production Planning, Entrepreneur, Human Resource Management, System Analysis, Software Application and Merchandising (retail and export).

Star-Employers:
Levi Strauss; Shahi Exports Pvt Ltd; NSL Pvt Ltd; Amabattur Clothing Company; AYN Accessories (Hong Kong);Bombay Rayon Fashions Ltd.; Celebrity Fashions ; Color Plus; Reliance Retail ; Reliance Trends; Gokaldas Exports; ITC LRBD; Inditex; Decathlon ; Laguna Clothing; L T Karle; Madura Garments; Pantaloon ;Taffles ; Texport Overseas; Third Eyesight ;Komal Tex Fab ;Modern Denim ;Orient Craft; Arvind Mills;Scotts Apparels Group; Neeti Clothing; Matrix Clothing ;Rajesh Bheda Consulting; Pokarna Group, Gini & Jony, Integra Apparels, Taffeles, ColorPlus, Celebrity Fashions, Amabattur Clothing Company, Texport Syndicate, Gokaldas Exports, etc.

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9.CHEMISTRY FOR A CAREER:

Chemistry may be defined as a subject which is concerned with synthesis, properties and reaction of molecules (i.e. the combination of aoms) and the application of this information for a wide variety of purposes.

Such hybrid names as Medicinal Chemistry, Biochemistry, Agricultural Chemistry, Environmental Chemistry, Geochemistry, Fuel Chemistry, Petroleum Chemistry indicate the widespread usefulness of the Chemistry .The application of Chemistry for productive purposes has given rise to a an engineering discipline called Chemical Engineering .As a subject of study,

Applied Chemistry, (or Industrial Chemistry) is taught in the Science Faculty of Universities.

Chemical Engineering and Chemical Technology, on the other hand is are taught at the Engineering Faculty of the Universities.

Chemistry as one of the subjects is offered at the BSc level The Pondicherry University has introduced a five-year integrated MSc program in Sciences, which is open to 10+2 candidates.

In Hyderabad, the Central University also offers the 5-year Integrated Course, the details of which are given below:

In the process of the fulfillment of the set objects of the University, a Centre for Integrated Studies (CIS) has been established in the year 2006-07 to offer 5 year Integrated Master's Degree courses in several subjects for imparting specialized education to the young boys and girls on completion of their +2 level of education.

Courses offered by the Centre
The Centre offers 5-year integrated Master's Degree courses in Science, Humanities and Social Science subjects.

An overview of the above courses:

The five year Integrated M.A. (I.M.A.) and M.Sc. (I.M.Sc.) course of the University of Hyderabad is not merely an integrated program that combines pre-graduate and post-graduate studies, but is also trans-disciplinary, cutting across several disciplines. Its special features are :

Facilities: Central Library with a good collection of books and periodicals, computing facility with internet access, experimental laboratories and hostel accommodation on the campus.

Flexibility: The credit system has the advantage of allowing the student ample choice of courses. (The students are permitted to exercise their option of subjects either soon after admission, or at the end of first year, or at the end of second year or even at the end of third year in certain courses).

Research orientation: There will be a component of research project in the last year (5th year).

Breadth: The subjects from Sciences, Humanities, and Social Sciences are offered in the first 2 years for all the students of these courses.

Academic atmosphere: These students will be amidst about 3000 students engaged in higher studies and research.

Financial Assistance: Every student admitted to these courses will be paid financial assistance. At present the value is Rs.500/- p.m.

Important points to be noted:

a) All courses are full time regular courses. There is no provision for exit in between.

b) The Medium of Instruction is English for all the courses except the language courses which will be taught in the language concerned. Therefore, proficiency in English is very much required.

Courses in Sciences:

The subjects for Integrated. M.Sc courses in Mathematical Science, Physics, Chemical Science, and Systems Biology are common in the first semester. The students with Biology background in +2 stage, who left Mathematics after 10th are expected to put in necessary effort to learn Mathematics needed for other courses. Similarly, the students who studies Mathematics in +2 stage and left Biology after 10th are expected to learn necessary biology. To provide necessary help in this direction, the University will run bridge courses in the first two semesters. The students who join the programme will be required to attend the relevant bridge courses. They are also encouraged to approach and seek help of the concerned faculty members and their Mentors.

