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Goa University

A brief introduction

Goa University was established in the year 1985 around the nucleus of the Post Graduate Centre and 17 Colleges affiliated to the Bombay University. Over the past decade, the University has grown steadily in size, and the scope of its academic programmes.

Presently the University has 12 Faculties encompassing a wide range of disciplines from Languages, Music and Art, Law, Natural Sciences, Life Sciences and Environment, Medicine, including Ayurveda, and Engineering, spread over 24 post graduate departments, 4 centres of studies, one UGC academic Staff College, 54 affiliated professional and general education colleges and institutions.

The University is located on a beautiful campus spreading over nearly 173 hectares on the Taleigao Plateau, overlooking the river Zuari joining the Arabian Sea. The Taleigao Plateau is located at a distance of 5 km from Panaji city, which is the capital of Goa. The various faculties of the University are housed in separate buildings, possessing considerable architectural distinction. The University Campus is serviced by numerous infrastructure facilities such as Hostels, Health centre, Post-office, Direct Inward Dialling, STD-ISD booths, Bank, Guest house, Kiosks and Canteens.

Hostel Accommodation

The University has full fledged hostels both for the men and women students. The hostels are located in close proximity to the Department and are well equipped with all modern facilities. There is a separate hostel for research students with limited accommodation. The students interested in seeking admission to the hostel are required to apply separately in the prescribed application form available from the respective Hostel Wardens.

Department of Computer Science and Technology (DCST)

A brief introduction

Anticipating the importance of Information Technology, Goa University established the Department of Computer Science and Technology in the year 1987, with the financial assistance from DOE/UGC under the Manpower Development Scheme. A full time, 3- year degree programme leading to the “Master of Computer Applications” (MCA) degree was started in the academic year 1987-88. This course is aimed at imparting comprehensive knowledge and practice covering various aspects of computer usage in the industry. Goa University thus became one of the select universities of our country imparting training and education in the field of Computer Science and Application at the post graduate level. The Curriculum keeps abreast of the technologies required by the industry.

Presently the department has seven full-time faculty members. The alumni of the Department are well placed and currently hold leading positions in reputed IT organizations in the country and abroad.

Laboratory Facilities

The Laboratory facilities in the Department are constantly upgraded to cater to the growing needs of students. Currently around eighty Intel desktops are spread over the Department area – the laboratory as well as faculty offices – are served by Linux and Windows servers. About eighty students can simultaneously work on MS WINDOWS/UNIX/X-Windows platforms. Presently, the laboratory supports all computer languages, Integrated Development Environments and software tools available on Open Source Linux Platform. In addition to the usual Office suites, such as Microsoft Office, the laboratory also provides students and faculty with the latest versions of development tools and application platforms such as Oracle, Visual Studio, Rational suite, IBM RSA, MATLAB and Adobe eLearning suite. The Department subscribes to the Microsoft’s MSDN Academic Initiative which provides legal copies of all Microsoft software available on workstation and Server platforms. Legal copies of Microsoft Software including operating systems and development tools are available for students for download under MSDN Academic Licence program.

The Department rides on a Campus-wide fibre-optic backbone and has high bandwidth connectivity to the Internet. The students of the department have 24 hour access to all Internet services and laboratory infrastructure. The wi-fi connectivity provided across the campus enables students to work anytime, anywhere.

Library Facilities

The Goa University Library started in June 1985 with a modest collection of 37678 books. Today the University Library is fully operational in a magnificent building of its own with holdings over 1,40,000 books and subscribes to over 458 technical journals and periodicals including over fifty online journals in the field of Computer Science and Application. It houses a collection of rare books and documents and has been recognized as one of the repositories for all publications of the United Nations. A searchable online catalogue of titles in the Library as well as Abstracts of Technical articles from over 100 journals is currently available on the Campus wide network. On the subject of Computer Science alone there are over 4,000 books, technical journals and magazines. Resources from digital library of prestigious societies like Kluwer, Elsevier & Springer Verlag are now available inside the campus under INFLIBNET scheme.

Teaching Faculty

Presently the department has seven full-time faculty members. As and when necessary the department invites resource persons from prestigious institutions and industry to conduct guest lectures on the specialized topics. The list of faculty members along with their area of interest and contact details is listed below:

1. P. R. Rao, M.Sc, Ph.D
Professor
(Theoretical Computer Science, Data mining, Data Warehousing, Information Systems Security)
Email: pralhadrrao@gmail.com / rao@unigoa.ac.in
Contact no: 0832-6519087/ 6519323
2. V. V. Kamat, M.Sc., M.Phil, Ph.D
Professor & Head
(Computer Graphics & CAD, Software Engineering, eLearning)
Email: vvkamat@unigoa.ac.in
Contact no: 0832- 6519072
3. Jyoti D. Pawar, B.Sc, M.C.A, Ph.D.
Associate Professor
(Data Structures, Data Mining)
Email: jdp@unigoa.ac.in
Contact no: 0832- 6519325
4. Yma F. Pinto, B.Sc., M.C.A.
Associate Professor
(Data Base Management Systems, Operating Systems, Computer Science Education)
Email: yp@unigoa.ac.in
Contact no: 0832- 6519324
5. Ramrao Wagh, B.Sc, MCA.
Associate Professor
(Software architecture, Object oriented Technology)
Email: ramrao@unigoa.ac.in
Contact no: 0832 - 6519328

