6. MCA PROGRAMME

6.1 MODES OF PROGRAMME:
- Regular Mode(3yrs, 2yrs)
- Distance Education Mode(3 yrs)

6.2 ELIGIBILITY:

MCA (3 years duration)

Recognized bachelor degree of minimum 3 years duration in any discipline with at least 60% marks (55% for SC/ST) in aggregate. Mathematics must be studied at 10+2 level or at graduation level, and has also appeared in the entrance test to be conducted by the university.

Mode of Selection: Admission shall be made on the merit of the entrance test to be conducted online by the University across India.

MCA Lateral Entry (2 years duration)

Recognized bachelor degree of minimum 3 years duration in BCA, B.Sc. (IT/ Computer Science) with atleast 60% marks (55% for SC/ST) in aggregate. Mathematics must be studied at 10+2 level or at graduation level, and has also appeared in the entrance test to be conducted by the university.

Mode of Selection: Admission shall be made on the merit of the entrance test to be conducted **offline** by the University at Patiala.

6.3 REGULAR MODE

6.3.1 Duration of the Programme:

The programme is spread over a period of three years consisting of six semesters. The first year is exempted for candidates admitted through lateral entry in the second year. The students study courses for five semesters at the University and do a Software Development Project (SDP) in the sixth semester in some reputed industry.

6.3.2 Number of Seats: 90

In addition to above seats, 1% over and above seats are reserved for children of employees of Thapar University. The candidates seeking admission under this category are required to satisfy the eligibility as mentioned above at 6.2.

6.3.3 Distribution of Seats:

(a) First year

General	SC/ST	PH	Total
64	23	3	90 (+ 14 FN/NRI seats. Refer section 11 for eligibility & other conditions)

(a) Second year through lateral entry

General	SC/ST	PH	Total
17	6	1	24

6.4   DISTANCE EDUCATION MODE:

This programme is also spread over a period of three years consisting of six semesters. The programme is approved by the UGC-AICTE-DEC. The students study courses for five semesters and do a software development project in the sixth semester in the Institution/Industry recognized by TU.The objective of the programme is to provide an opportunity to those students who want to upgrade their studies/ knowledge through distance education as well as for those who are working in any organization. The main thrust in the programme will be to polish the professional aptitude of the students through lectures by the experts in their respective fields.

6.4.1   Salient Features of Distance Education Mode:

- Admission would be made once in a year along with regular MCA students through the same Entrance test conducted by Thapar University, Patiala.
- Expert Lecture notes/ Self Instruction Material would be provided to students at the start of each semester for each subject.
- Ten (10) personal contact hours for laboratory work per semester would be made available for all the students for each subject having laboratory component.
- 16 weeks Project semester would be on similar lines as that for regular MCA students.
- Students would be provided one instructor in-charge for each subject in each semester for clearing the problems.
- Evaluation of the students would be made in the form of quizzes/short answer type questions/ laboratory examination/ assignment sheets and end semester examination with different weightage to each component.

6.4.2   Number of seats: 60

General	SC/ST	PH	Total
43	15	2	60

Note:

1   The University, if deems fit, may also admit students in Distance Mode in August 2014 for vacant seats (if any). The eligibility will be same as mentioned at 6.2 above & schedule of admission shall be available on our website in the last week of July 2014.

2   MCA (Distance mode) shall run only if minimum of 10 students are admitted in the program.

3   In case a candidate is eligible for both MCA (3 years) and MCA (2 years) then he/she is required to apply separately for each program.

IMPORTANT DATES AND INFORMATION:

The online application form is available on www.thapar.edu. Fill the complete details and then take the **print out** of the form. Paste a recent passport size photograph on it. Please keep one copy of the printout of completely filled form as it will be required at the time of document checking during counselling. You can pay the the required amount online or attach DD (in favour of Thapar University and payable at Patiala) and send it to "Incharge Admission Cell' Thapar University, Patiala (Punjab)-147004.