Entrance Examination: The admission for these courses are open without any test/interview to all IIT-JEE 2009 rank holders/extended rank holders and also different streams of KVPY 2009 scholars and the top rankers (1st ranker only) of different State Boards of education at +2 level. Candidates with a minimum of 60% marks at +2 level of education (Intermediate, CBSE/ICSE/HSC/Equivalent with science subjects) are eligible to apply

SelectionProcedure:
The following procedure shall be followed for selecting the candidates for different Integrated Master's degree courses :

a) All eligible applicants will be called for the written test to be held at 26 centres as at page ……. Only such candidates who are found successful in the written test will be called for the interview to be held at University Campus, Gachi Bowli, Hyderabad – 500 046.

b) The written test will be in the form of simple objective type questions of +2 standard of two hours duration to be answered in the OMR sheet with black ball point pen or black sketch pen. There is a possibility of negative marking for wrong answers. Specific instructions will be given in the question paper/answer book.

c) The weightage for different components for the final selection for admission will be as follows :
Written test carries 75 marks and interview carries 25 marks.

Reservation of seats for SC/ST/OBC/PH candidates:

As per the policy of the Govt. of India, 15%, 7.5%, and 3% of the seats are reserved for SC, ST, and Physically Challenged candidates respectively. 27% of the seats reserved for OBC is sub judice and subject to the final decision of the Govt. of India. For more details refer to the provisions at pages 4 to 5 of this brochure.

Reservation of seats for candidates from the Union Territories / North-Eastern States:

Over and above the intake mentioned at page 21, 2 seats for the I.M.Sc courses (all the four streams put together), 2 seats for the I.M.A. courses in Humanities (all the five streams put together) and 2 seats in I.M.A. courses in Social Sciences (all the five streams put together) are reserved for the candidates from Union Territories/North Eastern States, viz., Tripura, Sikkim, Andaman & Nicobar Islands, Manipur, Mizoram, Nagaland, Arunachal Pradesh, Lakshadweep, Dadra and Nagar Haveli. The selection will be made on the basis of the relative merit among all the applicants nominated by the concerned UT/NE State Governments. The nominations of the candidates should reach the University through the respective UT/State Government.

Reservation of seats for Foreign Nationals / NRIs:

Foreign Nationals and Non-resident Indians (NRIs) will be admitted over and above the approved intake of the Integrated .M.Sc and I.M.A. courses up to the extent of 15% of the sanctioned seats.

Contact Persons:

Prof. K. P. N. Murthy
Director
Tel: 23138501, 23138500

Chemistry is considered as the "mother" science .It offers a wide range of career opportunities in such diverse areas as teaching, research, chemical and related industries, consultancy and entrepreneurship. Entering the teaching profession needs valid UGC-CSIR NET score or State level Eligibility Test (SLET) score. Persons with industrial experience can either opt for consultancy, or can themselves set up a venture.

10.COMPUTER SCIENCE AND INFORMATION TECHNOLOGY:

Several Universities have introduced Courses like BSc (Computer Science),BSc (Hons.) Computer Science, B Com (Computer Science), BSc (Computer Applications).

BCA (Bachelor of Computer Applications) like any other first degree course, is of three years duration. Eligibility requirement is a pass in 10+2examination, preferably with Mathematics. At present BCA degree holders can further study MCA and MSc (Computer Science) Courses only.

BCA Course is available at A V College of Arts and Commerce, Gagan Mahal Hyderabad and Aurora Degree College, Chikkadpally, and Vivekananda School of P G Studies, Sainikpuri, Secunderabad, etc.