6. S. Baskar, M.Sc. (Comp. Sc.)
Associate Professor
(Artificial Intelligence, Energy aware computing & Embedded Systems)
Email: baskar@unigoa.ac.in
Contact no: 0832- 6519326
7. Ramdas Karmali, B.Sc., M.C.A.
Assistant Professor
(Computer Networking, NLP)
Email: rnk@unigoa.ac.in
Contact no: 0832-6519327

Research Activity of the department

The department conducts Ph.D degree program in Computer Science. At present students have registered for the Ph.D degree in the area of Data mining, Computer Aided Design (CAD) and Natural Language Processing (NLP). The department has been sanctioned three projects by the All India Council of Technical Education (AICTE) and three project for the development of Konkani NLP tools and resources by Department of Information Technology(DIT), New Delhi. The Staff members of the department guide the students for M.Phil and B.E degree dissertation work.

The thrust areas of the department are Data Mining & Data Warehousing, Computer Graphics, Data Base Management System, Computer Networks, Software Engineering and Embedded System. The upcoming areas are Natural Language Processing and Computer Science Education.

M.C.A Programme

Course Objective

The MCA course conducted by the University is aimed at imparting comprehensive knowledge and practice covering all aspects of computer use in the industry. The course content undergoes timely revisions. The course structure and syllabus is currently under revision and may be applied from academic year 2014-15 subject to approval by University authorities.

The Curriculum includes a combination of three types of courses: Computer Science, Mathematics and Management Science. Semester-wise courses in the above-mentioned three disciplines are listed below. Every student is required to take up a system development project or Industrial Training work in the final (that is sixth) semester.

Course Structure

First Semester					
Course code	Course Title	Contact Hours			Credits
		Lectures	Tutorial	Practicals	
CS 11	Programming and Problem Solving	3	1	0	4
CS 12	Computer Organization and Architecture	3	1	0	4
MT 13	Probability and Statistics	3	1	0	4
MT 14	Discrete Mathematical structures	3	1	0	4
PL 15	Programming and Problem Solving Lab	0	0	6	4
PL 16	UNIX Environment and Tools Lab	0	0	6	4
Total					24

Second Semester					
Course code	Course Title	Contact Hours			Credits
		Lectures	Tutorial	Practicals	
CS 21	Data and File Structure	3	1	0	4
CS 22	Operating Systems	3	1	0	4
MT 23	Applied Operations Research	3	1	0	4
MT 24	Applied Linear Algebra	3	1	0	4
PL 25	Data and File Structure Lab	0	0	6	4
PL 26	Operating Systems Lab	0	0	6	4
Total					24

Third Semester					
Course code	Course Title	Contact Hours			Credits
		Lectures	Tutorial	Practicals	
CS 31	Data Base Management Systems	3	1	0	4
CS 32	Computer Communications Networks	3	1	0	4
CS 33	Design and Analysis of Algorithms	3	1	0	4
CS 34	Object Oriented Technology	3	1	0	4
PL 35	Data Base Management lab	0	0	6	4
PL 36	Object Oriented Programming lab	0	0	6	4
Total					24

Fourth Semester					
Course code	Course Title	Contact Hours			Credits
		Lectures	Tutorial	Practicals	
CS 41	Software Engineering	3	1	0	4
CS 42	Web Technology	3	1	0	4
EL – I	Elective Paper	3	1	0	4
EL – II	Elective Paper	3	1	0	4
PL 45	Software Engineering Lab	0	0	6	4
PL 46	Web Technology Lab	0	0	6	4
Total					24

Fifth Semester					
Course code	Course Title	Contact Hours			Credits
		Lectures	Tutorial	Practicals	
CS 51	Machine Learning	3	1	0	4
CS 52	Network Security	3	1	0	4
EL – III	Elective Paper	3	1	0	4
EL – IV	Elective Paper	3	1	0	4
PL 55	Machine Learning Lab	0	0	6	4
PL 56	Network security Lab	0	0	6	4
Total					24

Sixth Semester					
Course code	Course Title	Contact Hours			Credits
		Lectures	Tutorial	Practicals	
	Software Project Development/Industrial Internship				
Total Credits					120

Academic Calendar

The academic year consists of two semesters referred to as odd and even semesters. The semesters start every year in the beginning of the month of June and January and each semester is of about 23 weeks duration. Students are required to attend at least 75% of the classes held in each course/subject and actively participate in study-seminars, tutorials and laboratory work prescribed from time to time to the satisfaction of the Department.

