

# INFORMATION BROCHURE 2019

for

Admission to

5-year (10-Semester) full-time  
Integrated M.Sc. in Chemistry, Food Technology,  
Mathematics & Computing, and Physics

at

Birla Institute of Technology, Mesra



**BIRLA INSTITUTE OF TECHNOLOGY**

(Deemed to be University under section 3 of UGC Act 1956)

**Mesra, Ranchi - 835215**

Jharkhand, India

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

## Contact Details

Campus	Addresses and contact details
Mesra (Main Campus)	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: <a href="mailto:admissions@bitmesra.ac.in">admissions@bitmesra.ac.in</a>

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## IMPORTANT DATES

Filling of online form commences from	9 May 2019
Last date to Apply online	20 June 2019
Declaration of FIRST shortlisted candidates for Documents Verification cum Admission	25 June 2019
Classes will commence from 1 <sup>st</sup> / 2 <sup>nd</sup> week of July 2019 [Exact date will be announced at later stage]	

### Note:

- All the dates mentioned above are tentative, and liable to be changed. Hence, please check Institute website periodically.
- Please fill and submit the application online only, take printout of the same and retain with you as the same will be required to produce at the time of reporting for Documents verification cum admission.

## Sec 1. An Introduction and How to Apply

This Information Brochure covers admissions to full-time 5-year (10-semester) Integrated M.Sc. in Chemistry, Food Technology, Mathematics & Computing, and Physics programmes 2019 at Mesra (Main Campus), which will commence in July 2019.

### **How to Apply:**

1. To fill online application form, click on the link “**APPLY ONLINE**” to register and create password for the application process. Do not share the password with anybody. [Please see instructions for filling online application form.](#)
2. Eligible candidates must complete and submit the application form online only [link available on the Institute website [www.bitmesra.ac.in](http://www.bitmesra.ac.in)]. Pay application fee of Rs.1,500/- (General / OBC candidates) and Rs.1,000/- (SC/ST candidates) inclusive of GST charges through **State Bank Collect** (net banking / credit card of any nationalized bank) in favour of “**Birla Institute of Technology**” till the last date of application process. **Fee once remitted shall not be refunded under any circumstances.**
3. Use separate application form, in case applying for more than one programme and pay additional application fee.

### **Important Instructions:**

1. Candidates should proceed to fill the Online Application Form only after they satisfy themselves that they fulfill all the eligibility criteria.
2. Candidate must have adequate proficiency in written & spoken English to cope with the programme as all instruction and examinations will be in English only.
3. **Please fill and submit the application online only, take printout of the same and retain with you as the same will be required to produce during documents verification cum admission.**

### **Form / Application Numbers:**

The Form / Application numbers on each online application form may be noted and cited in correspondence if required. **No individual intimation will be sent to candidates.**

### **Documents verification cum Admission:**

**The list of shortlisted candidates to be called for documents verification cum admission will be notified on the Institute website on 25<sup>th</sup> June 2019. No individual intimation will be sent to candidates.**

## Sec 2. Eligibility Criteria

Programmes	Eligibility criteria
Integrated M.Sc. in Chemistry	Pass in Class 12 / equivalent examination with English, Physics, Chemistry, Mathematics and having at least 60% (50% for SC/ST/PwD) marks in average of 4 subjects - English, Physics, Chemistry, Mathematics
Integrated M.Sc. in Food Technology	Pass in Class 12 / equivalent examination with English, Physics, Chemistry, Mathematics and having at least 60% (50% for SC/ST/PwD) marks in average of 4 subjects - English, Physics, Chemistry, Mathematics
Integrated M.Sc. in Mathematics & Computing	Pass in Class 12 / equivalent examination with English, Physics, Chemistry, Mathematics and having at least 60% (50% for SC/ST/PwD) marks in average of 4 subjects - English, Physics, Chemistry, Mathematics
Integrated M.Sc. in Physics	Pass in Class 12 / equivalent examination with English, Physics, Chemistry, Mathematics and having at least 60% (50% for SC/ST/PwD) marks in average of 4 subjects - English, Physics, Chemistry, Mathematics

### Notes:

- Only those candidates whose date of birth falls on or after 1 October 1994 in case of General category and 1 October 1989 in case of SC/ST/PwD are eligible for admission. Date of Birth as recorded in the Secondary Education Board Class X (High School) certificate only will be considered as authentic.
- 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>).
- In case any Board awards grades instead of marks, the calculation of equivalent marks would be based on the procedure prescribed by the Board.
- At the time of document verification, candidates will be required to produce originals of Pass Certificate of Class X, Marksheets of Class X and Class XII showing requisite minimum marks, as well as Caste or Special Category certificates in proper format signed by appropriate authority (please see instructions).
- At any level of the studies [Class X or Class XII], a candidate / applicant must have passed all the required subjects at that level from the same Board.

