

BML Munjal University
Ph. D ADMISSION BROCHURE (Summer session July ~ Dec 2020)
(Full-Time & Part-time PhD programs at various Schools of the University)

1. About BMU

Named after the Chairman and Founder of the Hero Group, Brijmohan Lall Munjal, BML Munjal University (BMU) is a statutory University established under the Haryana State University Act 2006 and recognized under section 2(f) of the UGC Act, engaged in creating, preserving and imparting internationally benchmarked knowledge and skills to a diverse community of students from across the world. Since its inception in 2014, the Imperial College London is our academic mentor. BMU's aim is to nurture ethical leaders who are skilled, knowledgeable and have the life skills needed to lead organizations to success. BMU seeks to transform higher education in India by creating a world class and innovative teaching, learning and research environment. Founded by the promoters of the Hero Group and mentored by Imperial College London, BMU is a not-for-profit initiative offering undergraduate, post-graduate and doctoral programs in the areas of Engineering, Business Management and Legal Studies through its constituent Schools.

Some of the milestones that BMU has achieved are

- i) its "Dedication to the Nation" by the President of India
- ii) recognition by Department of Science & Technology as a research active institute
- iii) recognition by Niti Aayog as a valuable partner of 'samavesh' and a potential campus to establish Atal Community Innovation Centre

With strong industry-sponsored research laboratories; Propel: the state-of-the-art incubation center; excellent research infrastructure; collaboration with industries & research organizations both within and outside India and highly qualified faculty, BMU aspires to transform society by pursuing research-led, innovative and practical solutions for high impact inclusive growth by focusing on:

- a. Key challenges faced by communities which have high impact such as climate change, power, transport, food, manufacturing, access to health and education
- b. Adopting a life cycle approach from inspiration to implementation of path breaking ideas
- c. Integrating research insights from multiple disciplines to create practical solutions and sustainable development

BMU has partnered with various government research and government organizations such as National Physical Laboratory, Indian Space Research Organization, Central Electronics Engineering Research Institute, Central Scientific Instruments Organization, Central Institute of Plastic Engineering and Technology, Data Security Council of India and many more. In addition, BMU has partnered with a number of Industries and International Universities towards academic excellence. Some of them are Microsoft, KPMG, Luthra and Luthra Partners, Hero group of companies, Bergen group of companies, UC Berkeley, Purdue North West university, Carleton University, University of Warwick, Aston University, Loughborough University, London School of Economics and Commerce and Fraunhofer Institutes.

At BMU, besides conventional workshops and laboratories in various disciplines, we are equipped with the following,

- i) Siemens Centre of Excellence in Automation, Robotics and Mechatronics
- ii) Shell Learning Centre in Tribology
- iii) Hero Manufacturing Engineering Centre including Additive Manufacturing facilities
- iv) Centre for Advance Materials and Devices
- v) High Performance Computing facilities
- vi) Centre for Inclusive Innovation
- vii) Centre for Financial Market

2. Welcome note of the Associate Dean- Doctoral Programmes

BML Munjal University is offering Doctoral Programmes leading to the award of the 'Doctor of Philosophy in Engineering and Technology', 'Doctor of Philosophy in Management' and 'Doctor of Philosophy in Law' under various schools of the University. The University is firmly committed to striving towards excellence in the respective domains of research and teaching. A critical component towards fostering a vibrant research ecosystem are high-quality doctoral programme(s). Towards this objective, BMU's doctoral programmes have been carefully designed to provide the required foundations for a research-intensive career in the respective specializations. The active collaborations BMU has with industries and Universities of International repute, add substantial value to the Doctoral Research at the University. We extend a warm welcome to the fresh batch of Doctoral students. We are certain that you will find it exciting and fulfilling, as you embark on this exploratory journey and achievements in the domain you choose to work in.

3. About the Schools

a. School of Engineering & Technology (SoET)

i. About SoET

The School of Engineering & Technology (SoET) at BML Munjal University came into existence in 2014 which a primary goal of realising the vision and mission of the university. From the days of its inception, the School has been an integral part of the educational strategy of university with focus on experiential learning and cutting-edge interdisciplinary research. In this regard, the Ph.D. program has been envisioned keeping in view the emerging needs of industry and academia. SoET has over a short span of time developed world class infrastructure and laboratory facilities required for conducting innovative research work. The faculty at SoET having many years of research experience are fairly equipped to guide students and conduct novel experiments and simulations. The School lays emphasis on core research projects for undergraduate students also, so as to integrate research work with classroom learning. The scope for undergraduate students and postgraduate research scholars working together on research projects presents a unique opportunity for collaborative effort and output. The School of Engineering & Technology (SoET) has active MOUs with well-reputed

international universities which shall be beneficial for Ph.D. research scholars. These MOUs, are intended to enhance the quality of the Doctoral Research through joint supervision, utilization of research infrastructure and student exchange. SoET in addition to the already existing international collaborations, also has collaborated with industry leaders which helps the university students to develop expertise in their chosen areas. The list of universities having active MOUs with SoET are:

1. Purdue North West University, USA
2. Aston University, UK
3. University of Agder, Norway
4. Kent State University, USA

ii. Welcome note by the Dean- School of Engineering and Technology

Central to the vision and mission of SOET is to produce enlightened and ethical global citizens. This is sought to be achieved through excellence in teaching, promoting learning, research and the pursuit of innovation. We welcome all Ph. D aspirants, who are willing to excel in their chosen field of interest, to join and take advantage of the state-of-the-art laboratories and research excellence centres on the campus, ably supported by experienced and enthusiastic faculty members. We at the school provide an environment which is very conducive for following your intellectual pursuits, with multiple avenues to fulfil your thirst for enquiry and research. With sustained guidance available for writing quality research projects and articles, availability of quality research databases, you will find the best repository of resources in our library to help you fulfil your doctoral requirements. We believe in an inter-disciplinary approach by promoting technical, management and liberal education as the central intellectual thrusts and as the foundation for lifelong learning, and sincerely look forward to helping you achieve your best in your doctoral work. Once again, we wholeheartedly look forward to welcome you to the serene and environmentally friendly surrounding of our BMU campus.