Application fee:

Amount to be deposited with **print out** of application forms taken from website.	Rs 1500

IMPORTANT DATES

	MCA programs
Last date for receipt of completed application forms.	June 04, 2014
Date of Entrance test to be conducted by TU	ONLINE Entrance test (**June 24 – 29, 2014**) Browse www.thapar.edu for details MCA(OFFLINE TEST for lateral entry) to be conducted at Thapar University, Patiala: June 15, 2014
Display of result of Entrance Test	MCA(OFFLINE TEST for lateral entry): June 22.2014 For others: July 07,2014

Admission schedule:

MCA admission schedule
    Counselling including deposit of fee   : July 16, 2014
        2 yr program   9.00 AM
        3 yr program   10.00 AM
    Last round of counselling for vacant seats if any   : July 29, 2014

Venue for counseling/document checking: University Auditorium

FOR ANY OTHER DETAILS INCLUDING ELIGIBILITY CRITERIA, FEE ETC

CONTACT (08288008120, 08288008121)
Email: admissions@thapar.edu
Website: www.thapar.edu

IMPORTANT NOTE: Candidates are advised to regularly browse www.thapar.edu for information/instructions regarding admissions. No separate letters shall be sent.

All applications must be sent to "Incharge Admission Cell' Thapar University, Patiala (Punjab)-147004.

Documents required at the time of counselling:

Candidates must bring with them following original certificates and **a set of attested copies of all the certificates** at the dates specified hereunder for various programmes**.**

- **Copy of the Application form**
- 10+2 /diploma/graduation/post graduation DMC
- Matriculation/Higher Secondary Certificate showing Date of Birth
- Result Card of Entrance Exam
- Admit Card of Entrance Exam
- Character Certificate
- Medical Fitness Certificate
- Reserved Category Certificate on the prescribed proforma and signed from the competent authority (if applicable)
- Affidavit required in case of discontinuity of studies
- Undertaking by candidates not having result of qualifying exam as per prescribed format.
- Migration Certificate
- Income Certificate
- Experience certificate & No objection certificate from employer. (For PhD candidates)
- **Check list proforma**

Commencement of session: July 21, 2014

HOW TO APPLY

1 Candidates seeking admission in TU shall fill up the online form available on our website www.thapar.edu.Kindly fill the complete details and then take two print outs of the form and paste a recent passport size colored photograph.

Application fee paid Online: Please send one of the printouts of form to the Incharge Admission Cell. The hardcopy of application form alongwith required documents should reach the University within 7 days after the last date of submission of online applications.

Application fee paid through DD: Please send one of the printouts by attaching the required amount of DD (in favour of Thapar University and payable at Patiala).

Retain second copy of the printout of the form to be produced at the time of document checking of original documents during counseling.

Important Note: A candidate cannot claim admission merely by filling the application form and paying the application fee. If he/she fulfils the eligibility criteria as per the prospectus, only then he/she shall be considered for admission during counseling. So, candidates are advised to read eligibility and other conditions before filling the form.

2 The original certificates and set of attested copies of the certificates are required to be produced at the time of document checking.

3 Every candidate must indicate in his/her application the category of seat for which he/she wants to apply. **A copy of the certificate of the reserved category (if applicable) shall be attached.**

4 Application completed in all respects should reach the INCHARGE ADMISSION CELL, THAPAR UNIVERSITY, PATIALA -147004, on or before the last prescribed date of the respective programmes.

5 Incomplete application in any manner and received after the due date/time will be rejected. The University does not take any responsibility for postal delay or loss in transit of the application form, demand draft, withdrawal form or any other communication in this regard.

6 The specimens of the format of the required certificates are available on our website for the guidance of candidates. Each certificate must be submitted on the prescribed format and must be issued by the competent authority as mentioned, under proper seal/stamp of their office on a date prior to or on the last date for submission of application form.

7 **PENALTY FOR WRONG INFORMATION/SUPPRESSION OF INFORMATION.**

If at any stage it is found that a candidate has concealed, suppressed or distorted any informaton/fact,in the application form,his/her admission to the University, if granted, shall stand cancelled. He/she will have no claim, whatsoever, against the University.

8   The provisions of Prospectus 2014-15 may be changed by the competent authority without any notice.

9   In case of any dispute, the decision of the Director, TU, Patiala shall be final and binding on the candidates.

10   **For candidates other than BE/BTech**
     Candidates who are appearing in the final exam of the qualifying degree/diploma(for LEET) are eligible to apply. Such candidates have to furnish following undertaking at the time of counselling.
     "I am applying on my own risk and responsibility as my final result of the Qualifying exam has not been declared.
     I do hereby declare that I do not have any backlog paper in any of the previous semesters (Years) of study of the qualifying exam and also I do not expect any backlog in my final exam.
     I assure you that I will produce the proof of passing of my Qualifying examination with the minimum percentage of marks required on or before December 31, 2014, failing which my admission shall stand cancelled and I shall not claim any right on any count whatsoever."