### Sec 3: List of documents to carry at the time of reporting for documents verification cum admission

1. A print-out of the duly completed online form (original copy)
2. One recent colour photograph [same as uploaded on the form]
3. **Payment receipt towards application fee of Rs.1,500/- (General) and Rs.1,000/- (SC/ST) candidates (non-refundable)**
4. **Original of the following documents / certificates:** Candidates must carry the originals of the following documents at the time of reporting for Admission cum Document Verification as well as one set of photocopies:
  - a) Pass certificate of Class X (for age proof)
  - b) Marksheet of Class X
  - c) Marksheet of Class XII / Intermediate or equivalent
  - d) Caste certificate (if applicable), which **should be in proper format and signed by appropriate authority of rank not less than SDO.**
  - e) Candidates belonging to other special categories (Persons with Disability [PwD] / Kashmiri Migrant) must provide photocopy of certificate in proper format from appropriate authority.
  - f) Photo identification: (Driving license, Passport, PAN Card, Voter ID, Aadhaar Card, School / College ID, are acceptable)

**Without original of above documents / certificates, no candidates will be permitted to appear for the admission cum documents verification.**

**If provisionally admitted, all the above documents in original (except the original Photo ID) together with photocopies will be retained by the Institute for some time.**

## Sec 4: Selection Procedure

- The provisional selection will be made on merit based on marks obtained by the candidates in Class 12 / Intermediate / equivalent qualifying examination. However, candidates must meet the age criteria and other minimum academic requirements (see Eligibility Criteria).
- The shortlisted candidates will be called for documents verification cum admission based on their merit and data submitted by the candidates on their application forms for 1<sup>st</sup> round. The same will be intimated on the Institute website only as web notifications. No separate intimation will be sent to candidates.
- The waitlisted candidates or candidates not called in 1<sup>st</sup> round may be called for documents verification cum admission process against the vacant seats, (if any), in successive rounds, as required. The same will also be intimated on the Institute website only as web notifications. No separate intimation will be sent to candidates.

**Note: Admission will be offered subject to verification of original documents at the time of admission.**

### Exit option from the programme:

The students will be allowed to exit from the programme after successful completion of 6<sup>th</sup> semester. In order to avail the exit option, the student has to submit in writing his/her willingness to avail this before 6<sup>th</sup> semester end semester examination. Such students would be given B.Sc. Degree with Major in Chemistry / Mathematics & Computing / Physics / Food Technology.

### Cancellation of Admission Offer:

- The admission of a candidate will be automatically cancelled
  - (a) if any information provided in the application form is found incorrect or missing.
  - (b) those who fail to submit the marksheet of Class XII or equivalent qualifying examination in time as stipulated.

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

## Sec 5. Total number of Seats, Reservations and Distribution of seats

The number of seats to be offered in 2019 for the following programmes, as given below:

Programmes	No. of seats to be offered
Integrated M.Sc. in Chemistry	40
Integrated M.Sc. in Food Technology	30
Integrated M.Sc. in Mathematics & Computing	80
Integrated M.Sc. in Physics	60

### Reservations:

1. For all programmes at the Institute which are supported by the State Governments, the reservation criteria for the state quota are as per the norms of the 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 (5%).
4. Upto 1 seat may be allotted to candidates who are Sons or Daughters of Kashmiri Migrant who otherwise have qualified for admissions.
5. For the above programmes, 50% of the total seats are reserved for candidates who have passed their qualifying examination (Class 12) from Jharkhand State. (The “State of Eligibility” of a candidate for the purpose will be determined on the basis of location of his/her School / College where she/he has passed the qualifying examination (Class 12).

[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.

### Notes:

1. The Institute reserves the right to lower the intake in a programme without showing any reason.
2. The Institute also reserves the right not to offer a particular programme in case the number of students found to be eligible / admitted is less than 30% in number.
3. Please see our website <http://www.bitmesra.ac.in> for course syllabus / any other matters related to admission procedures.

