

ADMISSION INFORMATION BROCHURE

for

**3-Year (6-Semester)
Full-Time MCA Programme 2018-2021**

at

Birla Institute of Technology, Mesra

and

Its Extension Centres at Jaipur, Lalpur and Noida



BIRLA INSTITUTE OF TECHNOLOGY

(A Deemed University u/s 3 of UGC Act 1956)

Mesra, Ranchi - 835215

Jharkhand, India

Website: <http://www.bitmesra.ac.in>

CONTACT DETAILS

Centre	Addresses and contact details
Mesra	Dean, Admissions & Academic Coordination Birla Institute of Technology Mesra, Ranchi - 835215 Phone: PBX: 0651-2275444 / 896 / 2276496, Extn 4469, & 2275868 (D) Fax: 0651- 2275401, 2276007 e-mail: admissions@bitmesra.ac.in For Information about MCA programme: Head, Department of Computer Science & Engineering Birla Institute of Technology Mesra, Ranchi - 835215 Phone: 0651–2275548
Jaipur	Director, Birla Institute of Technology Extension Centre 27, Malviya Industrial Area, Jaipur - 302018 Phone: 0141– 4019798 / 4019819, Fax: 2751601 e-mail: bitjaipur@bitmesra.ac.in
Lalpur	Director, Birla Institute of Technology Extension Centre Lalpur Ranchi - 834001, Phone: 0651–2531817 / 2531676, Fax: 2531658 / 2531676 e-mail: bitlalpur@bitmesra.ac.in
Noida	Director, Birla Institute of Technology Extension Centre A-7 Sector-1, Noida - 201301 Phone: 0120 – 2543484 / 2553661 / 3662, Fax: 2554146 e-mail: bitnoida@bitmesra.ac.in

Please see our website for addresses and contact details of our other Extension Centres.

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IMPORTANT DATES

Filling of online form commences from	1 March 2018
Last date to Apply online	30 April 2018
Last date for receipt of printout of electronically filled application form along with required enclosures at BIT Mesra, Ranchi	11 May 2018
Admit card release date	26 May 2018
DATE FOR ONLINE ENTRANCE TEST	3 June 2018 (Sunday)
Declaration of 1st Provisional Selection List along with complete merit list on the Institute website / Notice Boards	15 June 2018
Classes will commence from the 2nd / 3rd week of July 2018 at all Centres (Exact date will be announced at later stage)	

Note: All the dates mentioned above are tentative, and liable to be changed. Hence, please check our Institute website periodically.

Sec 1. Admission to MCA 2018 - an Introduction and How to Apply

Master in Computer Applications (MCA) programme at the Birla Institute of Technology, Mesra, Ranchi is of 3 years, duration.

How to Apply: (Please see Instructions also for details)

1. To start online application, click on the link, create 'username' and 'password' by clicking on "New users register here" when prompted. Do not share the username and password with any body else.
2. To apply for the MCA programme 2018, eligible candidates must complete and submit the application online [link available on Institute website www.bitmesra.ac.in]. Pay application fee through **State Bank Collect** (any nationalized bank) of Rs.2,500/- (General / OBC candidates) and Rs.1,500/- (for SC/ST candidates). **Fee once remitted shall not be refunded under any circumstances.**
3. Send a printout of electronically generated application form along with required enclosures (see List of Enclosures) in a A4 size envelope by Speedpost / reliable courier (means by which sender may track its movement on internet) to the office of **Dean, Academic Coordination, Birla Institute of Technology, Mesra, Ranchi – 835215, to reach positively by the due date.**
4. Write "Application for MCA-2018" on top of the envelope.
5. Applications reaching us after the due date are liable to be rejected / may not be processed.
6. You may opt multiple choice of place for study (Centre) at BIT Jaipur, BIT Lalpur, BIT Mesra and BIT Noida, in order of your preference. **Please do not make any corrections or add any preference of Centre by hand on the printout of the form, as these will not be saved to the database.**
7. Please do not print a blank form and fill it by hand as this will not be accepted.

Note: Candidates should proceed to fill the Online Application Form only after they satisfy themselves that they fulfill all the eligibility criteria.

Form / Application Numbers

The Form / Application numbers on each online application form may be noted and cited in correspondence, if required.

Note:

For queries about the MCA programme, please contact the Head, Department of Computer Science & Engineering at Mesra. For queries about admission, please contact the Admission Office at Mesra. For queries about Extension Centres, please contact the Director of concern Centre [Please see directory on the Institute website/ page 2 of this Brochure].

Sec 2. The Online Computer Based Test 2018

The Birla Institute of Technology, Mesra, Ranchi, will conduct an Online Computer Based Test for shortlisting candidates for admission to its 3-year (6-semester) full-time MCA programme 2018, commencing in July 2018 at Mesra, Ranchi, and its Extension Centres at BIT Jaipur, BIT Lalpur and BIT Noida. Please see section 10 for the details of the Test including syllabus, number of questions, duration of the Test, marking, etc.