DOEACC COURSES of Govt. of INDIA:

DOEACC Course 'A' Level
Introduction
'A' level course of DOEACC Scheme is equivalent to an Advanced Diploma in Computer Applications. Students can acquire this qualification by undergoing this course and passing the examination conducted by the DOEACC Society. Working professionals can also appear in this examination directly, provided they possess the requisite educational qualification as indicated below.
Eligibility
i) For students appearing through an institute Level 'O' /Government recognized polytechnic engineering diploma after class 10. Followed in each case, by an accredited 'A' level course (no concurrency). A Government recognized polytechnic engineering diploma after 10+2 / Graduate and an accredited 'A' level course in each case. ii) For students-at-large (Direct Applicants)Level 'O'/Government recognized polytechnic engineering diploma/Graduate. Followed in each case, by one year relevant experience*. The 'A' level diploma will awarded only after successful completion of the academic stream i.e. polytechnic engineering diploma after 10+2 or degree. *Relevant experience connotes job experience in IT, including teaching in a recognized institution as faculty member, excludes coaching.

Syllabus

The syllabus for 'A' level has been diversified. It contains:
- eight compulsory module and,
- two elective papers.

In the diversified syllabi, new subjects have been added as electives and certain amendments have been made to the syllabus on some of the subjects. All the subjects prior to diversification have been retained on diversification of the syllabus, with the amendments mentioned above.

The syllabus for 'A' level can be obtained by post or in person from the DOEACC Society at a cost of Rs.150/- .

Examination: Examination for 'A' level will be held only under the diversification syllabus from January 2000 onwards. 'A' level as a whole is a sub-set of 'B'.

Papers: The papers for 'A' level are as under:-

Subject Code		Subject
A1-R3		IT Tools and Application
A2-R3		Business Systems
A3-R3		Programming & Problem solving through "C" Language
A4-R3		Computer Organization
A5-R3		Structured System Analysis & Design
A6-R3		Data Structure through "C" Language
A7-R3		Introduction to Data Base Management Systems
A8-R3		Basic of OS, Unix & Shell Programming
A9-R3		Data Communication and Networks
A10.1-R3	Elective	Introduction to Object Oriented Programming & C++
A10.2-R3	Elective	Introduction to Object Oriented Programming through Java
A10.3-R3	Elective	Computer Graphics

Project

At 'A' Level there is one project. 100 marks are assigned. The project has to be submitted along with a fee of Rs 500/- and a certificate is to accompany it. A viva-voce will be conducted by an expert nominated by the DOEACC Society, as far as possible near the candidate's location.

Government Recognition

The Ministry of Human Resource Development, Govt. of India has recognized 'A' level examination conducted by the Computer Society of India (CSI) under the Department of Electronics Accreditation of Computer

Courses (DOEACC) Scheme as equivalent to Advanced Diploma level course for the purpose of employment to posts and services under the Central Government vide their notification No: F 18-23/92-TD.V/TS-IV dated 10th April1996. In view of the above notification the passed out candidates with 'A' level qualification from the DOEACC Society will henceforth be the eligible for registration in employment exchanges for job assistance.

According to NASSCOM (National Association for Software Service Companies) report, the major software companies still prefer candidates who hold BE /BTech and ME/MTech degrees. The main reason is that the formal Universities expose students to basics of computer technologies. Moving on to any specialized application areas becomes easier for the products of the formal system .many software companies therefore recruit such Graduates, and subject them to rigorous in-house training.

However not many students can get entry into the prestigious Engineering Colleges and technical institutions. Private institutes therefore become the only route to enter the world of Computers. They need to be chosen carefully after ascertaining all the relevant facts like Faculty, hands –on experience, extent of syllabus, skills taught, fees charged by others, placement prospects and assistance for it .etc.