Examples for selecting the name of State while filling the application form:

	State of Eligibility
Qualifying examination (Class XII) from Jharkhand	Jharkhand
Qualifying examination (Class XII) from Rajasthan	Rajasthan
Qualifying examination (Class XII) from West Bengal	West Bengal
Qualifying examination (Class XII) from Uttar Pradesh	Uttar Pradesh
Qualifying examination (Class XII) from Delhi	Delhi

## Sec 6. Fee Structure

### Fees payable [in INR] for the full-time Integrated M.Sc. programmes for the 2019 Batch

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

Particulars	1 <sup>st</sup> Sem	2 <sup>nd</sup> Sem	3 <sup>rd</sup> Sem	4 <sup>th</sup> Sem	5 <sup>th</sup> Sem	6 <sup>th</sup> Sem	7 <sup>th</sup> Sem	8 <sup>th</sup> Sem	9 <sup>th</sup> Sem	10 <sup>th</sup> Sem
Tuition Fee	42500	42500	47000	47000	53000	53000	58500	58500	65500	65500
Development Fee	3000	3000	3500	3500	3500	3500	4000	4000	4500	4500
Institute Exam Fee	5500	5500	6000	6000	6500	6500	7000	7000	7500	7500
<b>Total</b>	<b>51000</b>	<b>51000</b>	<b>56500</b>	<b>56500</b>	<b>63000</b>	<b>63000</b>	<b>69500</b>	<b>69500</b>	<b>77500</b>	<b>77500</b>
Hostel Seat Rent*, Electricity and Transport etc.	13500	13500	14500	14500	15500	15500	16500	16500	17500	17500
<b>Grand Total</b>	<b>64500</b>	<b>64500</b>	<b>71000</b>	<b>71000</b>	<b>78500</b>	<b>78500</b>	<b>86000</b>	<b>86000</b>	<b>95000</b>	<b>95000</b>

\* Hostel fees are subject to revision in future

<b>Additional amount to be paid at the time of admission:</b> (i) Admission Fee (One time only) =Rs. 15,000.00 and (ii) Caution Money (One time only-Refundable)=Rs. 10,000.00	<b>Total Rs.25,000.00</b>
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### Notes:

- Hostel mess charges will range from approximately Rs.2,500/- to Rs.3,000/- per month. Students 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 2019, this mess advance\* will be Rs.20,000/- [ total of Rs. 25,000/-]  
\*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 payments must be made online through State Bank Collect. For details, please go through the instructions given on the Institute website. **[Candidate may use the net banking or credit card payment through any nationalized bank].**
- 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.



## Sec 7 Profiles of the Departments

### Department of Chemistry

The Department of Chemistry was established in 1956 and is dedicated to providing a high quality chemistry education at both undergraduate & postgraduate level. The department supports the institute's undergraduate, postgraduate and Ph.D. programmes in pure and applied chemistry.

The department has a strong pool of well qualified, motivated and student friendly faculty members. The department is well supported financially through "Fund for Improvement in Science & Technology Infrastructure" (FIST) and research project through DST, DBT, AICTE, UGC, CSIR etc.

Programmes Offered	Course Duration	Sanctioned Intake
M.Sc. in Chemistry	2 Year (4-Semesters)	15
Integrated M.Sc. in Chemistry	5 years (10- Semesters)	40
Ph.D. programme		

### Vision of the Department:

- To become a recognized centre of excellence for teaching and research in Chemical Sciences through producing excellent academicians, professionals, entrepreneur and innovators

### Mission of the Department:

- Inoculate fundamental concepts of Chemical Sciences to students & scholars through our state of art laboratory, teaching, research facilities and building a scientific environment towards innovation with quality research.

### Salient Features of Integrated M.Sc. programme in Chemistry:

- Strong industry-academia interactions to facilitate curriculum development and to enhance and broaden job prospects.
- Ample opportunities for the interested students to carry out research project work in the various basic and interdisciplinary areas of organic/inorganic/physical/medicinal/computational/material/polymer/nanochemistry etc.
- Exit option with a B.Sc. degree is available after completion of three years, which enables students to take admission in M.Sc. and Integrated Ph.D. programs of various prestigious academic and research organizations.

### Alumni :

- Availing exit options, some of our students have been admitted to Integrated Ph.D. programs of IITs, IISERs etc.
- Some students are pursuing doctoral studies in US & European universities on full scholarship having excelled in their academics, GRE and TOEFL exams.