11   **Candidates applying for MCA (2 yr) and MCA (3 yr) programmes are required to fill separate application form for each program.**

INSTRUCTIONS FOR ONLINE ENTRANCE TEST

1   Candidates will be able to generate 'Admit Card' from April 16-June 17, 2014 provided their DD alongwith print out of application form reaches Thapar University in time. The login id and password created by candidate at the time of filling the application form shall be used to register for generation of Admit card.

     Note: The Admit card shall be issued provisionally to the candidate subject to his/her satisfying the eligibility condition.

2   After registering, the candidate shall take out two print outs of 'Admit Card", paste latest photograph on each and then come to the entrance test centre. Alongwith admit cards, the candidate will also carry any one of the identity proof (Original) with him/her like Passport/Voter I Card/ PAN Card/ Driving License. One copy of the admit card shall be retained by the entrance test centre. The candidate shall keep the other copy (duly acknowledged by the examiner at test centre) to be shown at the time of document checking.

4   **The entrance test shall contain objective type questions. Other details are as under:**

SNo	Name of the programme	Duration of Entrance Test	Number of questions in the entrance test
1	MCA	3 hours	150

5   While registering for ONLINE entrance test on our website, the candidate shall choose entrance test centre of his/her choice from the available list and any one slot available in the test period given above i.e. (**June 24 – 29, 2014**). Once slot is chosen, it cannot be changed thereafter.

6   Filling of valid mobile number is mandatory.

Instructions for counseling for programs other than BE/BTech

Admission shall be made on the basis of the merit of prescribed Entrance Test of respective programmes and fulfillment of other conditions as per procedure detailed in the Prospectus.

General Instructions:

1   In case of a tie among candidates securing equal marks in the merit list, the same will be broken in accordance with the following criteria:

(a) Candidate senior in age shall rank higher in order of merit.

(*b*) In the case of a tie in age also, a candidate getting higher percentage of marks in the qualifying examination shall be ranked higher in order of merit.

(*c*) In the case of a tie in percentage of marks in the qualifying examination also, a candidate securing higher percentage of marks in matriculation/secondary or equivalent examination shall rank higher in order of merit.

2   Withdrawal of Seat / Refund of fee:

Candidate wishes to withdraw the seat, must submit the application to IN-CHARGE, ADMISSION CELL, Thapar University. The fee will be refunded after adjusting all the outstanding dues, if any. The candidates are advised to mention their Account Number and IFSC code of the bank for the prompt refund.

	Date of Receipt of Application		**Amount to be refunded**
(i)	One day before the final counseling or before the start of the session	:	After deducting Rs. 1000/- of the total fee deposited.
(ii)	From the date of final counselling and up to September 30, 2014	:	50% Tuition Fee + 50% Development Fee + University Security and Alumni Fee + 50% of all Hostel dues (if applicable)
(iii)	After September 30,2014	:	University Security + Alumni Fee

3   Seats, if any in the reserve categories remained unfilled, such vacant seats shall be filled by General category candidates on the basis of merit. In case a SC seat remains vacant, it will be first offered to ST candidate or a vice versa before converting into General Category.

4   Candidates from physically handicapped category are required to produce the Medical Certificate from the Chief Medical Officer of the District concerned, which should indicate the extent of permanent disability in support of their claim. Minimum 40% permanent disability is required to be eligible under this category. Further, the above provisions will be subject to the decision of the Admission Committee of the University whether such a candidate would be able to pursue the studies at the University with the specific disability. The decision of the Admission Committee in this regard shall be final.

5   No separate letters for counseling/document checking/deposit of fee shall be issued for any programme.

6   Admitted candidates will have to submit the migration certificate from the earlier University/Board within a month of their admission.

7   Electronic gadgets such as Mobile Phones, Pagers, etc. are not permitted in the Examination Centre.

8   The statements made in this Prospectus and all other information, contained herein are believed to be correct at the time of publication. However, the University reserves the right to make at any time, without notice, changes in and/or additions to the regulations of University and conditions governing the conduct of students, requirements for degree, fee and any other information, or statements contained in this Prospectus either on its own or under any rules or regulations imposed by UGC/MHRD. No responsibility will be accepted by the University for hardship or expense encountered by its students or any other person for such changes, additions, omissions or errors, no matter how they are caused.