iii. Faculty details and research areas

Name of the Faculty	Designation	PostDoc experience	Research Areas
A. K. Prasada Rao, PhD- IIT Kharagpur	Professor & Associate Dean- Doctoral Programmes	POSTECH (South Korea); CNAQ (Qatar); Brunel University (UK); University of Oxford (UK)	Artificial Intelligence in Materials Science; Alloy design; Aluminium and Magnesium alloys; High-entropy alloys; Casting and Solidification; Physical Metallurgy

Abhimanyu Singh Rana, PhD- University of Pune	Assistant Professor	National University of Singapore (Singapore); University of Twente (Netherlands)	Spintronics, Neuromorphic Devices, Oxide Electronics, Li-Ion Batteries
Ajay Kumar Sood, PhD - IIT Delhi	Assistant Professor	-	Fluid Mechanics (Turbulent flows, drag reduction, fluid vibrations, LES, DNS)
Akhlaq Husain, PhD - IIT Kanpur	Associate Professor	-	Partial Differential Equations, Numerical Analysis, Parallel Computing
Amarjit Roy, PhD - NIT-Silchar	Assistant Professor	-	Digital Image Processing (Noise Removal, Medical Imaging, Image Security etc.)
Amarnath Bheemaraju, PhD- UMass Amherst (USA)	Assistant Professor	Washington State University (USA)	Organic electronics-Organic Solar cells and Organic Field effect transistors, Inorganic solar cells- CZTS based solar cells, Solar energy harvesting concentrators, Organometallics, Nano- inorganic materials for photocatalysis, Materials for remediation of air and water, Photo physics of semiconductor materials
Amiya Kumar Dash, PhD- NIT Rourkela	Associate Professor	-	Mechanical Vibration, Industrial Safety Engineering
Anubhav Agrawal, PhD - IIT-Roorkee	Assistant Professor	-	Power Electronic Controlled Induction Motor
Arijit Maitra, PhD - Westfälische Wilhelms Universität (Germany)	Assistant Professor	University of California-San Diego (USA); SUNY-Stony Brook, (USA)	Theory and simulation of materials - metals and polymers - at Nano and micro scales, prediction of structure-property relations; modelling of batteries and electrolytes; methods - classical MD, Monte Carlo, statistical physics, machine learning
Ashok Kumar Suhag, PhD-Gautam Budhha University	Assistant Professor	-	VLSI Test, Low Power Design and Test
Bipin Singh, PhD IIIT-Hyderabad	Assistant Professor	-	Bioinformatics, Computer Aided Drug Design, Biomedical Data Analysis
Brij Bihari Dubey, PhD- NIT Hamirpur	Assistant Professor	-	Wireless Networks
Devanjali Relan, PhD- University of Edinburgh	Assistant Professor	-	Image Processing, Applied Machine Learning
Goldie Gabrani, PhD - University of Delhi	Professor	-	Data-analytics, IOT based Solutions Especially in Healthcare Domain
Harish Puppala, PhD - BITS Pilani	Assistant Professor	-	Shallow Geothermal Systems, GIS in Urban planning

Kamal Kant Jain, PhD- IIT Delhi	Assistant Professor	Curtin University (Australia)	Construction Management, Application of Data Analytics in Construction Industry, Green Buildings, Sustainable Infrastructure, Life Cycle Assessment
Kiran Khatter, PhD- Himachal Pradesh University	Associate Professor	-	Non-Functional Requirements, Applications of Fuzzy Logic in MADM, Optimization and image processing
Maheswar Dwivedy, PhD- BITS Pilani	Associate Professor	-	Sustainable Machining, New and Improved Coatings, Cutting Tool Design and Dye-less Incremental Forming
Manoj K. Arora, PhD- Swansea University (UK)	Professor & Vice Chancellor	Syracuse University (USA)	Digital Remote Sensing and GIS applications, Machine Learning for Information Extraction from Satellite Data, Geospatial Tools for Disaster Studies.
Meenakshi Agarwal, PhD- University of Delhi	Assistant Professor	-	FPGA Implementation of Digital Circuits, Bio-Waste Recycling and Management, Renewal Energy, Signal Processing, Implementation of IOT Based Systems.
N. Ch. Kaushik, PhD- NIT Warangal	Assistant Professor	-	Tribology, Materials Processing and Characterization, Macro-, Micro-, Nano- Mechanical behaviour of Materials
Neeraj Sharma, PhD- Gautam Buddha University	Assistant Professor	-	Finite Element Modelling and Analysis of Composite, Experimental Characterization of Thermo-Mechanical, Thermal or Mechanical Behaviour of Composites
Nirupama M P, PhD- Jain University	Assistant Professor	-	Vacuum Nanoelectronics Devices (Growth and Study of nanocarbon based materials for various nanoelectronics applications), VLSI Systems Design using Hardware Design Language, Verilog.
O. S. Panwar, PhD- Panjab University	Professor	-	Synthesis of Undoped and Doped Graphene and its Application, Amorphous/ Micro/Nanocrystalline Silicon-Based Films and its Applications
P. S. Pandey, PhD- IIIT-Allahabad	Assistant Professor	-	Computer Networks, Wireless Networks, Mobile Adhoc Networks, Network coding, Mobile Computing, Cryptography and Network security, Cyber security, IoT
Pradeep Arya, PhD- Anna University	Assistant Professor	-	Cloud Computing, Cloud Security, Network Security
Maneek Kumar, PhD- Thapar University	Professor & Dean- School of Engineering and Technology	-	Reliability based Design and Optimization, Supplementary Cementitious Materials, Retrofitting and Rehabilitation, Ultra High-Performance Concrete