## Department of Chemical Engineering

The Department of Chemical Engineering with well qualified faculty provides high standard of education in the diversified fields of Chemical Engineering and Chemical Technology. The Department received national recognition by winning the Gold Trophy for Plasticon Award 2012 in the category of Best Educational Institution Contributing to Plastics. The Plasticon Award was conferred on 1st February 2012, at 8th International Plastics Exhibition and conference. The programme was supported by Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals, Government of India. Faculty members are working on sponsored projects and collaborative research with various organizations. The Department is also recognized under DST-FIST. Department is recipient of a major grant from Ministry of Food Processing Technology, Govt. of India, for infrastructure development for programmes in Food Technology.

Programmes Offered	Course Duration	Sanctioned Intake
B.Tech. in Chemical Engineering	4 Years (8 Semesters)	60
M.Tech. in Chemical Engineering	2 Years (4 Semesters)	18
Integrated M.Sc. (Food Technology)	5 Years (10 Semesters)	30
Ph.D. Programme		

### Vision of the Department:

To be a centre of excellence for the provision of effective teaching/learning, skill development and research in the areas of Chemical Engineering and allied areas through the application of Chemical Engineering principles.

### Mission of the Department:

- To educate and prepare graduate engineers with critical thinking skills in the areas of chemical engineering & polymer science and engineering, who will be the leaders in industry, academia and administrative services both at national and international levels.
- To inculcate a fundamental knowledge base in undergraduate students which enable them to carry out post-graduate study, do innovative interdisciplinary doctoral research and to be engaged in long-life learning.
- To train students in addressing the challenges in chemical, petrochemical, polymer and allied industries by developing sustainable and eco-friendly technologies.

The undergraduate programme B.Tech. (Chemical Engineering) imparts high standard training, emphasizing on Chemical Engineering fundamentals - Heat Transfer, Mass Transfer, Fluid Flow, Process Control, Reaction Engineering, Computer Aided Engineering etc to groom them to carry out economic and environment friendly design, technology development and operation of a wide range of chemical plants - Industrial chemicals, petroleum, polymers, pharmaceuticals, cement, fertilizer, fuel, processed food etc. The core curriculum is complemented by electives in the important emerging areas like Nanotechnology, Biotechnology, Food Technology, Polymer Engineering, Energy Engineering etc.

The M.Tech.(Chemical Engineering) programme deals with topics on advanced Transport Phenomena, Reaction Engineering, Thermodynamics along with elective courses on Polymer Processing, Specialty Polymers, Nano-science and Nanotechnology, Plant Design, Surface Engineering

Food Processing Industry in India is growing at a very fast pace. Envisaging a great demand for qualified food technologists in our country, from 2014 academic year with support from Ministry of Food Processing Industries 5 year Integrated M.Sc. (Food Technology), with exit option as well as lateral entry after three years, has been introduced. The courses include training in the area of Food Composition and Chemistry, Food Biochemistry and Human Nutrition, Food Microbiology, Food Plant sanitation, Food Analysis and Quality Control, Food Preservation and Processing Technology, Chemical Engineering unit operations in Food Processing Industries, Food Packaging, Post-Harvest Technology etc.

The Department also offers facilities for Ph. D. programme in fields of

- a. Chemical Engineering,
- b. Polymer Science and Technology and
- c. Food processing and Technology

Apart from standard Chemical Engineering laboratories like Fluid Flow, Heat Transfer, Mass Transfer, Reaction Engineering, Process Control etc. the Department of Chemical Engineering has state of the art facilities for Post Graduate and Doctoral Research in Reaction Engineering, Instrumental Analysis of chemicals and Polymer, Polymer Processing, Product Development Laboratory etc. The major facilities include computer controlled reactors, Haake Minilab Micro Compounder and Haake Minilab micro injection Moulding, Air Bearing Rotational Rheometer, Malvern, HAAKE Torque Rheometer with Mixer and Extruder, Oscillating Disc Rheometer, Instron Tensile Testing machine, ATLAS accelerated weathering system, Dynamic Mechanical Thermal analyzer (TA), Gas Chromatograph. The Polymer Processing and Product development facilities include Injection Moulding machines - 80 ton L&T Ergotech and 25 ton Windsor, Extrusion Blow moulding machine with parison programming, Kolsite Single screw extruder, Kolsite Film blowing plant and PVC pipe Extrusion plant, Two roll mixing mills, Thermoforming, Compression moulding, Welding facilities - Ultrasonic and Hot air, Fused Deposition Modeling system, Stratasys, for rapid prototyping, MCP-HEK vacuum casting machine for prototyping, 3 axis CNC EDM machine etc.