9   All disputes will be subject to jurisdiction of the Courts at Patiala only. The person in whose name the University can sue or be sued shall be the Registrar, Thapar University, Patiala.

10   The students of all the regular programmes are not allowed to join any job till they complete all the requirements for the award of degree. Only part-time students are allowed to join job.

11   In case,
a selected candidate submits false information about fee, eligibility, rank of entrance test
or
a candidate who is not offered any seat but deposits the full fee

then seat allotted to him/her shall stand cancelled.

12   Candidates must be medically fit and must bring along with them a medical fitness certificate signed by a Gazetted Medical Officer at the time of admission on the prescribed proforma as per Annexure-IV.

13 MODES OF PAYMENT OF APPLICATION FEE AND OTHER DUES:

13.1   APPLICATION FEE : In the form of DD or through Online payment.

13.2   TOTAL FEE:

i)   **Receipts in any Axis Bank/Kotak Mahindra Bank account-to-account transfer**): It is available in all the branches of **Axis Bank/Kotak Mahindra Bank**. A sample payment pay-in-slip is enclosed at Annexure-IX. The system generates **Journal Number** which is to be used for linking the payment. The students are instructed to get the 6-10 digit **journal number** from the branch where they have made the payment and feed the same in the web site where the details are captured along with date of payment. The deposit of amount in the below mentioned account of the University will not give any right to the depositor for jurisdiction of the station where it has been deposited in any manner what so ever it may be.

For depositing money through AXIS/KOTAK MAHINDRA BANK, a candidate can deposit money in favour of the following account:

AXIS Bank	KOTAK MAHINDRA BANK LTD
910010028666757	02630020000237

ii)   In the form of Demand Draft (DD), the DD of requisite amount should be made in favour of Thapar University, Patiala and payable at Patiala. The DD must reach the University on or before the prescribed date otherwise the candidature shall be cancelled.

iii)   Candidates depositing total fee through AXIS/KOTAK MAHINDRA BANK must enter complete details in 'Fee Confirmation Slip' (FCS) available at www.thapar.edu on or before the respective last prescribed date. In case, a candidate fails to enter the details, his/her candidature will not be processed further.

GENERAL INFORMATION REGARDING MCA ENTRANCE TEST INCLUDING ENTRANCE TEST SYLLABUS

I   MCA (3 year program)

Duration of Test   : 3 Hrs
No. of Questions   : 150
There will be objective type questions. 1/4th marks shall be deducted for wrong answer.

Section-I: Mathematics (60 Questions)

1. **Geometry:** Two-Dimensional; straight lines, circles and conic sections, Three- Dimensional; straight lines and spheres.

2. **Algebra**: Set theory, Relations, Mappings and its applications, Permutations and Combinations.

3. **Calculus**: Limits, Continuity and Differentiability, Rolle's and Mean value theorems, Differentiation, Partial Differentiation, Maxima and Minima of functions of one and two variable. Successive differentiation. Integration by using substitution, partial fraction and by parts, Definite integral and its properties, Applications of definite integral to evaluate length and area of simple plane curves.

4. **Vector Analysis:** Scalar and vector products of two , three and four vectors and their applications.

5. **Statistics, Probability and Linear programming**: Measures of Central tendency, Dispersion, Skewness and Kurtosis. Correlation and Regression. Basic concepts of probability, Conditional probability, Baye's theorem, Discrete and continuous distributions (Binomial, Poisson, and Normal distributions), Fundamentals of linear programming problems, Graphical solution, Simplex method and its variants.

6. **Matrices:** Types of matrices rank of a matrix, solution of system of linear equations, Cayley Hamilton theorem, Inverse of a matrix, Determinant and its properties.

7. **Numerical Analysis:** Solution of non-linear equations using iterative methods, Interpolation (Newton's, Lagrange's and Forward formulae), Numerical Integration (Trapezoidal and Simpson Rule).

Section-II: Computer Awareness (50 Questions)

o **Computer Basics** : Organization of a computer, Central Processing Unit (CPU), input/output devices, computer memory, memory organization, back-up devices, Categories of Computers.

o **Data Representation** : Representation of characters, integers, and fractions, binary and hexadecimal representations, Binary Arithmetic: Addition, subtraction, division, multiplication, floating point representation of numbers, normalized floating point representation, Boolean algebra: truth tables, Venn diagrams.

o **Basics of C Programming and Operating Systems :** Computer programming in C : data types, loop and control statements, functions. Fundamentals of operating systems: multiprogramming, multitasking, Multiprocessing and time sharing systems.

o **Networking and Internet :** Categories of Computer Network, Network topologies, Network media, Concepts of LAN, MAN and WAN, Search Engines, Basic internet applications.