Rajesh Yadav, PhD - Mewar University	Assistant Professor	-	Cyber Security, Botnets, Malware, IOT Security, 5G Networks, Authentication & Network Slicing
Rajiv Dey, PhD - IIITDM Jabalpur	Assistant Professor	-	Embedded system, IoT and control
Ranbir Singh, PhD- DCRUST Murthal	Assistant Professor	-	Mechatronics & Automation, Flexible Manufacturing Design, Industrial Engineering & Manufacturing, Instrumentation
Ranjib Banerjee, PhD- Jadavpur University	Assistant Professor	-	Nonlinear Dynamics and Chaos Synchronization, Computational Applied Mathematics, Complex Network and Pattern Formation
Rishi Asthana, PhD - IIT-Roorkee	Associate Professor	-	Hydrodynamic Stability, Computational Fluid Dynamics, Mathematical Modelling
Sanmitra Barman, PhD- Kansas State University (USA)	Assistant Professor	Postdoctoral Researcher at University of Texas (USA)	Light Induced Catalysis through Nanomaterials Applicable in Water Desalination, Water Purification, Nano sensors for Environmental Monitoring, Drug Delivery Vehicles with Nanomaterials
Satyendr Singh, PhD- University of Allahabad	Assistant Professor	-	Natural Language Processing, Text Analytics
Shuvabrata Bandopadhaya, PhD - KIIT University	Assistant Professor	-	IoT Based System Design and Data Analytics, 5G Network Configuration Using Machine Learning
Soharab Hossain Shaikh, PhD- University of Calcutta	Assistant Professor	-	Computer Vision, Image Processing, Machine Learning in Computer Vision Applications
Suchitra Rajput Chauhan, PhD- IIT Delhi	Assistant Professor	Ankara University (Turkey)	Superconductors, thin films, Nanomaterials, Water Remediation, Coating on Biomedical Devices
Surya Prakash, PhD- MNIT Jaipur	Assistant Professor	-	Supply Chain Modelling, Industry 4.0
Tabish Rasheed, PhD- Aligarh Muslim University	Associate Professor & Faculty coordinator PhD program of SoET	-	Organic Electronics, Organic Solar Cells, Computational Chemistry (Density Functional Theory), Quantum Chemistry, Molecular Spectroscopy
Vinayak Kalluri, PhD- BITS Pilani	Associate Professor & Associate Dean Academics	-	Product design and development, Mechanical System Design.
Yarramaneni Sridharbabu, PhD- Kurukshetra University	Associate Professor & Professor-in-charge Applied Sciences	-	Electrical Characterization of Dielectric Materials, Synthesis and Characterization of Nanocomposite Materials
Yogesh Gupta, PhD- Dayalbagh University	Associate Professor	-	Information Retrieval, Data Analytics, Optimization Techniques, Machine Learning

Ziya Uddin, PhD- G. B. Pant University of Agriculture & Technology	Associate Professor	Université de Valenciennes et du Hainaut-Cambrésis (France)	Applied Mathematical Modelling, Computational Fluid Dynamics, Modelling of Nano Fluids & Heat Transfer, Soft Computing and Applied Numerical Methods.
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**BML MUNJAL
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Centres of Excellence

BML Munjal University continuously strives to promote world-class research activities at their in-house research facilities. The purpose of these facilities is to create opportunities for students to carry out important simulations, experiments and characterizations within the campus. The centres of excellence hosted by the University cater to the needs of cutting-edge research.

CENTRE FOR ADVANCED MATERIALS AND DEVICES (CAMD)

To support faculty in research in Materials Science and Engineering, BMU has created an advanced research facility named the “Center for Advanced Materials and Devices”.

It is equipped with several scientific instruments that are available in some of the renowned universities/ IITs/ Institutes in India. The Center is broadly classified into three research facilities:

- 1) Thin-films and Measurement Lab
- 2) Material Characterization Lab
- 3) Device Fabrication Lab

Thin Films and Measurement lab includes some advanced Physical Vapor Deposition Systems (Sputtering, Electron Beam Evaporation, Cathodic Arc) and Plasma Enhanced Chemical Vapor deposition for thin films and surface engineering research. Material Characterization lab has some sophisticated imported equipment such as X-ray Diffraction, Scanning Electron Microscope, an Integrated system having Atomic Force Microscope, Scanning Near Optical Microscope and Raman Spectroscopy for advanced materials research Device and fabrication lab include instruments such as the glove box and laser pattern generator system.

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PECVD cluster tool



PECVD



E-Beam and Thermal



Raman, SNOM, PL, AFM System



RF-DC Cathodic Arc



RF-DC magnetron sputtering



RESEARCH HIGHLIGHTS AND KEY FACILITIES

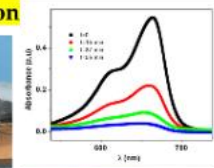
Materials for Hard & Wear Resistant Coatings



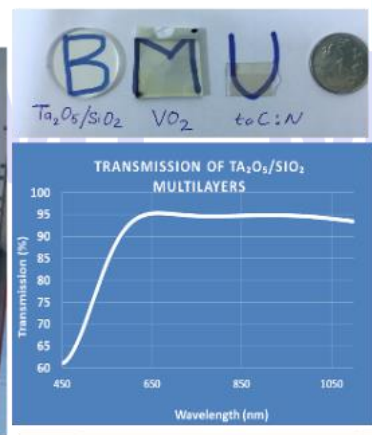
Materials for Energy Storage



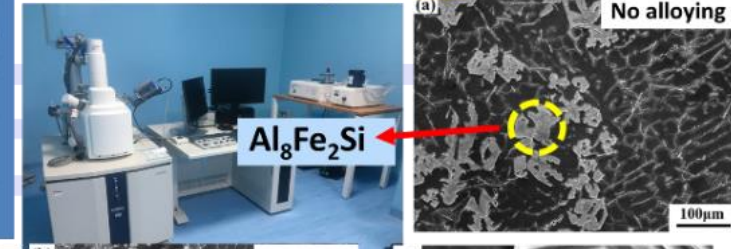
Materials for Water Remediation & Purification