The arrangement for Academic Terms for MCA for the academic year 2014-15 shall be as follows.

Odd Semester – I,III,V

Reopening	06/06/2014
Term -I	06/06/2014 to 24/11/2014
Admission, Project exam viva	6/6/2014 to 16/6/2014
Teaching Sem.III/V	17/06/2014 to 07/11/2014
Sem I	1/07/2014 to 07/11/2014
Ganesh Chaturthi Break	01/09/2014 to 03/09/2014
Diwali Break	21/10/2014 to 24/10/2014
Teaching ends	07/11/2014
END SEM EXAMS	10/11/2014 to 24/11/2014

Even Semester – II,IV,VI

Term-II	25/11/2014 to 05/05/2015
Teaching Sem. II/IV/VI	25/11/2014 to 16/04/2015
Christmas Break	29/12/2014 to 31/12/2015
Teaching ends	16/04/2015
END SEM EXAMS	20/04/2015 to 05/05/2015
Summer Vacation	06/05/2015 to 05/06/2015
Reopening	08/06/2015

Instructional Scheme

Instructional scheme for the MCA programme is based on a system of integrated units called courses. Each course shall mean one paper. Semester I to V shall have 5 theory papers and 2 lab papers. Semester VI shall be exclusively dedicated to project / training.

Course Credit: Each course will be of 100 marks and will have credits depending upon number of contact hours per week. The project will have no credits associated with it.

Cumulative Credits: The sum total of all the credits of all the courses taken in a semester.

Contact Hours: The total number of Lecture hours, Tutorial hours and Practical hours. Minimum of 45 contact hours are recommended for a 4 credit course, with 4 contact hours per week.

Instructor-in-Charge: Each course may have one or more instructors teaching the course. One of these is to be appointed as Instructor-in-charge.

Course coordinator: In case of courses taught by Visiting Faculty, one faculty member from the department/College shall be associated with the course as course-coordinator

Course File: For each course taught, a file shall be maintained by the Instructor-in-charge comprising of course plan, reading/teaching material used in class, assignments, question papers, answer papers, student feedback, student attendance record along with final evaluation and grading.

Academic Audit Committee: The task of the academic audit is to ascertain that all in-semester an end-semester evaluation is done in transparent and fair manner. The committee shall comprise of two members appointed by the Vice-Chancellor, one from the University Department and one expert from Industry. It shall meet every semester end and shall examine the course file. Any aberrations shall be reported to the Vice-chancellor for further action

Scheme of Evaluation

There shall be both an in-semester element and an end-semester element in the evaluation of the performance of candidates. The weight-age for in-semester evaluation will be 60% and end-semester evaluation will be of 40%

For a theory course, in semester evaluation is a continuous assessment worth 60 marks. At least 40 marks of the in-semester evaluation will be graded through one or more class test. The remaining could be evaluated through quizzes, assignments etc.

For a theory course, the end-semester evaluation consists of an 'end-semester' examination of 40 marks of 2 hour duration conducted by the college/department. A candidate is eligible to appear for the end-semester examination if she/he has a minimum of 75% attendance in the theory course.

For a laboratory course, the assessment will be continuous with 60 marks for the in-semester evaluation consisting of lab experiments, assignments etc. and 40 marks being reserved for the end-semester examination which includes a viva-voce and an online examination jointly conducted by an internal and external examiner. An external examiner is to be appointed from the panel of examiners approved according to the University ordinance OB-4. A candidate is eligible to appear for the end-semester examination if he has a minimum of 75% attendance in the laboratory course.

The final grades for the course would be awarded by the Instructor-in-charge/course-coordinator taking into account the total performance.

Project viva would be jointly conducted by an internal and an external examiner as per the guidelines of the project evaluation. An external examiner is to be appointed from the panel of examiners approved according to the University ordinance OB-4.

There shall be no reevaluation. The students can make an appeal to the Chairman Departmental Council through the Principal of College in case of any discrepancies in evaluation. The Chairman shall refer the matter to academic audit committee who shall decide and recommend appropriate action to the Vice-Chancellor.

Grading Scheme

For each course taken by a student, a letter grade is assigned based on the performance in all assessments. These grades are defined as:

AA, AB, BB, BC, CC, CD, DD, EE, II and FF

Each grade not only indicates a qualitative assessment of the student's performance but also carries an equivalent number called the grade point.

The grade points corresponding to different letter grades are defined below:

Letter Grade	Grade point	Letter Grade	Grade point
AA	10	CD	5
AB	9	DD	4
BB	8	EE	0
BC	7	II	0
CC	6	FF	0

A student passes the courses if he/she gets any grades in the range AA to DD.

The letter grade EE and the letter grade II makes the student eligible to take a supplementary examination in that course.