Section-III: Analytical Ability, Communication Skills and General Knowledge: (40 Questions)

The questions in this section will cover logical reasoning, quantitative reasoning, visual-spatial reasoning and Communication skills. This section shall also contain questions to test the general knowledge about business, finance, industry, transportation, scientific inventions, information technology, governance, healthcare, cultural dimensions etc.

II   MCA (2 year program)

Duration of Test: 3 Hrs

No. of Questions : 150

Question paper will have multiple choice questions. There will be a negative marking of 25% for each wrong answer.

Section-I: Mathematics (40 questions)

1. Geometry: Two dimensional- straight lines, circles and conic sections; Three dimensional- straight lines and spheres.

2. Mathematical Foundation for Computer Science: Set theory, Permutation and combinations; Relations, Properties and representation of relations, Transitive closure, Partial ordering relation, Special types of lattices and finite Boolean algebra; Functions and their applications, Recurrence relations, Algebraic structures (semi-group and groups), Graphs and their representation, Connected graphs and spanning tree, Proposition and logical connectives, Conditional and biconditional statements, Rules of inference using statement calculus, Quantifiers and inference theory using predicate calculus

3. Vector Analysis: Scalar and vector products of two, three and four vectors, and their applications.

4. Statistics, Probability and Linear Programming: Measures of central tendency, Dispersion, Skewness and kurtosis, Correlation and regression, Basic concepts of probability, Conditional probability, Baye's theorem, Discrete and continuous distributions (Binomial, Poisson, and Normal distributions), Fundamentals of linear programming problems, Graphical solution, Simplex method and its variants.

5. Matrices: Types of matrices Rank of a matrix, Solution of system of linear equations, Cayley Hamilton theorem, Inverse of a matrix, Determinant and its properties.

6. Numerical Analysis: Solution of non-linear equations using iterative methods, Interpolation (Newton, Lagrange and Forward formulae), Numerical Integration (Trapezoidal and Simpson Rule).

Section-II: Computer Science (75 questions)

1. C Programming: Fundamentals, Identifiers and keywords, Data types, Declarations, Standard and formatted input-output statements, Operators and Precedence, Control statements, Storage classes, Pre-processors, Functions, Recursion, Arrays and strings, Pointers, Structure and union, File handling.

2. Operating Systems: Fundamentals, Process management, CPU scheduling algorithms, Memory management- paging, segmentation, demand paging; Deadlocks- prevention, avoidance, detection and recovery; Process synchronization, File management, Disk scheduling, I/O devices.

3. Computer Organization and Architecture: Number system, Karnaugh map, Combinational circuits, Sequential circuits, Instruction cycle, Addressing modes, Parallel processing, Instruction pipeline, Memory hierarchy, Cache memory, Virtual memory- paging and segmentation.

4. Data Structures: Algorithm complexity, Big O notation, Arrays, Linked Lists, Stacks, Recursion, Queues, Binary search trees, Threaded tree, AVL, B-trees, B+ trees, Graphs- BFS, DFS, applications of graphs; Searching and sorting algorithms, Hashing.

5. Object Oriented Programming: Basic concepts of object-oriented programming, Classes and objects in C++, Static member functions, Inline and friend functions, Constructors and destructors, Function overloading, Operator overloading, Type conversions, Inheritance, Virtual functions and polymorphism, Files and streams, Exception handling.

6. System Analysis and Design: Categories of information systems, Structured analysis method, System prototype method, SDLC, Feasibility study, Requirements gathering, Data flow diagrams, Data dictionaries, Decision tables, Decision trees, Design of input, Design of output, Program structure chart, Coupling, Cohesion, Span of Control, Module size, and Shared modules.

7. Networking and Internet: Categories of computer network, Network topologies, Network media, Concepts of LAN, MAN and WAN, OSI and TCP/IP reference model, Classless and classful addressing, IPv4, Search Engines, Basic Internet and intranet applications.

Section-III: Analytical Ability, Communication Skills and General Knowledge: (35 questions)

Logical reasoning, quantitative reasoning, visual-spatial reasoning, communication skills, general knowledge about scientific inventions and information technology.