The MCA 2018 Online Entrance Test will be held on 3rd June 2018 (Sunday) at various Test Centers as follows: Allahabad, Bangalore, Hyderabad, Indore, Jaipur, Kolkata, Mumbai, Patna, Noida, and Ranchi - provided there are sufficient number of candidates at each of the given Test Centers. Candidates must give two choices for first and second preference of Test Center from the list of Test Centers above. In case the number of candidates opting for a given Test Center is less than a certain minimum, the Institute reserves the right to shift candidates to the nearest alternative Test Center (see Note 1 below).

Depending upon the number of candidates at a given Test Center, the Test may be held upto three time slots at the Center, that is from 9.00 to 11.00 am, 12.00 to 2.00 pm, and 3.00 to 5.00 pm.

Admit Cards:

Admit cards will be issued to all eligible candidates whose properly completed application forms have been received within the stipulated time at the office of the **Dean, Admissions & Academic Coordination, BIT Mesra, Ranchi**. Candidates will be allotted a Test Center, date and time slot for the Test, as above. The Institute will try to allot the Test Center and date as per candidates' preference as far as possible. However, the Institute reserves the right to shift candidates to an alternative Test Center / date, based on the number of candidates for a given Test Center / Test Center capacity.

The candidates should download their admit cards from the Institute website on or after **26th May 2018**. If a candidate is unable to download the admit card, candidates should contact the Admissions Office at BIT Mesra, Ranchi by telephone or fax (contact numbers are given in page -2 of this Brochure).

The admit card is not transferable to any other person. Impersonation is a punishable offence under law. No applicant will be allowed to appear for the Test without a valid admit card. The admit card will be required to be produced at the time of admission also. Therefore, all candidates are required to preserve the admit card until the admission process is complete.

At the end of the online test, the score obtained by the candidates will be flashed on the computer screen. The invigilators will note the same on scribble pad and issue the same to the candidate and retain a copy for the Institute.

Candidates should visit our Institute website <http://www.bitmesra.ac.in> periodically for any updates or any other matter related to the Online Entrance Test.

Notes:

1. The Institute reserves the right not to conduct the Test at a particular Center, if the number of candidates for that Center is less than a certain minimum.
2. Once a Test Center is allotted to a candidate, it will not be changed under any circumstances.

Sec 3. List of enclosures to be submitted along with the electronically generated application form

1. A print-out of the duly electronically generated online application form
2. One recent colour photograph – [same as uploaded on the form] and attached by clip (write your Name, Form No. and “MCA-2018” on the back of the photo).
3. **Payment receipt towards application fee of Rs.2,500/- (General / OBC) and Rs.1,500/- (SC/ST) candidates (non-refundable)**
4. **A set of self-attested photocopies of certificates** as listed below: (write your Name, Form No. and “MCA-2018” on the back of each of the photocopies):
 - a) Pass certificate of Class 10 (as proof of age)
 - b) Marksheet of Class 10
 - c) Marksheet of Class 12 / Intermediate or equivalent
 - d) Marksheets of Graduation for graduates
OR
Marksheets upto pre-final year for candidates graduating in 2018, (s)/he must also enclose photocopy of a certificate from the Principal of Institute stating that:
 - (i) by 30 June 2018, he/she will have appeared for examination in all subjects required for obtaining his/her Bachelor’s degree.
 - (ii) He/she has obtained requisite marks or equivalent based on latest available grades / marks.
 - e) **Candidates with qualifications acquired through correspondence or distance-learning programmes must enclose with their application, photocopies of Pass certificate in addition to marksheets of qualifying examination showing that they have passed the qualifying examination with requisite marks. They must also enclose proof of the programme recognized by the DEC-IGNOU in letter head of the Institute / College / University. [Appearing candidate in distance learning programmes, whose results are yet to be declared, are not eligible to apply].**
 - f) Caste certificate (if applicable), which **should be in proper format and signed by appropriate authority of rank not less than SDO.**
 - g) Candidates belonging to other special categories mentioned in Sec 7 [Person with Disability (PwD) / Kashmiri Migrant /Ward of BIT Employee] must provide photocopy of certificate in proper format from appropriate authority.
 - h) Photo identification: (Driving license, Passport, PAN Card, Voter ID, College ID, Aadhaar Card, Employee Identification Card are acceptable).

Note: Incomplete applications or applications received without all required enclosures are liable to be rejected / may not be processed.