The letter grade II is given to a student on account of absence from the end-semester examination for valid reason.

The letter grade EE is given to a student on account of poor performance in the end semester examination. The letter grade EE and II are not awarded in supplementary examination

A student who fails in the supplementary examination is awarded FF grade and has to repeat the entire course. The student who fails to appear for the supplementary examination or remains absent is awarded FF and has to repeat the entire course

A student shall be considered to have passed a course at first attempt, provided he/she passes with a letter grade of DD or better, at the regular examination.

In addition to the above, a student getting a letter grade of II at the regular examination and subsequently passing the course at the supplementary examination with letter grade of DD or better, will be considered to have passed the course at first attempt. However a candidate getting a letter grade of EE at the regular examination shall be deemed to get letter grade DD in the supplementary examination, if successful.

All other cases would be treated as second attempts.

The final year Project shall carry only qualitative evaluation such as Excellent, Good, Satisfactory, Pass and Fail. A student getting a Fail grade shall have to repeat the project.

Supplementary Examination shall be held at the beginning of every semester.

A student is allowed to repeat a year or a semester in order to improve the performance. In such a situation his previous performance in that year or a semester shall be considered null and void.

Performance Indices

Semester Performance Index (SPI): The performance of a student in a semester is indicated by a number called SPI. The SPI is the weighted average of the grade points obtained in all the courses during the semester. For example, with five courses in a semester, having credits C1, C2, C3, C4, C5 and the grade points in the semester being g1, g2, g3, g4 and g5 respectively then the SPI is equal to (up to two decimal places).

$$\frac{\sum_{i=1}^5 C_i g_i}{\sum_{i=1}^5 C_i}$$

Cumulative Performance Index (CPI): The overall performance of a student for the entire programme is obtained by calculating a number called CPI. The CPI is the weighted average of the grade points obtained in all the courses for the programme. The CPI is also calculated to two decimal places.

Award of Class

Each semester grade report for the student shall carry his/her SPI. The final semester mark-sheet will indicate the CPI and the project performance. The final class for the MCA degree would be awarded as per the following scheme -

- Distinction: CPI equal to or greater than 8.5 and a minimum “Good” performance in the project
- First class: CPI equal to or greater than 6.5 but less than 8.5 and a minimum performance of “Satisfactory” in the project
- Second Class: CPI equal to or greater than 5.0 but less than 6.5 and a minimum performance of “Pass” in the Project
- Pass Class: CPI equal to or greater than 4.0 but less than 5.0 and a minimum performance of “Pass” in the project.

There is no provision for gracing in the individual paper. However, for candidates representing University in the National / State level event, a maximum of 7 grade points could be awarded before calculating CPI and Class.

Placement activity

The Department has a very active placement cell and many reputed companies come for campus recruitment almost one and half year in advance. Majority of the students get their placement offers in the fourth semester itself.

Companies that visited for campus recruitment in the past include the following -

1. TCS, Mumbai
2. Sabre Technologies, Bangalore
3. Cognizant Technology Solution, Pune
4. Infosys, Pune
5. IBM, Bangalore
6. PSPL, Pune / Goa
7. Zensar, Pune
8. HSBC, Pune
9. Torry Harris, Bangalore
10. BMC Software, Pune
11. Light Bulb, Pune
12. Wipro, Bangalore
13. Accenture, Bangalore
14. Hexaware
15. L & T Infotech, Mumbai
16. HONEYWELL Bangalore
17. Carritur, Bangalore
18. ADOBE, Bangalore

Ragging

The U.G.C. has instructed that ragging in all forms be strictly banned by the institutions and to ensure that the campus environment be made free from ragging. All the students are strictly instructed not to indulge in ragging of any form. Strict disciplinary action will be taken against any student found guilty of ragging. The residents of the Goa University hostels are required to take special note of the above.

Further, under the Goa Prohibition of Ragging Bill 2007 strict, disciplinary action will be taken against those convicted for ragging directly or indirectly, so also those who commit, participate in abet or propagate ragging within or outside any educational institution, which may include removal from the roll of the institution for three years. Any student removed for such offense shall not be admitted in any other educational institution in the state.

Students indulging in ragging shall also be debarred from claiming scholarships or other benefits, representing in events, examinations. In case individuals committing or abetting ragging are not identified, collective punishment shall be imposed against those involved.

Head of Post Graduate Department, will obtain an annual undertaking from every student stating that they have read the relevant instructions / regulations against ragging as well as punishments detailed therein.

M.C.A Admissions

Eligibility for Admission

Admission to the three year, six semester, full time course leading to the degree of “Master of Computer Applications” (MCA), is open to any Indian National satisfying all of the following conditions:

1. Graduate in any discipline with at least 55% aggregate marks at the first degree examination (50% for candidates in reserved category - OBC, ST, SC, PH, FF).

or

Minimum CPI must be 6.00 in the scale of 1 to 10 at the first degree examination (minimum CPI must be 5.5 in the scale of 1 to 10 for candidates in reserved category –OBC, ST, SC, PH, FF).

or

For any other method of declaration of the result, the equivalent percentage of the above cases will be decided by the university after the applications have been received. The decision of the university is final.