11. ENGINEERING AND TECHNOLOGY COURSES:

In Andhra Pradesh, students with Intermediate passed with MPC group and holding required rank in the EAMCET admission Test are admitted in any of the following Engineering and technology Courses:

Aeronautical Engineering

Aerospace Engineering

Agricultural Engineering

 Automobile Engineering

Bio-Medical Engineering

Bio- Technology

Ceramic Technology,

Chemical Engineering

Chemical-Petro Engineering

Civil engineering

Civil And Environmental engineering,

Commercial agriculture and Business Management,

Computer Science and Engineering,

Computer Science and Systems Engineering

Computer science and Technology,

Civil Technology,

Dairying Technology,

Digital Techniques for Design and Planning,

Electronics and Communication Engineering,

Electronics and Computer Engineering,

Electronics and Instrumentation Engineering,

Electronics and tele-communication Engineering,

Electronics and Telematics,

Electronics Control Systems Engineering, Electrical and Electronics Engineering,

Facilities and Service planning,

Food processing technology,

Food science,

Geo –informatics,

Industrial Production Engineering,

Information Technology,

Instrumentation and Control Engineering,

Instrumentation Engineering,

Material sciences and Nano Technology,

Mechanical Engineering,

Mechatronics Engineering,

Mining Engineering,

Metallurgical Engineering,

Machinery Engineering,

Metallurgy and Material Technology,

Naval architecture and Marine Engineering

Petroleum Technology,

Textile Technology,

Planning,

Pharma-D

Power engineering

BPharmacy,

The details of availability of all these Courses are given in the EAMCET Prospectus issued annually.

12. MATHEMATICS AND STATISTICS:

At the Under-graduation level, Mathematics is offered as one of the combinations both for BA and B Sc courses, In some Universities, it can be taken up as the principal subject or honors subject.

The Indian statistical Institute (Calcutta) has an exclusive Course in Mathematics of three years duration leading to Mathematics, Degree B Math. Some unique courses in Maths are available, offering specialized aspects of Mathematics as one of the combinations at undergraduate level., for example: Numerical Maths at Madurai Kamraj University, Industrial Maths at Universaity of Pune and North Maharashtra University, Mathematical economics at Devi Ahilya Vishwavidyalaya.

Those interested in Maths can later take up Masters studies in Mathematics at any University, subject to Entrance Tests.

Statistics is a sett of methods that are used to collect and analyze numerical data. Like Mathematics, Statistics also has many problem solving applications Statistical methods help people identify, study, solve many problems and enable them to take decisions about uncertain situations

Statistics is offered at the first degree level as one of the combinations of subject. Some Universities have also introduced topics in specialized areas of Statitics as as one of the combinations. For example, Mathematical statistics in BA Hons at University of Delhi, Statistical Methods at University of Pune, Statistical Techniques in North Maharashtra University, Elements of Economics Statistics at Avinas-lingam Institute of Home science and Higher Education for Women Applied Statistics at University of Madras etc. Indian Statistical Institute and Viswha Bharathi offer stand-alone B Stat courses of three years duration. Later willing candidates can do MSC or MA Statistics at the PG level.

13.PHARMACY

Pharmacy is a very important component of the medical and health care system. It is the profession concerned with the preparation, distribution and use of drugs and medicines. Members of this profession called Pharmacists, must have a comprehensive knowledge of drugs, including their composition, chemical and physical properties and uses. Pharmacists must also be familiar with the effects of various drugs on health of persons.

Pharmacy or more appropriately pharmaceutical science has a close link with life sciences. Pharmacology is the science of drugs,the discovery and uses the general aspects of how and why of drugs.

A knowledge of pharmacology is an essential element in medical practice and is the basis for discovery of new medicines.

In India Pharmacy education is an academic discipline of recent origin With the growth of pharmaceutical industry, the need for qualified manpower specializing in Pharmaceutical Sciences was acutely felt. The Banaras Hindu University which introduce the first program in Pharmacy 9B Pharm) in 1932is one of the pioneers in promoting Pharmacy Education in India. In 1948,the Pharmacy Act was passed to regulate the profession of Pharmacists. The act provided for the constitution of Pharmacy council of India and the State Pharmacy Councils to regulate the profession of Pharmacists and Pharmacy Education.