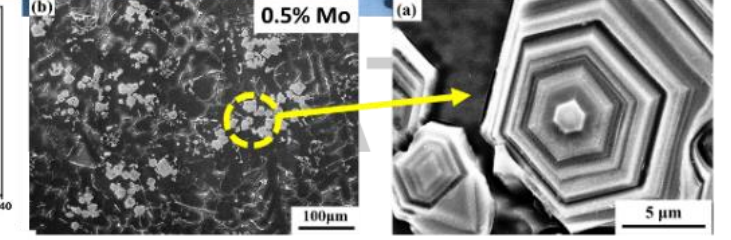
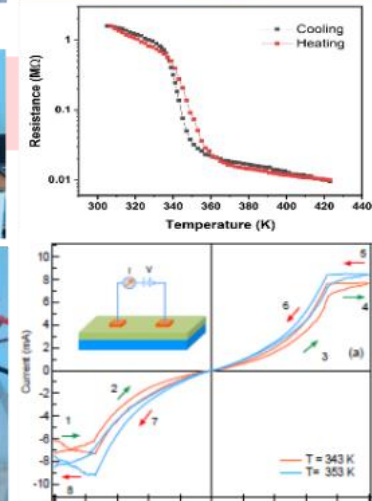
Materials for Transparent Electronics & Optical Coatings



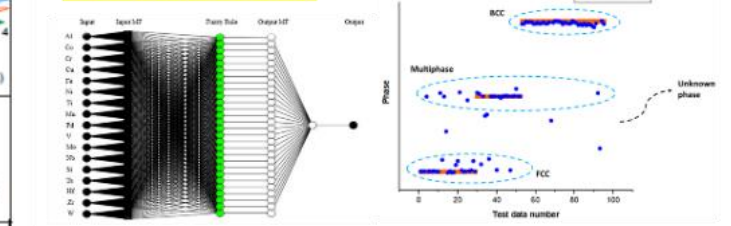
Aluminium Alloy Processing & Recycling



Materials for Sensors & Neuromorphic Devices



AI for Materials Science



Faculty coordinators:

- 1) Thin-films and Measurement Lab (Incharge: Dr. Abhimanyu Rana)
- 2) Material Characterization Lab (Incharge: Prof. A.K. Prasada Rao)
- 3) Device Fabrication Lab (Incharge: Dr. Amarnath Bheemaraju)

Siemens Centre of Excellence in Automation, Robotics and Mechatronics (ARM)

Incharge: Prof. Sushil Chandra

The objective of BMU CoE is to develop/enhance the technical skills and competence of the trainees (Engg. Grad. /Under Grad., ITI, Diploma and Industry people) which leads them to enlarge their area of employment opportunity and career in the field of modern industry. The Centre is equipped with several scientific instruments that are available otherwise only in some of the renowned institutions of technical learning in India. The Centre is broadly classified into eight facilities:

- (1) Product Design and Validation Lab
- (2) Robotics Lab
- (3) Pneumatics and Hydraulics Lab
- (4) CNC Lab
- (5) Mechatronics Lab
- (6) Process Instruments Lab
- (7) Automation Lab
- (8) Electrical Lab

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Product Design and Validation Lab

This facility generates the capability to design a product and validate the design by automating the process of designing, drawing and analysing with digital tools and curriculum prepared by renowned professionals from SIEMENS PLM. Students can learn and perfect the engineering of conceptualizing and designing a new product right from the scratch and validate it using FEA. The following softwares are installed:

- SIEMENS NX-10.0 (Including bundle of CAD, CAE)
- FEMAP(CAE)
- TEAMCENTER(PLM)

Robotics Lab

The Centre is equipped with standard training cells comprising of KUKA (a German manufacturer of industrial robots and solutions for factory automation) KRC-4 industrial robot with required auxiliary equipment. This training cell is capable of performing multitude of operations used for Arc welding, Material handling and Spot welding and other essential operations used by the automobile, food and beverages, packaging and other manufacturing and production industries.



Pneumatics and Hydraulics Lab

Pneumatic solutions are increasingly used in all branches of industry and it is also used in the development of automation solutions. This lab has a set of sophisticated Pneumatic/Hydraulics, Electro-Pneumatic and Hydraulics equipment which is used to impart fundamental training, including on the process of designing pneumatic and hydraulic circuits on kit and on Fluid Sim software.