2. Candidate must have taken Mathematics as one of the subjects at HSSCE (10+2)* level or at a higher level (documentary proof is essential).

3. The admission to first year of MCA program for the year 2014-15 will be strictly based on the Ranking obtained in the ENTRANCE TEST conducted by the Department of Computer Science and Technology, Goa University.

Candidates who have appeared for a degree examination and are awaiting results are also eligible to apply. In case such candidates are selected and their results are not available at the time of admission, these candidates will be given provisional admission.

Such candidates shall have to furnish the proof of fulfilling the eligibility criteria, preferably at the time of Admission but not later than 30th June 2014, failing which, their admission shall be cancelled.

Students are admitted to the first year MCA programme once every year.

*From the academic year 2016-17, admission to MCA program at Goa University shall be restricted to only those candidates who have opted and passed in Mathematics subject at 10+2 Science stream. However, those not having opted for Mathematics at 10+2 Science stream, shall have an option to appear and pass in Mathematics subject at 10+2 from any recognized Higher Secondary board of the state or central agency during their period of graduation.

Tie Breaking

The method of breaking the tie in case of candidates having an equal score in the Entrance test is as follows.

The candidate securing higher percentage of marks in the Mathematics component of the entrance test examination will be ranked higher. In case the scores are equal in this component, the scores obtained in the Aptitude component will be used to resolve the tie. If the tie still persists, the English component followed by the component on Computer awareness will be used.

2. In case the tie still persists across the candidates, the marks obtained at XIIth Std. will be considered.

Availability and Reservation of Seats¹

The MCA degree program has total 60 seats, with distribution of seats and reservation policy*(may be subjected to change) as follows:

SC – 2%	1 seat
ST – 12%	7 seats
OBC -27%	16 seats
PH - 3%	2 seats
FF– 1%	1 seat

General	31 seats
Other Universities	2 seats

*The reservation is only for candidates from Goa. Candidates applying for admission under these categories shall be REQUIRED TO SUBMIT a VALID CERTIFICATE to that effect issued by the appropriate authorities.

The seats under the GENERAL category are available to students who have graduated with first degree from colleges affiliated to Goa University.

Seats falling vacant after exhausting respective waiting lists, under any of the above reserved categories, shall be filled from the general category as per the University rules.

Foreign students interested in seeking admission to the course may write/e-mail to the Admission Coordinator along with their bio-data and details of academic qualification.

Important Dates for Admission to the Academic Year 2014 – 2015

- Issue of Prospectus & application form 22nd April 2014
- Last date for receipt of completed application form 6th June 2014 (Friday)
- **Entrance Test Date and Time ----- 12th June 2014 (Thursday)
(2.30 - 4.30 pm)**
- Display of merit list and waiting list (Adm Rnd 1)..... 16th June 2014 (Monday)
- Last date for registration by merit list candidates..... 19th June 2014 (Thursday)
- Display of list of admissions to waiting list candidates (Adm Rnd 2) . . . 20th June 2014
- Last date of registration for waiting list candidates (Rnd 2)..... 23rd June 2014 (Monday)
- Final round of admission and registration to waiting list candidates (**Open Admission**)
25th June 2014 (11am).

For any details contact -

The Admission Coordinator, 2014 - 2015
 Department of Computer Science & Technology,
 Goa University, Taleigao Plateau,
 Goa 403 206.
 E-mail: yp@unigoa.ac.in; Phone:6519272/6519087

Entrance Test Modalities

The duration of the Entrance Test will be for a period of two hours and will consist of 90 multiple choice questions with four choices for each question. Each correctly answered question will carry **THREE** marks and each wrongly answered question will lead to **NEGATIVE ONE** mark.

Candidates have to bring their own HB pencil, eraser and black ball point pen. Calculators, mobile phones or any other material shall not be allowed in the examination hall.

Produce the print out of the HALL TICKET you received via email at the time of the examination.

Entrance Test is scheduled on 12th June 2014 (2.30 – 4.30 pm) at the Goa University Campus.

Entrance Test Pattern

There are 4 broad subject areas covered in the entrance test – Analytical Ability & Logical Reasoning, General English, Mathematics and Computer Awareness. The Distribution of Questions will be as follows

The question paper will contain 90 multiple choice questions covering the following topics:

- | | |
|---|--------------|
| 1. Analytical Ability & Logical Reasoning | 40 questions |
| 2. General English | 10 questions |
| 3. Mathematics | 30 questions |
| 4. Computer Awareness | 10 questions |

Eligible candidates for Entrance Test

All candidates who have submitted completed application forms as per the eligibility requirements are eligible to answer the entrance test. However, the eligibility for admission to the MCA program will be subject to the candidate fulfilling all eligibility criteria.