The students are trained in various CAE applications ASPEN Plus, Accelerys -Material Studio for molecular simulation, MATLAB, PROENGINEER, ANSYS, CATIA, FLUENT, POLYFLOW, MOLDFLOW etc. E-learning facility has been created with Paulsons Training Basic Injection Moulding, Simtech, Single Screw Extrusion, and Compounding with Twin Screw Extruder.

Laboratories in the area of Food Technology include Food Processing Laboratory, Food Microbiology Laboratory, and Food Analysis Laboratory. The Food Processing Laboratory includes Pulper machine, vegetable dicing machine, Juice Extraction, Homogenizer, Twin Screw Extrusion cooker, Homogenizer, Colloidal Mill, Grinders, Can Body Reformer, Canning Retort, Steam generator, Steam jacketed cooker, Tray dryer, fluidized bed dryer, Vacuum bottle Filling machine, Form Fill and Seal packaging etc. Food Microbiology lab with Autoclave, Laminar flow clean air workstation, BOD incubator has the expertise of microbiological tests of water and food. The Food Analysis and quality Control facilities included Flame photometer, HPLC, Digital colorimeter, NIR Spectral Analyzer, UV-VIS Spectrophotometer etc. The other required equipment are available in Central Instrumentation Facility are also available. The facilities are being augmented with capability for determination of protein by Kjeldahl method, dietary and crude fibre determination, Fat determination, Food Texture Analysis, Atomic Absorption Spectrophotometry, Spray drying, etc.

#### **RESEARCH AREA:**

Nanoparticle synthesis, Catalysts, Advanced Polymer Composites, Alternative Energy, Pollution Control, Water Treatment Technologies, Polymer Blends and Interpenetrating Polymer Networks, Nano filtration Membrane, Recycling of Polymer Waste, Specialty Polymer, Colloids and Interfacial Science, Tissue Engineering, Sensors, Fuel Cell Membrane etc.

## Department of Mathematics

The Department of Mathematics was founded in 1956, under the name Department of Applied Mathematics. It started with only undergraduate program offering to engineering students. Mathematics play an important role in engineering and it is clearly reflected from the fact that it conducts all the mathematics courses offered in different branches of engineering, management, pharmaceutical sciences, architecture and the University polytechnic.

Programmes Offered	Course Duration	Sanctioned Intake
M.Sc. in Mathematics -	2 Years (4 Semesters)	15
Integrated M.Sc. in Mathematics & Computing	5 Years (10 Semesters)	80
Ph.D. Programme	-	-

### Vision of the Department:

- To become a globally recognized centre of excellence in teaching and research, producing excellent academicians, professionals and innovators who can positively contribute towards the society.

### Mission of the Department:

- Imparting strong fundamental concepts to students in the field of Mathematical Sciences and motivate them towards innovative and emerging areas of research.
- Creation of compatible environment and provide sufficient research facilities for undertaking quality research to achieve global recognition.

Currently, department of mathematics consists of 10 regular faculty members with expertise in both pure and applied mathematics. In addition to the regular faculty members, the department has 11 other faculty members who have joined through TEQIP. They are all well qualified, highly motivated towards teaching and always attempt to cooperate students inside and outside the classroom. Faculties are also involved in research activities and have published their articles in highly impact journals. They are also skilled in writing books on Optimization, Mathematical Modeling, Differential Equations, Operations Research, Vedic Mathematics, Discrete Mathematics, Music and Mathematics and Algorithmic Complexity.

The department runs Ph.D programme, 2-year M.Sc. programme in Mathematics and 5-year Integrated M.Sc. programme (Mathematics and Computing). It has also been actively engaged in organizing conferences, workshops, summer and winter schools, invited lecture series. It also has initiated organizing seminars (two seminars in each month) aiming at distribution of knowledge about research areas among graduate and Ph.D students.

The department is equipped with a modern computer laboratory with latest scientific software such as Matlab, Mathematica, Mathcad, Minitab, SPSS, LINGO etc.