Sec 4. Eligibility Criteria

- 1) The candidates must have passed in Mathematics / Computer Science / Information Practices as one of the subject in Class 12 / Equivalent Examination.
- 2) Candidates must hold a Bachelor's Degree or equivalent qualification of any of the Universities incorporated by an act of the central or state legislatures in India or other educational institutions established by an act of Parliament or declared to be deemed as a University under section 3 of UGC Act, 1956, or possess an equivalent qualification recognized by the Ministry of HRD, Government of India / AIU. This degree must entail a minimum of three years of education after completing higher secondary schooling [Class 12 or equivalent] (10+2+3 system).
- 3) Candidates must have one of following qualifications:
 - a) Bachelor of Computer Applications, or
 - b) B.Sc. in Computer Science / Information Technology / Electronics, or
 - c) B.Sc. with Mathematics or Statistics as one of the subjects at graduate level.
- 4) Candidates with above mentioned qualifications (item-3) must have minimum 55% (50% for SC/ST/PwD) marks in average in graduation, marks to be computed as average of marks obtained in all subjects in which candidate has appeared.
- 5) Candidates with B.Sc. Honours must have minimum 55% (50% for SC/ST/PwD) marks in average in their Honours subject.
- 6) Candidates appearing for final examinations of their Bachelor's programme in 2018 can also apply, provided they have obtained requisite marks or equivalent (as per item 4 or 5 above) based on latest available grades / marks at the time of applying, and if selected can join the programme provisionally. At the time of reporting for the verification of documents cum admission such an applicant must bring a certificate in original from the Principal of Institute stating that:
 - a) by 30 June 2018, (s)/he will have appeared for examination in all subjects required for obtaining his/her Bachelor's degree.
 - b) (s)/he has obtained requisite marks or equivalent (as per item (4 or 5) above), based on latest available grades / marks.

Their admission will be confirmed only when they submit the mark sheet and a certificate of having passed the Bachelor's degree / equivalent qualification with requisite marks as per item (4 or 5) above. They must submit proof of passing their final examinations with requisite marks by **31 October 2018**. Non-fulfillment of this condition will automatically result in the cancellation of the provisional admission.

- 7) **Candidates with qualifications acquired through correspondence or distance-learning programmes are eligible only if (a) the programmes are recognized by the DEC-IGNOU, (b) they have passed the qualifying examination at the time of applying, with minimum 55% marks in average (50% for SC/ST/PwD) calculated as per item (4 or 5) above. They must enclose photocopies of pass certificate, marksheets of qualifying examination and proof of the programme recognized by the DEC-IGNOU in letter head of the Institute/College /University. with their application. [Appearing candidate in distance learning programmes, whose results are yet to be declared, are not eligible to apply].**

Notes:

(1) Candidates with foreign diplomas should see the EdCIL website for equivalence (<http://www.edcil.co.in>), and if required should obtain an equivalence certificate from the evaluation division of the AIU (website <http://www.aiuweb.org>).

(2) In case any Board / University awards grades instead of marks, the calculation of equivalent marks would be based on the procedure prescribed by the Board / University. In case a University does not have any scheme for converting CGPA into equivalent marks, the equivalence would be established by dividing obtained CGPA with the maximum possible CGPA and multiplying the resultant with 100.

(3) At any level of the studies [class X, class XII or graduation], a candidate / applicant must have passed all the required subjects at that level from the same Board/ University.

Sec 5. Admission and Selection Procedures

Candidates will be short-listed for admission on the basis of marks obtained by the candidates in the MCA 2018 online entrance test conducted by the Institute and will be notified on the **Institute website and Notice Boards at BIT Mesra / concerned Centre by 15th June 2018. No separate intimation will be sent to candidates.** Candidates should thus check Institute website <http://www.bitmesra.ac.in> regularly for any updates or matters related to the admission.

Candidates are advised to carry required documents / certificates along with photocopy of their Application Form at the time of reporting for admission cum verification of documents [please see [Sec-6](#) for details].

Note: Admission will be offered subject to verification of the original documents / certificates and fulfilling the eligibility conditions at the time of admission.

Selection Procedure:

- **The provisional selection will be made on the basis of marks obtained by the candidate in MCA 2018 Online Entrance Test conducted by the Institute.**
- Candidates called for the verification of documents will be offered admission subject to fulfillment of the eligibility conditions.
- The waitlisted candidates may be called for verification of documents and admission against the vacant seats, if any, in successive rounds, as required. The same will be intimated on the Institute website only as web notifications. **No separate intimation will be sent to candidates.**

Cancellation of Admission Offer:

- The admission of a candidate will be automatically cancelled:
 - if any information provided in the application form is found incorrect or missing.
 - who fail to submit the final degree / qualifying examination in time as stipulated or fail to secure minimum eligible marks in the degree / qualifying examination.

Note: Eligible SC/ST, OBC, PwD students admitted to MCA programme at any of the Centre should submit their scholarship form in the Scholarship Section of the Centre for the academic year by February for processing scholarship to SC/ST, OBC, PwD students each year, as per UGC guidelines.

Sec 6. Documents required at the time of reporting for Admission

Candidates must carry the originals of the following documents at the time of reporting for admission cum verification of documents, as well as one set of self-attested photocopies:

1. Pass certificate of Class 10 (as proof of age)
2. Marksheet of Class 10
3. Marksheet of Class 12 / Intermediate or equivalent
4. Marksheets of Graduation for graduates

OR

Marksheets upto pre-final year for candidates graduating in 2018. He /She must also bring a certificate from the Principal of Institute stating that:

- (i) by 30 June 2018, he / she will have appeared for examination in all subjects required for obtaining his/her Bachelor's degree.
- (ii) He / she has obtained requisite marks or equivalent based on latest available grades / marks.