No separate intimation about the entrance test will be sent.

The candidates shall have to produce the HALL TICKET for **identification at the Test Centre**, at the time of the entrance test.

The list of candidates selected for admission to MCA program will be displayed on the Notice Board of the Department and published on the university website on 16th June 2014.

Admission Procedure

The following procedure will be followed in selection of candidates for admission.

Merit List Round (Round1) : A separate merit list and waiting list will be prepared for candidates graduating from Goa University and those graduating from other universities. These lists will be prepared in the descending order of the score obtained in the entrance test and rules applied for breaking the tie. These lists will be uploaded on the University website (<http://www.unigoa.ac.in>); and displayed on the Notice Boards of the department of Computer Science & Technology on **16th June 2014**.

No separate intimation will be sent to candidates.

All the candidates whose names appear in the merit list must pay their fees and register by **19th June 2014 (4pm)**. Candidates in merit list who fail to deposit fees by 19th June 2014 will lose their claim to admission and the same seat would be offered to the candidate in the waiting list.

- 2. Waiting List (Round 2):** On **20th June, 2014**, admissions will be offered to candidates in the respective waiting list (in the order of merit) against vacancies in the merit list. The names of these candidates will be displayed on the notice board of the department and on the University website. Candidates will have to make the **payment of fees and register on or before 23rd June 2014 (4 pm)**, failing which the same seat will be offered to the next candidate in the waiting list.
- 3. Waiting List Final (Open Round):** On **25th June, 2014**, admission will be offered to candidates in the waiting list, provided there are vacant seats. **All the waiting list candidates who have not been offered admission earlier should report to the department office at 11.00 am sharp.** Admission will be offered according to the merit in the waiting list to only those candidates who report to the department **along with the original certificates**. First attempt will be made to fill these seats from the respective waiting list in the order of merit. In case, one of the waiting list is over, the seats will be filled by the candidates from the other waiting list. The students who have been offered admission should pay their fees on the same day. No further admissions will be given after 25th June 2014 and seats falling vacant after this date will not be filled.

5. The candidates who are offered admission and fulfill the eligibility criteria should deposit full fees through challan available in the Department. Students whose results are not available at the time of admission, should also make the full payment of the fees after giving an undertaking that they are paying fees at their own risk and would be able to fulfill the eligibility criteria by **30th June, 2014**. These candidates will be admitted provisionally.

6. All those candidates who are admitted provisionally should submit the relevant mark sheets and passing certificates by 30th June 2014, failing which their admission will be cancelled.

7. The original copies of all mark sheets and relevant documents should be produced by the candidate at the time of admissions and will be retained in the department till the admission procedure is completed.

Fee structure

The total fees prescribed for the academic year 2014 – 2015 is Rs. 35750/- for Goa University graduates and Rs. 37510/- for graduates from other universities.

For Students requiring hostel accommodation, the University has full fledged hostels both for the men and women students. The hostel fees and hostel mess charges are as decided and made applicable by the university.

Refund of Fees

1. In the event of a student withdrawing before the Open Round of admission (24th June 2014), the entire fee collected from the student, after a deduction of the processing fee of not more than Rs. 1000/- (one thousand only) shall be refunded and returned by the University to the student withdrawing from the programme.
2. If the student leaves after joining the course and if the seat consequently falling vacant has been filled by another candidate by the last date of admission, the Institution shall return the fee collected with proportionate deductions of monthly fee and proportionate hostel rent, where applicable.
3. No refund of fee is admissible if the student withdraws admission after the last date (24th June 2014) or later. The above rule shall be applicable to all items of fee except refundable deposits.
4. Students who have already been admitted to a department/centre of the university and have paid the fee and are subsequently admitted to another department/centre on or before the last day of admission, will have to pay the fee for the final admission and claim refund of fee paid earlier.
5. All other cases of refund of fees will be decided on case to case basis, based on its merit.

APPENDIX A

1. ENTRANCE TEST SYLLABUS

ANALYTICAL ABILITY AND LOGICAL REASONING: (40 questions)

The questions in this section will cover analytical and logical reasoning and based on Series, Relationships, Classification, Coding, Permutations and Combinations and Inference

GENERAL ENGLISH: (10 questions)

Questions in this section will be designed to test the candidates' general understanding of the English language. There will be questions on the following topics:

Comprehension, vocabulary, basic English Grammar (like usage of correct forms of verbs, prepositions and articles), word power, synonyms and antonyms, meaning of words and phrases, technical writing.

MATHEMATICS: (30 questions)

Set Theory: Concepts of sets – Union, Intersection, Cardinality, Elementary counting; permutations and combinations.

Probability and Statistics: Basic concepts of probability theory, Averages, Dependent and independent events, frequency distributions, measures of central tendencies and dispersions.