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CNC Lab

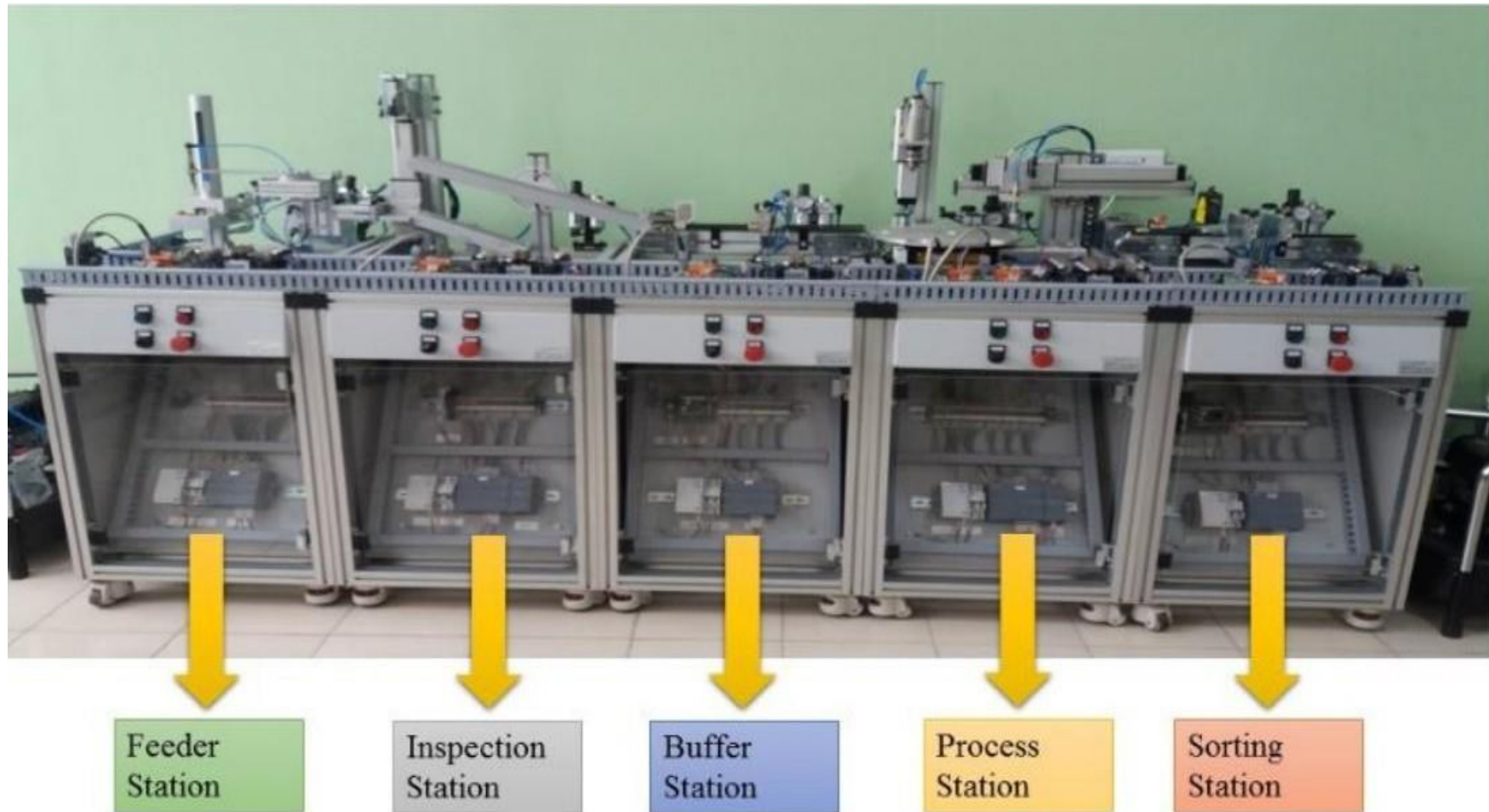
This lab is used to train how to apply the fundamentals and principle of machining, part programming, tooling and production technology for the integration of automated systems for the ease of production industry. The centre has real time CNC controller to provide the training on CNC Turning and Milling. Lab is equipped with two CNC turning kits and 2 CNC Milling Kits and 1 replica of VMC in which trainees use to prepare the coding for the product design and also use SINUMERIC software for virtual training practice.



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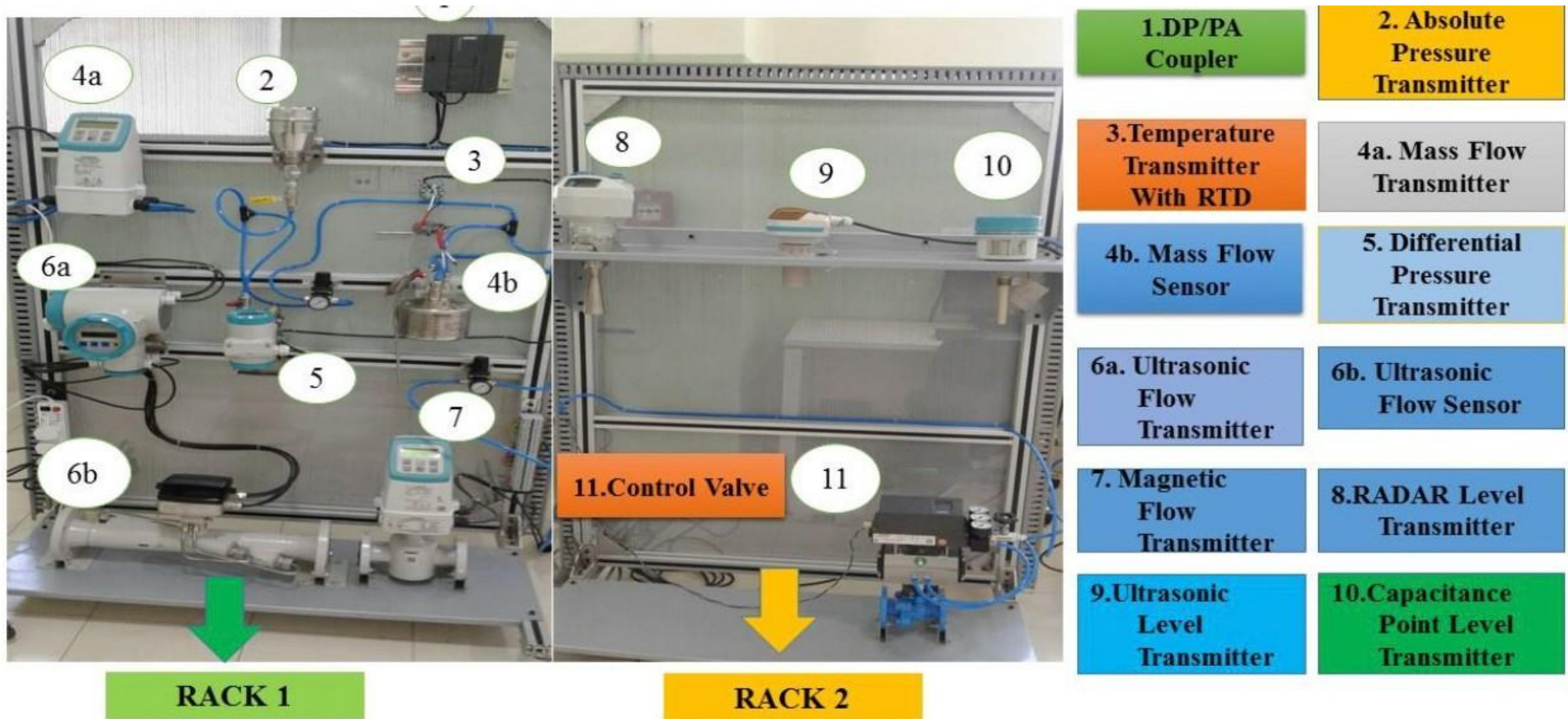
Mechatronics Lab