5. **Candidates with qualifications acquired through correspondence or distance-learning programmes must carry a proof of pass certificate in addition to marksheets of graduation and proof of the programme recognized by the DEC-IGNOU in letter head of the Institute/College /University.**
6. Admit Card for the MCA 2018 Online Entrance Test
7. Score Card of the MCA 2018 Online Entrance Test
8. Caste certificate (if applicable), which **should be in proper format and signed by appropriate authority of rank not less than SDO.**
9. Candidates belonging to other special categories mentioned in Sec-7 [Person with Disability (PwD) / Kashmiri Migrant / Ward of BIT Employee] must provide photocopy of certificate in proper format from appropriate authority.
10. Photo identification: (Driving license, Passport, PAN Card, Voter ID, College ID, Aadhaar Card, Employee Identification Card are acceptable)

They should also carry a photocopy of their duly completed online application form.

Note: If selected for admission, candidates will be required to submit all the above documents in original (except the Photo ID) at the time of admission, along with the requisite fees.

Provisionally selected candidates appearing for final examinations in 2018 will be required to submit an undertaking at the time of admission on Non-Judicial Stamp Paper of Rs. 20/- to the effect that if they fail to obtain the requisite marks in their qualifying examination (graduation) their admission will liable to be cancelled. The deadline for submission of the marksheet / degree certificate is 31 October 2018, failing which the provisional admission will be cancelled. (Please see Sec 13 for the format of the above undertaking).

Sec 7. Availability of Seats & Reservations

The number of seats to be offered in 2018 for the MCA programme at various Centres is as given below:

Sl No.	Centre	Seats to be offered
1.	Jaipur	45
2.	Lalpur	120
3.	Mesra	60
4.	Noida	60

Reservations: Currently the Institute follows reservations as given below for its MCA programme.

1. For all programmes at the Institute which are supported by any of the respective State Governments, the reservation criteria for the state quota are as per the norms of the respective State Government.
2. For all other programmes the reservation criteria for SC & ST are as per the statutory norms of Central Govt. (SC -15% & ST - 7.5%)
3. The Institute observes statutory reservation for Persons with Disability (3%).
4. Upto 1 seat at all Centres is reserved for candidates who are Sons or Daughters of Kashmiri Migrant who otherwise have qualified for admissions.
5. Upto 6% of the seats at its Extension Centres are reserved for candidates who are sons and daughters of serving employees of BIT, who otherwise have qualified for admissions.
6. At all Centres 50% of the total seats are reserved for candidates who have passed / are appearing for qualifying examination (graduation) from the state in which Centre is located. (The "State of Eligibility" of a candidate for the purpose will be determined on the basis of location of his/her College where (s)/he has passed/is appearing for the qualifying examination / graduation).

[In case sufficient numbers of suitable candidates from any group are not available, the Institute reserves the right to fill the seats from the other group].

However, the final reservation proportion will depend on notification, if any, issued by competent authority and as accepted by the Institute.

Note: Please select the state of eligibility from drop down box while filling the online application form. (Examples):

	State of Eligibility
Qualifying examination (graduation) from Jharkhand	Jharkhand
Qualifying examination (graduation) from Rajasthan	Rajasthan
Qualifying examination (graduation) from West Bengal	West Bengal
Qualifying examination (graduation) from Uttar Pradesh	Uttar Pradesh
Qualifying examination (graduation) from Delhi	Delhi
Qualifying examination (graduation) from Andhra Pradesh	Andhra Pradesh

Sec 8. Fee Structure

Fees payable [In INR] for the full-time MCA programme at Mesra and its Extension Centres for 2018 Batch

Fee payable at a glance at the time of admission and in each subsequent semester

Particulars	1 st Semester	2 nd Semester	3 rd Semester	4 th Semester	5 th Semester	6 th Semester
Tuition Fee	89000	89000	98000	98000	107500	107500
Development Fee	6000	6000	7000	7000	7500	7500
Institute Exam Fee	5000	5000	5500	5500	6000	6000
Sub-Total	100000	100000	110500	110500	121000	121000
Hostel Seat Rent*, Electricity and Transport etc. <i>(For Main Campus at Mesra only)</i>	13500	13500	14500	14500	15500	15500

**Hostel fees are subject to revision in future*

Additional amount to be paid at the time of admission	
(i) Admission Fee (One time only)	Rs.15,000.00
(ii) Caution Money (One time only-Refundable)	Rs.10,000.00
Sub-Total	Rs. 25,000.00

Notes:

- Hostel facilities are provided only at the Main Campus at Mesra. Hostel mess charges at Mesra will be approximately Rs. 3,000/- to Rs. 3,500/- per month. **Students at Mesra will be required to deposit Hostel Caution Money* (One Time only - Refundable) of Rs.5,000/- .They will also be required to pay suitable mess advance at the beginning of each semester, which will be adjusted against their mess charges. For the session July 2018, this mess advance will be Rs.20,000/- [Total of Rs. 25,000/-]**
For Mesra (Main Campus)- Hostel Caution Money (One Time only - Refundable) and Hostel Mess Advance (each semester) are **payable by crossed Demand Draft in favour of "BIT Welfare Society" payable at Ranchi.**
- All other fees must be paid by **crossed Demand Draft in favour of "Birla Institute of Technology" payable at Ranchi (for admission at Mesra or Lalpur), payable at Jaipur (for admission at Jaipur) and payable at Noida (for admission at Noida).**
- Students will be expected to provide themselves with stationery and textbooks, etc, as prescribed for different subjects.
- The Institute reserves the right to revise the fees and other charges at any stage.
- For rules regarding refund of fees on withdrawal, please see separate Notice on Notice Boards.

Candidates may also pay the admission fee online through State Bank Collect. Candidates are advised to go through the instructions given on the Institute website.

Sec 9. The MCA Programme and Course Structure

The 3-year (6-semester) Master of Computer Applications (MCA) programme of the Institute is approved by the All India Council of Technical Education (AICTE).

The MCA programme was designed by the Department of Electronics, Government of India in the early 1980's as a training programme that would equip graduates to fulfill the increasing demand for software specialists. It was envisaged that the MCA graduates would fill positions of systems analysts, information systems specialists, application programmers and systems engineers. This has worked out to exceed expectations. MCA's are widely accepted today by Indian industry.

The curriculum is designed so as to help students develop strong software competencies and analytical and problem solving abilities – the requisite skills to prepare them for successful careers as software professionals. The course structure and contents are regularly updated.

The programme objectives as interpreted at this Institute are as follows. The programme imparts:

1. Knowledge and practice covering various aspects of computer usage in business, industry and service sectors
2. Skills to candidates to enable them to perform as application systems designers and systems managers, in major areas of computer applications

Thus the MCA programme here includes:

- a) A comprehensive knowledge of systems including their capabilities and limitations
- b) An appreciation of the application environment
- c) Skills for management of complex software projects, and
- d) A sound foundation of quantitative tools and techniques

There are three broad components of the programme:

- Mathematical background for digital computers
- Computers and systems science courses
- Management and behavioural science courses

A unique feature of the MCA programme at this Institute is that the sixth and final semester is devoted to a compulsory 20-week software development project in industry, enabling the students to gain valuable hands-on experience.

The Course Structure for the MCA Programme

Note: Choice Based Credit System (CBCS) will be introduced from the Academic Session 2018-19.

SEMESTER - I		
Course Code	Theory	Credit (L-T-P)
MCA 1001	Problem Solving and Program Design with C	3 (3-0-0)
MCA 1003	Numerical & Statistical Methods	4 (3-1-0)
MCA 1007	Discrete Mathematics	3 (3-0-0)
MCA 1009	Computer Organization & Architecture	3 (3-0-0)
	Breadth Paper-I	3 (3-0-0)
	Sessional	
MCA 1002	C Programming Laboratory	2 (0-0-3)
MCA 1004	Numerical & Statistical Methods Laboratory	2 (0-0-3)
	Total	20

SEMESTER - II		
Course Code	Theory	Credit (L-T-P)
MCA 2001	Data Structures	3 (3-0-0)
MCA 2003	Object Oriented Design & Programming	3 (3-0-0)
MCA 2005	Database Management Systems	3 (3-0-0)
MCA 2007	Operating Systems	3 (3-0-0)
	Sessional	
MCA 2002	Data Structure Laboratory	2 (0-0-3)
MCA 2004	C++ Programming Laboratory	2 (0-0-3)
MCA 2006	RDBMS Laboratory	2 (0-0-3)
MCA 2008	Operating System Laboratory	2 (0-0-3)
	Total	20

SEMESTER - III		
Course Code	Theory	Credit (L-T-P)
MCA 3001	Java Programming	3 (3-0-0)
MCA 3003	Software Engineering	3 (3-0-0)
MCA 3005	Fundamentals of Computer Algorithms	3 (3-0-0)
MCA 3007	Automata Theory	4 (3-1-0)
	Elective - I	3 (3-0-0)
	Sessional	
MCA 3002	Java Programming Laboratory	2 (0-0-3)
MCA 3004	Software Engineering Laboratory	2 (0-0-3)
	Total	20

SEMESTER - IV		
Course Code	Theory	Credit (L-T-P)
MCA 4001	Compiler Design	4 (3-1-0)
MCA 4103	Data Communications and Computer Networks	3 (3-0-0)
MCA 4007	Computerized Financial Accounting	3 (3-0-0)
	Breadth Paper -II	3 (3-0-0)
	Elective - II	3 (3-0-0)
	Sessional	
MCA 4002	Compiler Design Laboratory	2 (0-0-3)
MCA 4004	Computer Networks Laboratory	2 (0-0-3)
	Total	20