Algebra: Fundamental operations in algebra, expansions, factorization, simultaneous linear /quadratic equations, indices, logarithms, arithmetic, geometric and harmonic progressions, determinants and matrices.

Coordinate Geometry: Rectangular Cartesian coordinates, distance formulae, equation of a line, and intersection of lines, pair of straight lines, equations of a circle, parabola, ellipse, and hyperbola.

Calculus: Limit of functions, continuous function, differentiation of function, tangents and normals, simple examples of maxima and minima. Integration of function by parts, by substitution and by partial fraction; definite integrals, applications of definite integrals to areas.

Vectors: Position vector, addition and subtraction of vectors, scalar and vector products and their applications to simple geometrical problems and mechanics.

Trigonometry: Simple identities, trigonometric equations properties of triangles, solution of triangles, heights and distances, general solutions of trigonometric equations

COMPUTER AWARENESS: (10 questions)

Computer Basics: Organization of a computer, Central Processing Unit (CPU), structure of instructions in CPU, input/output devices, computer memory, and back-up devices.

Data Representation: Representation of characters, integers and fractions, binary and hexadecimal representations, binary arithmetic: addition, subtraction, multiplication, division, simple arithmetic and two's complement arithmetic, floating point representation of numbers, Boolean algebra, truth tables, Venn diagrams.

2. SAMPLE ENTRANCE TEST QUESTION PAPER

ANALYTICAL ABILITY AND LOGICAL REASONING

1. Unscramble the letters of words and find the odd one out.
(a) TLAES (b) KOBO (c) PPREA (d) NCEPLI
2. A man works for 2 days and then rests for one day, then works for 2 days and rests for one day and so on. For everyday he works, he earns Rs. 100. How much will he earn from Monday to Saturday?
(a) Rs. 200 (b) Rs. 300 (c) Rs. 400 (d) Rs. 500
3. If RUNNER is coded by SUMMER, the code for WINTER will be :
(a) XIMSER (b) VINTER (c) SINVER (d) VIOUER
4. Ram started his journey at 9.00 a.m. at 8 km/hour. Shyam started from the same spot in the same direction at 9.30 a.m. at 10 km/hour. Shyam overtakes Ram at :
(a) 11.00 a.m. (b) 12.30 p.m. (c) 12.00 noon (d) 11.30 a.m.
5. VCL, UEI, TGF, ?
(a) SJC (b) THI (c) SIC (d) RHD

MATHEMATICS

1. If a, b, c, d, e, f are in A.P., then $e - c$ is equal to
(a) $2(c - a)$ (b) $2(d - c)$ (c) $2(f - d)$ (d) $d - c$
2. The distance between the lines $5x - 12y + 2 = 0$ and $5x - 12y - 3 = 0$ is
(a) $3/13$ (b) $5/13$ (c) $7/13$ (d) $1/13$
3. A square park is surrounded by a path of uniform width 2 metres all round it. The area of the path is 288 sq. metres. The perimeter of the park is
(a) 142 m (b) 128 m (c) 136 m (d) 118 m
4. Which of the following is INCORRECT?
(a) $|a+b| \leq |a|+|b|$ (b) $|a-b| \leq |a|+|b|$ (c) $|a-b| \leq |a|-|b|$ (d) $|a-b|=0 \rightarrow a=b$
5. The value of $\cos(2\pi/7) + \cos(4\pi/7) + \cos(6\pi/7)$
(a) 1 (b) -1 (c) $1/2$ (d) $-1/2$

COMPUTER AWARENESS

1. Rotational delay time is also known as
(a) Seek time (b) Shift time (c) Latency (d) Access time
2. The memory which is utmost accessible to the processor is
(a) Cache memory (b) RAM (c) Hard disk (d) Flash memory
3. A terabyte comprises
(a) 1024 gigabyte (b) 1024 kilobyte (c) 1024 megabyte (d) 1024 byte
4. The binary equivalent of $(231)_{10}$ is
(a) 011100111 (b) 010011001 (c) 001110011 (d) 010111001
5. Which of the following is a programming language
(a) C# (b) Access (c) MS-Word (d) PowerPoint

GENERAL ENGLISH

1. Shoot is to Gun as Eat is to....
(a) Hunger (b) Thirst (c) Dinner (d) Fruit
2. Clever is to Beautiful as Sour is to....
(a) Lemon (b) Cunning (c) Loathing (d) Taste
3. The passive form of the sentence "They are not going to play the match today" is
(a) The match cannot be played today
(b) The match had not been played today
(c) The match was not played today
(d) The match is not going to be played today
4. The loan will be repaid __ 12 months
(a) by (b) for (c) in (d) from
5. Choose the correct meaning for the word Bizzare
(a) Breezy (b) Very strange (c) Depressing (d) Bright

3. Instructions to Fill in the Application Form

The applications for the entrance exam to MCA can be submitted **online** in the prescribed Application Form **ONLY**.