The first degree course (B Pharma is offered by University departments of Pharmacy and Pharmacy Colleges., affiliated to Universities. In the State where there are Medical Universities, they are affiliated to them. The eligibility requirement is a pass in 10+2 Examination with Biology as one of the subjects. In Andhra Pradesh, the admission to B Pharma Course is given though there rank obtained in the EAMCT. The eligibilty criterion is as follows:

Candidates should have passed or appeared for the final year of Intermediate Examination (10+2 pattern) with Mathematics, Physics along with Chemistry / Biotechnology / Biology as optional or related vocational courses in the fields of Engineering and Technology, conducted by the Board of Intermediate Education, Andhra Pradesh along with bridge course or courses conducted by it for candidates enrolled during 2000-2002 and subsequent batches, or any other examination recognized as equivalent thereto by the Board of Intermediate Education, Andhra Pradesh, provided that candidates who have passed or appeared for the final year of Intermediate Examination (10+2 pattern) with Biology, Physics and Chemistry as optional along with the bridge course examination in Mathematics conducted by the Board of Intermediate Education, Andhra Pradesh shall also be eligible for the Bio-Technology course.

(OR)

Candidates should have passed or appeared at the final year of the Diploma examination in Engineering conducted by the State Board of Technical Education and Training, Andhra Pradesh or any other examination recognized as equivalent thereto by the State Board of Technical Education and Training.

14.PHYSICS:

The term Physics has been derived from a Greek word which means "natural things".
Physics is the science devoted to the study of matter and energy. Classical Physics is concerned with the motion and energy and consists of five basic areas a) mechanics, b) heat, c)sound, d) light and e) electricity and magnetism. Through the centuries, Physics has been closely linked to developments in technology, and to advances in mathematics, astronomy, biology, chemistry, geology, and other sciences.

These linkages are reflected in the development of such topics as astrophysics, mathematical physics, geophysics and biophysics.

Physics is one of the subjects of study at Inter and degree level. Those who want to take up engineering and Technology course after 10+2 must study physics along with mathematics .

The course contents of many engineering Colleges include a substantial portion of physics.

At the Bsc level many Universities offer honors degree program in Physics.

After BSc, candidates can do MSc (Physics) .

Good career opportunities are available for qualified Physicists both as Teachers and Researchers. For teaching jobs in Universities and Colleges, one has to qualify in the UGC-CSIRNET, Every year a large no. of candidates are recruited by several research institutions.

15. ARTIFICIAL INTELLIGENCE:

Artificial intelligence may be defined as the ability of an artificial mechanism to exhibit intelligent behavior Examples of Artificial Intelligence system include computer programs that perform medical diagnosis, mineral prospecting, legal reasoning, and natural language processing.

At first degree level, it is only the Shanmugha College of Engineering (Thanjavur-613402) affiliated to Bharatidasan University which has introduced the Course. Only three Universities offer courses inartificial Intelligence :

University of Hyderabad ...M Tech Artificial intelligence and robotics,

Sri Sathya Sai Institute of higher Learning, Prasanthi Nilayam.

MTech Computer science with specialization in artificial intelligence.

Jadhavpur University, Calcutta, .. ME (Robotics).

16. CAD /CAM :

Computer aided Design, computer Aided Manufacturing and computer aided engineering are now playing an important role in engineering industries. There has been a rapid growth of CAD/CAM and CAE service industry. Many Engineering colleges are now introducing the topic in the Mechanical engineering.

These Courses are available at PG level also.

17.FLYING:

Though flying is much sought after Career, to get into the profession is getting increasingly expensive with the prices of aviation turbine fuel spiraling.

I. The Indian Air force offers its openings thru two competitive Exams. Conducted by the union Public Service Commission.:

I) NDA Exam: ....open to candidates who have passed 10+2 Examination with Physics and Mathematics.;

Ii) Air Force academy open to BSc degree holders with Physics and mathematics or bachelor's degree in engineering.

II. However those who want to be Commercial Pilots are required to traverse an expensive and difficult path dogged by uncertainty.

Trainees have to log in 250hours of flying to obtain Commercial Pilot's licence. For the first 60 hours, it is subsidized by the government At the Bombay flying Club, a student is required to pay a whopping amount of Rs. 8.oo lakhs to register for the Course. The first Licence is the student's pilot Licence which can be obtained by passing a basic test of air regulations, aviation, meteorlogy and navigation at any Flying Club. The minimum age should be16b years and the desirable educational qualification is a pass in 10+2 Exam .