The aim of the Mechatronics course is to apply the fundamentals and principle of mechanical, electronics and computer engineering for the integration of automated systems for the ease of production industry. The lab is equipped with two sets of 5-station Industrial application prototypes for understating the application of mechatronic concept. These are used to provide the training on basic concepts and implementation of computers, electronics, mechanical drives and systems, programmable logic controllers, sensors and transducers, hydraulic, pneumatic and electric drives design of mechanical structure and mechanism.



Process Instrumentation Lab

This lab is designed to enable maintenance personnel to carry out commissioning, calibration and maintenance of the typical devices used for measurements and control in industrial systems. These are equipped with 2 types of industrial Pressure sensor, 3 types of Level sensor, Temperature sensor, 3 types of flow sensor and control valves with smart positioner and PCS7. These are used to skill the trainees on how to program, calibrate and monitor the sensors using HART and Profibus modules. PCS-7 is used to instruct trainees on how to communicate and program the different industrial sensors and process control equipment and design the SCADA system to monitor and control the process.



Automation Lab

The aim of Automation course is to demonstrate how PLC controls communicate with the machines by user defined programs and monitor/control the whole process by means of HMI and SCADA. This lab is equipped with 6 S7-1200 PLCs and 1 S7-1500 PLC with KTP HMI-700 Basic and SCADA system and used to train the trainees about the different hardware arrangements of PLC, application of PLC, HMI and SCADA and the process to program a PLC using different programming languages. PLC has a wide variety of applications in manufacturing industry to automate the conventional arrangement in to automated systems it make ease for manufacturing industry.



Electrical Lab

The aim of Electrical course is to make the trainees familiar with the basic electrical industrial components, switch gear, drives and the method to use the electricity efficiently and safety of electrical machines. This lab is equipped with electrical devices like ACB, MCCB, Drives AC/DC, Soft starter, Type two coordinating kits, Timer relays kit and Simocode. Here the trainees are trained about the fundamentals of basic switch gear, commissioning of AC/DC drives and basic trouble shooting.



HIGH PERFORMANCE COMPUTING (HPC) CLUSTER

Incharge: Prof. Goldie Gabrani

The University has a High-performance compute cluster that can process data and perform complex calculations at high speeds – up to 4 TeraFlops. The cluster runs on the CentOS operating system and consists of a control node and 5 compute nodes each having 96 GB primary memory and two Xeon processors with multiple cores processing each, together accessing 24TB of storage over fibre channel. Applications running on this include Gromacs to perform molecular dynamics, i.e. simulate the Newtonian equations of motion for systems with hundreds to millions of particles; Comsol Multiphysics for cross-platform finite element analysis; and Ansys for engineering simulations, among others.

The facility is designed to cater to activities in the area of Cloud Computing, Internet of Things (IOT), ICT enabled inclusive innovation based on Mobility and Big Data and Analytics including Data mining, Data Warehousing, Business Intelligence, Security, software testing and pilot studies leveraging the institutional network, Policy for Cloud & IOT, Hand held devices and Apps, Market analysis, HR requirement study, and Digital Marketing. The Institute already has about 20 Kms of wire and fibre-based connectivity and close to 200 wireless access points.

FUNDED RESEARCH/CONSULTANCY PROJECTS

The School of Engineering & Technology has a number of ongoing and completed funded research projects. Some of the exciting research projects at SoET are as follows:

1. SERB-DST Startup Research Grant Young Scientist (Principal Investigator: Dr. Tabish Rasheed) having budget of Rs. 16.77 Lakhs (completed).
2. SERB-DST Startup Research Grant Young Scientist (Principal Investigator: Dr. Amarnath Bheemaraju) having budget of Rs. 20.60 Lakhs (completed).
3. MATRICS (SERB) Scheme (Principal Investigator: Dr. Akhlaq Hussain) having budget of Rs. 6.6 Lakhs (ongoing).
4. Consultancy project funded by Rockman Industries, Ludhiana having budget of Rs. 17.5 Lakhs (ongoing).
5. Project funded by NITI AAYOG having budget of Rs. 25 Lakhs (completed).
6. Project funded by Indian Electronics and Semiconductor Association & DIETY, Govt of India having budget of Rs. 5 Lakhs (completed).
7. Project funded by Royal Academy of Engineering, UK having budget of Rs. 45 Lakhs (completed).