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SEMESTER - V		
Course Code	Theory	Credit (L-T-P)
MCA 5001	Computer Graphics	3 (3-0-0)
MCA 5003	System Simulation & Modeling	4 (3-1-0)
MCA 5005	Optimization Theory	3 (3-0-0)
	Breadth Paper - III	3 (3-0-0)
	Elective - III	3 (3-0-0)
	Sessional	
MCA 5002	Computer Graphics Laboratory	2 (0-0-3)
MCA 5004	System Simulation & Modelling Laboratory	2 (0-0-3)
Total		20

SEMESTER - VI		
Course Code	Theory	Credit (L-T-P)
MCA 6001	Project	20
Total		20

Total Credits		120
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List of Electives

Group I: Database Technology	
Course Code	Theory
MCA 7101	Distributed Databases
MCA 7103	Decision Support Systems
MCA 7105	Enterprise Resource Planning
MCA 7107	Data Mining & Ware Housing
MCA 7109	Multimedia Databases

Group II: Software Technology	
Course Code	Theory
MCA 7201	Advanced Java Programming
MCA 7203	Systems Programming
MCA 7205	Programming Language Design and Concepts
MCA 7207	Assembly Language Programming
MCA 7209	Web Programming
MCA 7211	Software Project Management

Group III: Cognitive Sciences and Intelligent Systems	
Course Code	Theory
MCA 7301	Natural Language Processing
MCA 7303	Genetic Algorithms & Swarm Intelligence
MCA 7305	Artificial Intelligence
MCA 7307	Image Processing
MCA 7309	Soft Computing

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Group IV: Networking and Distributed Systems	
Course Code	Theory
MCA 7401	Network Security and Cryptography
MCA 7403	Grid Computing
MCA 7405	Wireless Technology
MCA 7407	Parallel & Distributed Computing
MCA 7409	Mobile Computing
MCA 7411	Cloud Computing

Group V: Applications of Information Technology	
Course Code	Theory
MCA 7501	Bioinformatics
MCA 7505	Multimedia and Animation
MCA 7507	Supply Chain Management

Notes:

- (i) Students are required to choose at least two electives from the same group.
- (ii) Students are advised to do their projects on the areas where major electives are chosen.

Sec 10. Syllabus for the Online Entrance Test for MCA 2018

The MCA 2018 Online Entrance Test shall comprise of 120 questions to be answered in 2 hours. Questions will be of objective type with multiple choices out of which only one is correct. A candidate must select only the correct answer to score full marks. For each correct answer a candidate will earn 4 marks. For every incorrect answer one mark will be deducted. If a question has not been attempted no credit will be given. The questions will be distributed into various areas as follows and the detailed syllabus is given below:

Section	Subject	No of Questions
A	Mathematics	60
B	Analytical ability & Logical Reasoning	20
C	Computer Awareness	20
D	English	20
	Total	120

Section A: Mathematics (60 questions – objective type)

- **Algebra:** Fundamental operations in Algebra, expansion, factorization, quadratic equations, indices, logarithms, arithmetic, geometric and harmonic progressions, binomial theorem, permutations and combinations, surds
- **Set Theory:** Sets and subsets, operations on sets, sequences, properties of integers, relations and functions
- **Matrix Algebra:** Elementary transformations, inverse of a matrix, rank, solution of simultaneous linear equations, eigenvalues and eigenvectors, quadratic forms
- **Co-ordinate Geometry:** Rectangular Cartesian co-ordinates, equations of a line, mid point, intersections etc., equations of a circle, distance formulae, pair of straight lines, parabola, ellipse and hyperbola, simple geometric transformations such as translation, rotation, scaling.
- **Calculus:** Limit of functions, continuous functions, differentiation of function(s), tangents and normals, simple examples of maxima and minima, integration of function by parts, by substitution and by partial fraction, definite integral application to volumes and surfaces of frustums of a sphere, cone, cylinder, Taylor Series.
- **Differential Equations:** Differential equations of first order and their solutions, linear differential equations with constant coefficients, homogenous linear differential equations.
- **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, height and distance, inverse function
- **Probability and Statistics:** Basic concepts of probability theory, averages, dependent and independent events, frequency distributions, and measures of dispersions, skewness and kurtosis, random variable and distribution functions, mathematical expectations, binomial, Poisson, normal distributions, curve fitting, and principle of least squares, correlation and regression
- **Linear Programming:** Formulation of simple linear programming problems, basic concepts of graphical and simplex methods, revised simplex method, transportation and assignment problems, duality and integer programming

Section B: Analytical Ability and Logical Reasoning: (20 questions – objective type)

Questions in this section will test logical reasoning, quantitative reasoning, and visio-spatial reasoning

Section C: Computer Awareness: (20 questions – objective type)