Next step is to obtain a Private pilot's Licence for which candidates must have passed 10+2 Exam with Physics Chemistry and mathematicss.

Fly tech aviation Academy at Secunderabad is one of the popular institutes offering flying training The Indira Gandhi Rashtiya Udaan Akademi, established by governmetof India,offers courses to commercial Pilots to achieve higher standards in flying. Scholarships are available to study at this institution.

18.MERCHANT NAVY:

Merchant navy is a country's commercial shipping as opposed to that involved in military activity.

The **<u>Merchant Navy</u>** is a *non-combatant commercial fleet*, which deals with transporting cargo and occasionally, passengers, by sea. Its fleet is therefore composed of passenger vessels, cargo liners, tankers, carriers, as well as other special types of vehicles.

A career in this field is full of adventure and long voyages to exotic places. Above all this, the excellent pay and promising promotional opportunities make the career lucrative and exciting in spite of all the hard work life and long absence from family and home. What is the big attraction of the merchant navy?

Two things come to mind – money and foreign travel. There are other benefits like tax free income, quick promotions and an exciting life. But the money is the main temptation. You get fat pay checks and you don't pay tax (if you stay out of the country for more than 6 months in a financial year). You start earning a big salary at a very young age.

To give you an example, the starting salary for a 22 year old 3rd officer or 4th engineer (junior most officers on board ships) on an oil tanker is be more than 1500 $ per month (conservatively speaking). This amount depends on the type of ship and the company you join! Officers normally work on a contract basis. Junior officers do 6 to 9 month contracts, while senior officers do 3 to 6 months on board. Remember that you get paid ONLY when you are on board.

Example of a BTech Course in Marine Engineerirng, at Vishwakarma Maritime Institute, Pune:

B.E. Marine Engineering

Total Fees: INR 10,00,000/-

Affiliation: Affiliated to Yashwantrao Chavan Maharashtra Open University (YCMOU) (Indian University)

Eligibility Following is the eligibility criteria:

Qualification Candidate must have completed the Senior Secondary Examination (10+2) examination; At least 60% marks in P.C.M.

   At least 50% marks in English either in class 10th or 12th

   Marks: Min. 50% marks in English subject in X or XII std

   Age: Age limit as on date of commencement of course less than 25 years

   Sex: VMI encourages the participation of both sexes without discrimination

   Physical Fitness: The Institute has laid down minimum physical fitness standards as per D.G.S requirement. Medical test will conducted by VMI at the time of selection through D.G.S approved doctor

Eye vision: Use of corrective lenses for eyesight is permitted but the maximum permissible limits, at entry, are 6/12 in each eye or 6/9 in better eye and 6/18 in other eye for distant unaided vision. Color blindness not permitted

Application Fees: 1000/-(Non-refundable) is to be submitted along with application form via DD in favor of 'Vishwakarma Maritime Institute' payable at Pune.

Admission Procedure Following is the admission procedure:

Advertisement inviting the applications is published in leading newspapers in India

After scrutinizing the applications, the short-listed candidates are called in for verification of documents

Henceforth, there shall be written, Psychometric, Medical tests followed by Interview

After 4 days of interview final list of selected candidates is released

Selected candidates will be called for admission

Duration: 4 Years, Full Time, Under Graduate Degree.

LASTICS ENGINEERING AND TECHNOLOGY:

CIPET (Central Institute of Plastics Engineering and Technology) is conducting a range of Academic Programs varying level of entry qualification leading to Diploma, Post Diploma, PG Diploma, Degree, Post Graduate and Doctoral in accordance with ISO 9001:2008 QMS. The academic activities were categorized in to "4 TIER" as per the Human Resource requirement of Indian Plastics Industries and Sustainability of the Institute.

• Tier I – Doctoral, Postgraduate & undergraduate Programs are high-ended Programs at   High Learning Centre.

• Tier II – Conventional CIPET's Diploma, Post Diploma and Post Graduate Diploma   Programs.