Many of the graduate students have gone for higher studies in reputed academic institution within India and abroad. Our students are getting selected for internship and in-campus / off-campus placement at IIT Bombay, infosys, Wipro, Capital Float, Intutent Incl., Pricewaterhouse coopers, Mu Sigma, Deloitte, TCS, Azim Premji foundation, SAP Labs, Blackberry, Tredence, Hangout Store.

## Department of Physics

The Department of Physics since its inception in 1955 has played a pivotal role in the institute. A gamut of very motivated, well qualified and talented faculty is actively engaged in teaching as well as research in areas of theoretical and experimental physics and technology. They have, to their credit, numerous research publications and several R&D projects. Some faculty members have been awarded international fellowships from universities abroad and some have received BOYSCAST fellowship awarded by DST, Government of India. The department has also completed Indo Russian, Indo-German and Indo-Israel projects.

Programmes Offered	Course Duration	Sanctioned Intake
Integrated M.Sc. in Physics	5 Years (10 Semesters)	60
M.Sc. in Physics	2 Years (4 Semesters)	15
Ph.D. Programme	-	-

### *Vision of the Department:*

The vision of the department is to achieve excellence in undergraduate, postgraduate education and research for scholarly inquiry and development of new knowledge.

### *Mission of the Department:*

- To train the students to be lifelong learners who will contribute to the creation of new knowledge, new technology, and innovation through excellence in research in emerging areas. To educate students to be the future leaders in science, technology, industry, education and other professions and succeed in a globally competitive environment
- To create national and international collaborations for research engagement in strategic areas of research
- To provide beneficial service to local, state, national and international communities

### *The prime objectives of the offered programmes are as follows:*

- Impart high quality education in a vibrant academic ambience.
- Prepare students to take up challenges as researchers in academic and R & D organizations.
- To train students for participation in multidimensional academic activities.
- To impart scientific knowledge and enhance human values.

The department has well equipped laboratories having several research facilities viz., RF magnetron sputtering, Plasma Enhanced Chemical Vapour Deposition (PECVD), thermal CVD, RF/DC magnetron co-sputtering, plasma nitriding, anodic vacuum arc deposition, plasma arc generator, Raman spectrometer, nanoindenter, solar simulator, D33 meter, PE loop-tracer, UV Visible Spectrometer, 10 K cryostat etc.

At present the department has 17 faculty members and 14 research scholars. The department has been pursuing several sponsored projects funded by the UGC, DST, AICTE, BRNS, ISRO, ARDB, DRDO, NRB and CSIR as well as different bilateral projects of international category. The department has twice received "Fund for Improvement in Science & Technology Infrastructure (FIST)" from DST, New Delhi, as well as Special Assistance Programme (SAP) from UGC.

The current broad areas of research in the department include quantum optics, nonlinear optics, condensed matter physics, nanotechnology, plasma physics, etc. Specific sub-areas are plasma processing of materials, surface engineering with plasma coating, surface modification, anodic vacuum arc deposition of thin films, carbon nanotubes, nitriding coating unit, diamond-like carbon (DLC) films, nano and ultrananocrystalline diamond films, carbon nanotubes, solar cells, nanocrystalline superhard coatings, high temperature superconductivity, colossal magnetoresistive materials, dilute magnetic semiconductors, piezoelectric materials, electronic composite materials, magnetic composites, soliton and light propagation, optical communication, photonic crystal fibres, optoelectronics, etc.

### *The department has organized various seminars and symposia, recent ones include:*

- SERC School on Science and Technology of Plasmas, from 15th-27th December, 2008
- DST-INSPIRE Camp on Basic Sciences from 27th-31st January, 2010
- Recent Developments in Engineering Materials, from 12th - 14th May 2011
- CMDAYS - 2012, from 29th - 31st August 2012
- One Day Workshop on Solar Cell, on 15th May 2014
- National Conference on Nanoscience, Nanotechnology and Advanced Materials (NCNNAM- 2016), September, 26-27, 2016

## Sec 8. Discipline, Rules & Regulations (including UGC Regulations on Ragging) 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 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 report signed by attending Physician / Surgeon with an application from their parents or guardians. In such a case, parents/guardians should inform the authorities immediately. Students should strike a proper balance between extracurricular activities and academic requirements. A student's participation in extra-curricular 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 / obstacle 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 Institute. 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 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-9 of this Information Brochure].

### Hostel

Hostel facilities are provided at BIT Mesra. All students admitted 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.

## 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 9. 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](http://www.ANTIRAGGING.in)

or

[www.AMANMOVEMENT.org](http://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.