3(b). SCHOOL OF MANAGEMENT

The School of Management has designed its Ph.D. program to train students, transforming them into learned, skilled, and knowledgeable academicians dedicated to the service of nation and world. The program structure is conceptualized, keeping the experiential learning vision in mind with an interdisciplinary research approach in fundamental and applied research. Research scholars are expected to publish high impact papers in ABDC/SCI/Scopus indexed journals of high international repute and present their important results at national/international conferences to showcase their work to the society. They must be able to carry out quality research work and guide others in conducting research after completing their Ph.D. degree. The program envisions to enhance their ability to teach undergraduate and postgraduate students. A mandatory Ph.D. course work will allow the candidates to learn and master research techniques indispensable for carrying out their research during the course of the doctoral program. These courses may be offered jointly with other schools in the university or international Universities which the University has MoUs with. The Ph.D. students may also get an opportunity to be supervised by eminent faculty of these universities.

The School of Management has established a successful tradition of creating academic research centres to focus our teaching, research, and community outreach around particularly important subjects for general managers. Building on the foundational excellence of the school's curriculum, we intend to strengthen these centres in a move that we know will distinguish us from other business schools.

Welcome note by the Dean

We are a young forward-thinking University that realizes the importance of knowledge creation and research as important drivers of learning and contribution at a global level. We want to be at the forefront of cutting-edge research within management, humanities and the social sciences. Our experienced, research-oriented faculty have been publishing regularly at the highest levels and have been involved in important scholarly projects across the spectrum. Our doctoral scholars have also been making waves within contemporary research areas such as Marketing/Retail management and behaviour, Financial Management, Organizational Behaviour and Leadership, Industry 4.0, Analytics and Decision Sciences, Corporate Social Responsibility, Pedagogical advances to name a few. We are also very keen on aspiring doctoral scholars who are on the cusp of the technical and management domain and would like to contribute academically in this area.

Centre for Financial and Capital Markets

Centre for Financial and Capital Markets aims to facilitate and encourage research and teaching in financial markets, Investment as a life skill, Application of technology in financial services including newer technologies like Blockchain and Artificial Intelligence (AI), Entrepreneurship, an incubator for startup ideas in Financial Literacy, Financial inclusion, Fin-tech solutions and any other related areas. The Centre intends to provide financial markets laboratory to support faculty and scholars in teaching and conducting research on Financial Markets (Bloomberg terminal), provide TrakInvest.com platform for acquiring and enhancing investment skills, delivering various up-skilling courses linked to industry requirements, launch various FDPs and MDPs open to candidates beyond the Campus and constituting a board of mentors who regularly screens new business ideas and incubates the shortlisted ones until they secure funding.

Faculty In-Charge: Dr. Sangita Chaudhary

Centre for Marketing Analytics

The centre aims to offer marketing expertise in the practical application of big data and advanced analytics. We know that the most critical skills for success include the capacity to assess where an organization is, define where it wants to go, and plan for getting there. We have successfully completed research and consultancy projects with public and private organizations. We have knowledge to tackle a range of problems facing those using predictive and prescriptive analytics, including demand planning, market modelling, and so on. In addition to this, we design and deliver courses and MDP to meet industry specific needs, using interactive material that gives attendees hands-on experience. Throughout the year we host a range of events, including courses, guest speakers, conferences, conclave, it is a great way to tap into our expertise.

Faculty In-Charge: Dr. Vishal Talwar, Dr. Rik Paul, Dr. Chirag Malik, Dr. Ruchi Garg, Dr. Ritu Chhikara

AIMA - Bizlab

Research over many years indicates that relevant game-based business simulation leads to improved student learning, increased motivation, and improved student performance. At School of Management (SOM), BML Munjal University, a variety of interactive business simulations are used that bring out higher level thinking skills for students both at undergraduate as well as postgraduate levels. Well-designed simulations contain pedagogical elements that help the student explore, navigate, and comprehend more information about dynamic business system than can be obtained through the process of merely reading textbooks or solving case studies. It also improves student-professor interactions as the professor no longer assumes the role of a mentor and accedes to supporting the role of a moderator or a facilitator in reality-based learning activities, thus enabling the students to learn by themselves. To promote learning by doing SOM in collaboration with AIMA, BizLab has set up a full-scale Business Simulation Lab for the enhancement of learning. AIMA BizLab offers a virtual business laboratory designed for management graduates to assist them in hands-on-experience of management concepts and make them industry-ready. The lab has been inaugurated by Mr. Sunil Kant Munjal, Honourable Chancellor, BML Munjal University on 22nd July 2019.

International MOUs

The School of Management at BML Munjal University has active MOUs with well-reputed international universities which shall be beneficial for Ph.D. research scholars. Under these MOUs, there is provision for research collaboration and student exchange. The list of universities having active MOUs with SOM are:

1. Imperial College London, UK
2. Singapore Management University, Singapore
3. North South University, Dhaka
4. University of Michigan-Flint, USA
5. Saint Mary's College of California, USA

6. Department of Management and Innovation system, University of Salerno, Italy
7. University of North Georgia, USA
8. School of Business and Economics, Loughborough University, UK
9. Aston University, UK
10. Purdue University North west, US