Tier III – Industry specific Programs.

• Tier IV – Operator level Programs including non-conventional Programs at extended   campus of CIPET.

Diploma, Post Diploma & Post Graduate Diploma Programs are being conducted in all the 16 centres.

Doctoral Programs are offered at Chennai, Bhubaneswar as per the prescribed norms & guidelines of the affiliating university, i.e. Anna University at Chennai and Biju Patnaik University of Technology and Utkal University at Bhubaneswar. Undergraduate and Postgraduate Programs are offered at High Learning Centre in Ahmedabad, Bhubaneswar, Chennai, Lucknow & CBPST Kochi in affiliation with reputed universities of the respective states as under :

CIPET Chennai - Anna University,Chennai.
CIPET Bhubaneshwar - Biju Patnaik University of Technology, Rourkela.
CIPET Lucknow - Gautam Buddh Technical University, Lucknow.
CIPET Ahmedabad - Gujarat Technological University, Ahmedabad.
CBPST Kochi - Cochin University of Science and Technology.

CIPET has signed MOU with renowned National and International Universities in order to remain at the forefront on the technological development in the field of plastics and allied areas and to share its experience with them. These collaborations include students and faculty exchange, joint research, product development, exchange of academic materials for training, etc..

The academic atmosphere at CIPET is a rare blend of modern day technical skills with a traditional emphasis on imparting technical knowledge. The faculty as well as students who have qualified from CIPET Centres has always made the country proud through their outstanding achievements and leadership qualities. CIPET has demonstrated a fine example of interaction with the industry which are put in to the practice by trainees during course to feel them as working in an Industrial Environment with live Projects.

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20.SHIP RADIO OFFICERS:

Marine Radio Officer (MRO) Course

Marine Radio Officer (MRO) also called as Radio Officer is the professional on board a ship who handles the vital function of radio communication for the ship. While performing their duties on cargo vessels and passenger ships they use Radio, Morse code and other electronics and satellite communication devises to contact shore headquarters and other ships. In addition to this primary function radio officer also perform the task of receiving and recording time signals, weather report and other information important to the smooth and safe sailing of their vessels. Beside they are also responsible for maintaining the radio equipment and depth recoding and electronic navigation devise on ships.

Thus to discharge these duties and work as a team with other crew members is in the job profile of a Radio Officer. Performing all these function in most efficient manner is not an easy task. One has to be on his toes all the time for the safe journey of the ship to its destination as there is no margin of error in the sea. Thus

to discharge his duty one has to be very dedicated towards his responsibilities, brave and hardworking. Beside the aspirant need to be intelligent, intuitive, willing to work as team, flexible, patient; have a liking for solitude, willing to live apart from loves ones for long stretches of time. Those opting for a career as Radio Officer should not be see sick.

To be a Radio Officer one has to undergo some special courses, along with regular courses required to work on a ship as a Radio Officer.

Eligibility to become a Radio Officer

Education Qualification:-

The minimum education qualification of perusing a Marine Radio Officer (MRO) course the aspirant should be least plus two or equivalent with preferable science subject such as Physics, Chemistry and Mathematics.

STCW 95 GMDSS General Operators Certificate

Electronic Navigation Equipment Maintenance Certificate

May have STCW III/1

Level 3 Diploma in Communications Systems (City & Guilds)

Level 5 HND in Marine Engineering (Radio Communication Engineering) (EDEXCEL)

(b) Age:-

The candidate must have attained the age of 17 Years on the 1est July of the year of examination.

The upper age limit is also relaxed in favor of certain categories of employees working under the Government of India and Defense Service Personnel.

(C) Physical Standard:-

The minimum height should be 150 CMS with correlated weight and proportionate Chest with minimum 5 CM expansion.

He should also pass a medical fitness test for sea service under standard norms and with eyesight 6/6 with no color blindness. Process to become a Radio Officer

Step-I

The aspirant has to take up the Marine Radio Officer Course. These courses in ROGC, COP, RTG, RTR and RTIM are internationally recognized. Examinations for these courses are conducted by the Ministry of Communications, Government of India. Beside, these is also the Ham (Amateur) Radio Operators License to be worked for. There are other courses, too, such as the Global Maritime Distress and Safety System (GMDSS) and Marine electronic course.