Ensure that you satisfy the eligibility criteria for the MCA Degree program (Carefully read the brochure available under the link MCA Admission (2014-15) - Information Brochure on the Goa University website www.unigoa.ac.in)

Filling up of the application form online is a **two step process**.

You need to have a valid email id and contact number for communication before you start the application process. Please create an email id if you do not already possess one.

You also need the following documents (scanned copies/pdf files/ images) before commencing Step 1 of the application process :

- a) **Your recent passport size photograph**
- b) **XII standard mark sheet**
- c) **Graduation: First Year and Second Year Mark sheets**
- d) **Third Year Graduation Mark sheet (if available)**
- e) **Valid Certificate for Reservation Category**
- f) **Anti _ Ragging affidavit duly signed by Student and Parent/Guardian**

(Refer

https://antiragging.in/upload/AntiRagging_How%20To%20Fill%20Affidavit.pdf
for a step by step guide to filling this affidavit)

Incomplete applications will be automatically rejected.

- Step 1** i) Click on the Admissions to MCA (apply_online) link on the Home page of the website. You will be presented with the online application form.
- (ii) Fill in the application form details online.
- (iii) Upload the necessary photographs/documents where requested.

- a) **Your recent passport size photograph**
- b) **XII standard mark sheet**
- c) **Graduation: First Year and Second Year Mark sheets**
- d) **Third Year Graduation Mark sheet (if available)**
- e) **Valid Certificate for Reservation Category**
- f) **Anti _ Ragging affidavit duly signed by Student and Parent/Guardian**

(Refer

https://antiragging.in/upload/AntiRagging_How%20To%20Fill%20Affidavit.pdf
for a step by step guide to filling this affidavit)

(iv) **Read the declaration and check mark the [I agree] checkbox to show your consent.**

(v) **Recheck that all data is correctly filled and all uploads have been made before clicking the Submit button. (The candidate should type all the requested information and UPLOAD required documents BEFORE clicking on the Submit button).**

- (vi) You will be given a Reference Pin number which you need to NOTE down for further reference to your application.
- (vii) An email will be sent to your specified email id for verification (Subject of email: Goa University Online Application).
- (viii) Click on the Verify link. You will get an email verification page (with your Reference Number and a link “Click Here”
- (ix) Click on the “Click Here” link which will take you to a form with fee payment details to be filled (**Step 2** of the Application Process).

Step 2 (i) Download & Print the bank challan (Click on the link “Click Here to download challan format”).

(ii) Make the necessary payment as indicated on the challan at the nearest State Bank of India branch.

(iii) Scan & Upload the challan copy after making necessary payments

(iv) Enter the Bank Details in the Form

(v) Enter the verification code and Submit the form to complete the process.

(vi) You will receive a confirmation message that your application has been successfully uploaded.

(vii) An email will be sent to your email id with your HALL TICKET and a pdf of the prospectus.

(viii) Download the HALL TICKET and take a PRINTOUT of the same. You will need to show the hall ticket at the venue of the exam.

(ix) Produce the HALL TICKET for your identification when requested, at the time of the examination.

Entrance Test and Admission Process:

- 1. All notifications will be made on the University website and Departmental Notice boards. (NO separate intimations will be sent to candidates).**
- 2. Be present at the venue WITH YOUR HALL TICKET at least 30 minutes before the start of the Entrance Test.**
- 3. Bring your own stationary (HB pencil, eraser and black ball point pen). No cell phones, calculators or any other material will be allowed in the examination hall.**
- 4. Results (Merit List/Waiting Lists) will be put up on the University website/Department notice boards on the dates specified. (NO separate intimation will be sent to candidates).**
- 5. Bring a document for your identification (drivers license/ election card/ aadhar card/passport/college identity card/pan card) at the time of admission.**
- 6. Original certificates need to be produced at the time of admission.**
- 7. Original certificates need to be produced at the time of admission.**
- 8. Payment of fees will have to be done at the SBI, Goa University branch, through challans, on or before the last date for registration.**

Important Dates for Admission to the Academic Year 2014 – 2015

- Issue of Prospectus & application form 22nd April 2014
- Last date for receipt of completed application form6th June 2014 (Friday)
- **Entrance Test Date and Time ----- 12th June 2014 (Thursday)
(2.30 - 4.30 pm)**
- Display of merit list and waiting list (Adm Rnd 1).....16th June 2014 (Monday)
- Last date for registration by merit list candidates.....19th June 2014 (Thursday)
- Display of list of admissions to waiting list candidates (Adm Rnd 2). ...20th June 2014
- Last date of registration for waiting list candidates (Rnd 2)..... 23rd June 2014 (Monday)
- Final round of admission and registration to waiting list candidates (**Open Admission**)
25th June 2014 (11am).