- **Computer Basics:** Organization of a computer, Central Processing Unit (CPU), Structure of instructions in CPU, input / output devices, computer memory, memory organization, back-up devices
- **Data Representation:** Representation of characters, integers, and fractions, binary and hexadecimal representations, Binary Arithmetic: Addition, subtraction, division, multiplication, 1's and 2's complement arithmetic, floating point representation of numbers, normalized floating point representation, Boolean algebra, truth tables, Venn diagrams
- **Computer Architecture:** Block structure of computers, communication between processor and I / O devices, interrupts
- **Computer Language:** Assembly language and high-level language, Multiprogramming and time-sharing operating systems, Computer Programming in C.
- **Flow chart and Algorithms**
- **Operating Systems:** Evolution of operating systems, types of operating systems, functions of an operating system, modern operating systems

Section D: English: (20 questions – objective type)

- **Use of articles and prepositions** (fill in the blanks or correct use)
- **Idioms and phrases**
- **Synonyms**
- **Reading comprehension**
- **Expansion of an idea**
- **Sentence sequence** (jumbled sentences)
- **Completion of a sentence** (with choices)
- **Choice of appropriate word to fill in the blanks** (with options)
- **Abridging sentences / paragraphs.**

Sec 11. Training and Placement

The Campus Recruitment Programme of BIT Mesra has, for more than three decades, successfully met the needs of IT Professionals of different IT Industry. The Training & Placement (T&P) Division maintains a steady rapport with the partnering organisations and sometime several organisations prefer to contact through on-line registration modules on the official website of the institute. In addition to T&P activities, the division is also engaged in organising placement seminars and workshops, conducting training programs and guest lectures by industry captains and alumni of our institute. The T&P division is equipped with well-trained experienced executives and staff as well as devoted student coordinators who take active part to conduct the placement process efficiently. More over our well established and accomplished alumni play very important role for making the process robust. Every year good number of companies visits the Institute for placement and internship for our MCA students with offer rang from INR 3.2 Lacs to INR 7 Lacs.

A few of leading recruiters visited in last couple of years for MCA are Amdocs, Cognizant, Infosys, IBM, Wipro, Mahindra Comviva, National Stock Exchange, Amadeus, Sapient, AxisBank, EXL Service, Oracle, Nomura, Headstrong, Your own Rooms etc.

Sec 12. Discipline, Rules & Regulations, Hostel and Medical Examination

Institute Rules & Regulations: For details of Institute rules and regulations, please see booklet provided at the time of admission.

Discipline

The Institute places a very high emphasis on discipline of students both inside and outside the campus. Students must abide by the Institute and Hostel rules and agree to conform to the rules and regulations enforced from time to time. They must not do anything either inside or outside the Institute that will interfere with its orderly governance, discipline and image. Students must attend lectures, tutorials and practical classes regularly. A minimum attendance of 75% in lectures, tutorials and sessionals for each subject is essential for appearing in the Semester Examinations. Thus, students should attend all theory and laboratory classes from the first day of the academic year. In case of absence due to unavoidable circumstances, students are advised to take prior permission from the Dean / Head. In case of absence due to illness, students will have to produce a Medical Certificate with an application from their parents or guardians. In such a case, parents/guardians or Hostel Warden should inform the authorities immediately. Students should strike a proper balance between extracurricular activities and academic requirements. A student's participation in extracurricular activities should not be allowed to interfere in his/her academic schedule.

During teaching hours, the main lobby, the library, the corridors of the Institute and the area surrounding the Institute are to be observed as silence zones. Students must not cause any disturbance in these zones. Students must not indulge in any kind of misconduct or indiscipline or anti-social activities within or outside the campus. Students must not form a group causing any hindrance to the academic and administrative activities of the College. Those found doing so will be punished and strict disciplinary action will be taken by the authorities. Students shall not damage the property of the Institute. Cost of such damage will be recovered from students, parents/guardians of the students.

Students must always carry their Identity Card and produce it on request. In case of loss or damage of Identity Card, the concerned authorities should be informed immediately.

Students are not permitted to enter and use the laboratory / workshop / sports ground if they do not wear appropriate dress. For example, they should enter the laboratory only with apron, cap or mask as instructed. Students should park their cycles in an orderly manner at the cycle stands. Students should follow the rules of the Hostel Mess / Canteen. Students are advised to read the Notice Boards regularly.

Students are strictly prohibited from possessing or consuming spirits, tobacco products and narcotic drugs either within or outside the campus, and if found violating this will be rusticated immediately, without warning.

Ragging in any form inside or outside the campus is strictly prohibited by law. Any students found ragging other students will be summarily expelled from the Institute and dealt with as per the directive of Hon. Supreme Court/Hon. High Court.

Each student must read the “UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009” on the UGC website. Each student admitted to any of the Institute’s programmes must submit the two completed affidavits [one from candidate and one from parents] at the time of admission. [for details please see Sec-14 of this Information Brochure].