Step-II

Once the aspirant has completed his qualification then one can appalling for the job in public sectors or private sector shipping companies as Radio Officer.

Further promotions of the Radio Officer depend on the quality of experience and personal merit.

Opportunities in the Maritime Sector

Usually only found on passenger ships, the Radio Officer can progress through the normal deck officer route.

Communication roles, such as a VTS Officer in a port. Also roles in operations value seagoing experience.

(b) Professional Degree Courses after Inter (BPC):

The following Professional degree courses are available to the Inter (BPC)

1. MBBS

2. BDS

3. BUMS,

4. BAMS

5. BHMS

6. BNYS

7. B Pharma

8. BPT

9. BOT

10.   Agriculture

11.   Vet Sc &Animal Husbandry, B V Sc & H

12.   B Sc (Prosthetic and Orthotics)

13.   Bachelor of Mental Retardation

14.   BOTANY

15.   Sericulture

16.   Horticulture,

17.   Fisheries

18.   Agricultural Chemist

18.   B Sc(BZC)

19.   B Sc (Home Sc.)

20.   B SC (Nursing)

21.   B Sc (MLT)

22.   B Sc (Speech & Hearing)

23.   Bachelor of Hotel Management

(c) Professional Courses after Inter (C E C):

The following Professional Courses are available to the Inter(CEC) candidates:

1. B Com

2. Bachelor of Tourism Management

3. BBA

4. CA

5. ICWA

(d) Professional Degree Courses after 10+2 (H E C):

No Professional Course is available to them at first degree level, except in Hotel Management and Tourism.

(e) Professional Degree Courses after Inter (Vocational) through Vertical Mobility:

Vertical Mobility:

It is generally experienced that the student community and society at large, in spite of a valid economic and educational rationale for it, find Vocational Education unacceptable owing to its "terminality" and demand vertical mobility into higher level courses leading to diploma/ degree.

Any Vocational program which does not allow learner to go for a related course of higher studies will be perceived as a dead- end. It will have the effect of restraining the development of individual in their working level, which in turn will breed frustration.

In view of the above, it is required to find out ways and means for linking Vocational Education at the plus two level with higher education to provide right employability to Vocational pass outs. Various strategies, modalities and action plans were made for linking Vocational Education at plus two levels with higher education.

In the entire planning of upward mobility to the field of higher education care should be taken to see that this linking should be complementary and supplementary to his/her basic knowledge and the resources used during/Vocational Education should not go down the drain. In Himachal Pradesh some seats are reserved in each polytechnic for Vocational Pass out students who secure 60% or more than 60% marks through lateral admission. They get admission in 2nd year of diploma in their respective area.

In Andhra Pradesh, Inter (Vocational)candidates in Engineering and Technical trades are eligible to either pursue II Year Polytechnic Courses in respective Branches with 10% reservation quota for them, or they can pursue B Sc (MPC) /BCA/BSc (Computer Science), besides being able to join BA/BCom. They can also join Enginererig degree Courses through Bridge Course and ERAMCET.

Inter (Vocational) Courses passed in the trades of Agricultural and Home Sciences are eligible to join BSc (Sericulture), BSC (Dairying), BSc (Home Science) BSc (Fisheries), BSc (Horticulture) through Bridge Course and

EAMCET, besides being eligible to join BA /BCom. Inter (Vocational) Course passed in Health and Para-medical Courses can study BSc (MLT, BSc (Nursing), and BPT courses.

Inter (Vocational) passed in Commerce and Business trades can take up higher studies in BA and BCom courses.

Similarly, those who have passed Inter (Vocational) with Humanities and other subjects can study BA, Bcom, BCom (computers), and BCA. The Bridge Courses consists of subjects which are present in the conventional Intermediate Courses and not studied in the Vocational Courses.

<center>...</center>