Hostel

Hostel facilities are provided only at Mesra. All students admitted at Mesra are required to reside in one of the Institute hostels, to which they are allotted and must take food along with other inmates of the hostel in the common mess. There are separate hostels for girls students.

Medical

All selected students will be required to undergo medical examination by a Medical Officer of the Institute and their admission is subject to being found medically fit for the Programme. Therefore, candidates, for their own satisfaction, are advised to get themselves examined by a registered medical practitioner.

The Institute at Mesra is located in a spacious green campus. There are small forests with a large number of trees – mostly sal trees which are native to Chotanagpur. These sal trees and a number of other trees and plants have their flowering season during mid-February to early April, and this sometimes leads to a large pollen content in the air. It has been noted that some people who are allergic or susceptible to pollen from these sal trees / other plants may develop some health problems / breathing problems or their existing problems may be aggravated during these weeks, as also during some other months of the year when other plants flower. Thus, such candidates who are known to be sensitive or susceptible to pollen from trees or other plants are required to get allergy tests done / take advice from their physicians / a specialist before taking admission at Birla Institute of Technology, Mesra, Ranchi.

Applicability of Regulations for the time being in force, Disclaimer and Legal Jurisdiction:

In Force

Notwithstanding the nature of a programme spread over more than one academic year, the regulations in force at the time a student joins a programme shall hold good only for the examinations held during or at the end of the semester. Nothing in these regulations shall be deemed to debar the Institute from amending the regulations subsequently and the amended regulations, if any, shall apply to all students old or new, as specified therein.

Disclaimer

The statements made in this Information Brochure and all other information, contained herein are believed to be correct at the time of publication. However, the Institute reserves the right to make at any or without notice, changes in and additions to the regulations, conditions governing the conduct of students, requirements for degree, fees and any other information, or statements contained in this Information Brochure. No responsibility will be accepted by the Institute 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.

Legal Jurisdiction

All disputes will be subject to jurisdiction of the Civil Courts at Ranchi city only.

Sec 13. Undertaking for candidates appearing for final examinations in 2018

Format of the Undertaking to be typed and submitted on Non- Judicial Stamp Paper of Rs. 20/-, signed by Public Notary, at the time of admission by those candidates who are provisionally selected for the MCA Programme of the Institute, and are appearing for their final examinations in 2018.

Please fill in all blanks, select relevant items and delete whatever is not applicable.

1. I, _____ S/o _____
resident of _____ P.S. _____

Dist. _____ hereby declare that I am fully aware that minimum marks for admission to MCA Programme of the Birla Institute of Technology is 55% (50% for SC/ST/PwD) in Honours / aggregate of all subjects in all years in graduate level and therefore, I shall be disqualified for admission to MCA Programme of Birla Institute of Technology, if I do not secure minimum 55% marks (50% for SC/ST/PwD) in Honours / aggregate of all subjects in all years in graduate level or equivalent eligibility qualification.

2. I belong to General / SC / ST / OBC category (strike out whichever is not applicable)

3. I do hereby undertake that since I have been provisionally allowed to appear in the selection procedure to MCA Programme although my graduation / equivalent eligibility qualifying examination has not yet been published, I shall not insist on extension / conversion of the provisional admission, if

i). I fail to secure minimum 55% marks (50% for SC/ST/PwD) in Honours / aggregate in all subjects in all the years in such graduation or equivalent eligibility qualifying examination, or

ii). I fail to produce the official result by the 31st October 2018.

4. I undertake that all the certificates / documents submitted by me are authentic and are issued by competent authority.

5. I undertake that if at any time during the programme I am found not to be eligible for admission for not having required marks in Graduation, my admission shall be cancelled.

Counter Signed

(Guardian)
Name & Address in Block Capitals

Name _____

Address _____

(Applicant)
Name & Address in Block Capitals

Name _____

Address _____

Sec 14. Anti-ragging Affidavit

How can fill Online affidavits and Why?

1. It is mandatory for every student and his/her parents to submit an anti-ragging affidavit at the time of admission. These are UGC's regulations.
2. It is the order of the Hon. Supreme Court that contact details of students must be collected from these affidavits and stored electronically at a central location.

It is a simple procedure comprising 3 steps

Step 1: Log on to

www.ANTIRAGGING.in

or

www.AMANMOVEMENT.org

Click on the button called 'On line affidavits'

Step 2: Fill in the information as desired and submit the form.

Step 3: On successful completion, you will receive affidavits, both for Students and Parents, through E-mail.

Note:

- **If you do not have an E-mail address, please create one before you fill an affidavit forms.**
- If your mother or father or guardian does not have a phone or a mobile phone or email then please give the numbers / email of their friends or relations or neighbors.
- If you do not have a mobile number, then please give the mobile number of your friend in the Institute.

After filling this form successfully, you will receive the Student's Anti Ragging Affidavit and the Parents Anti Ragging Affidavit in your Email. Please print both the Affidavits, sign them yourself, request your parents to read the details and request them to sign their affidavit and then submit both during admission.