Faculty and Research Areas

<u>Faculty Name</u>	<u>Designation</u>	<u>Area of Research Interest</u>
Amit Bagga, PhD- CCS University	<u>Adjunct Associate Professor</u>	<u>IFRS, Stock Market, Wealth Management, Wealth Advisory</u>
Anusree Paul, PhD-University of Calcutta	<u>Associate Professor</u>	<u>Health Economics, International Economics</u>
Chirag Malik, PhD- Dr. APJ Abdul Kalam Technical University	<u>Associate Professor</u>	<u>Sustainability, Marketing Analytics, Decision Tree and Random Forest, Environmentally Conscious Consumers</u>
Deepti Sharma, PhD- Dr B R Ambedkar University- Agra	-	-
Dipankar Das, PhD- The University of Burdwan	<u>Assistant Professor</u>	<u>Decision Theory, Complexity Economics, Computational Economics, Game Theory</u>
Jaskiran Arora, PhD- Maharshi Dayanand University, Rohtak	<u>Professor & Asst. Dean Academics</u>	<u>Earnings Management, Higher Education, Corporate Social Responsibility, Problem Solving</u>
Jaya Ahuja, PhD- Jamia Millia Islamia University	<u>Assistant Professor</u>	<u>Work-Life Integration, Sustainable HRM, Organizational Climate & Virtual Teams</u>
Nandita Choudhary	<u>Professor</u>	-
Payal Kumar	<u>Professor</u>	<u>Diversity & Inclusion, Gender Studies, Entrepreneurship, Mentoring, Dysfunctional work Behaviour, Leadership & Followership</u>
Rik Paul, PhD- Ibs Hyderabad, Ifhe University	<u>Associate Professor</u>	<u>Services Marketing, Internet of Things (IoT), Innovative Pedagogy, Consumer Behaviour</u>
Ritu Chhikara	<u>Assistant Professor</u>	<u>Sustainability, Sensory Marketing, Consumer Behaviour, Retail Management, Branding</u>
Ruchi Garg, PhD- Management Development Institute (MDI)	<u>Assistant Professor</u>	<u>Sustainability, Consumer Brand Relationship, Sensory Marketing, Consumer Behaviour, Branding</u>
Sangita Chaudhary, PhD- University of Rajasthan, Jaipur	<u>Associate Professor</u>	<u>Asset Pricing, Behavioral Finance, Earnings Management, Corporate Finance, Sustainability Operations</u>
Vaishali Sharma, PhD- Delhi Technological University	<u>Assistant Professor</u>	<u>Marketing and International Business, Supply Chain Management/Reverse Logistics, Remanufacturing</u>



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3 (c). School of Law

The Ph.D. Programme in Law is designed to facilitate generation of high-quality researchers, capable of understanding legal theory, legal practice, and the relationship between them through a rigorous doctrinal and inter-disciplinary research. The program structure is conceptualized keeping the experiential learning vision in mind with an inter-disciplinary research approach in fundamental and applied research. Research scholars are expected to publish high impact papers in journals of high international repute and present their important results at national or international conferences to showcase their work to the society. They must be able to carry out quality research work and guide others in conducting research after completing their Ph.D. degree. The program envisions to enhance their ability to teach undergraduate and post-graduate students. A mandatory Ph.D. course work will give the candidates an opportunity to learn and master research techniques indispensable for carrying out their research during the course of doctoral program. These courses may be offered jointly with other schools in the university or international universities which the University has MoUs with. The Ph.D. students may also get an opportunity to be jointly supervised by eminent faculty of the Universities/ Institutions, who have MoU with BML Munjal University.

Welcome note by the Dean

Welcome to the Ph.D. programme at the School of Law! We want you to take advantage of our diverse faculty interests, our state of the art legal databases, and our inter-disciplinary resources that span engineering, management and economics. Research at the law school, while important in its own right, serves also as fuel for teaching, for good teachers are invariably good researchers. We want our PhD scholars to be enterprising, innovative and creative on the one hand and meticulous, detail oriented and time conscious on the other, for the PhD process requires a combination of imagination and perspiration. We would like you to combine your research zeal with your knowledge, with an emphasis on combining theory and practice in such a way that your doctoral output has the maximum impact on and relevance to the legal profession. Above all, we invite you to enjoy yourself in legal academia, and become an important part of the vibrant intellectual climate at BMU.

Law Library and Infrastructure

BMU has one of the best state-of-the-art libraries in the region. There are approximately 1136 books from various areas to engage the intellectual curiosity of the students at BMU. We subscribe to several online databases like Academic Search Premier, EBSCO Business Source Premier, Sage Online, Thomson Reuters, Manupatra, Lexis-Nexis India Online, etc. We plan to expand this further in near future as well. Peer-reviewed journals are available at the desktop of faculties and students. At the same time, many hard-bound journals, conference proceedings, dissertations are available in the library. Students can find all important dailies and magazines like Economist, Outlook, Frontline, etc. in the library.

Legal Aid Centre

The School of Law has active MOU with National Law University, Delhi which shall be beneficial for Ph.D. research scholars. Under the MOU, there is provision for joint supervision, utilization of research infrastructure and student exchange.

Faculty and Research Areas

Name of Faculty	Research Areas
Dr. Kavita Chawla	Corporate and commercial law
Prof. Nigam Nuggehalli	Tax, contract and jurisprudence
Dr. Vivek Sehrawat	Drones, autonomous weapon systems, international humanitarian law, international law, human rights, National Security, Technology, privacy law and torts law



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Call for Ph. D Admissions at various Schools at BML Munjal University (1st Semester 2020-21)

APPLICATIONS ARE INVITED FOR ADMISSION INTO Doctoral Programmes (PhD) across various schools of the University, for the Semester "JULY ~ DECEMBER 2020".

HOW TO APPLY: Application forms should be submitted online only, by clicking [HERE](#)

School of Engineering and Technology (SOET): "Doctor of Philosophy (Ph.D.) in Engineering & Technology"

School of Management (SOM): "Doctor of Philosophy (Ph.D.) in Management"

School of Law (SOL): "Doctor of Philosophy (Ph.D.) in Law"

CONTACT DETAILS:

Please e-mail all your queries to: phdadmission2020@bmu.edu.in ;

Website: www.bmu.edu.in

ELIGIBILITY CRITERIA

1) SCHOOL OF ENGINEERING & TECHNOLOGY

The minimum educational qualifications for admission to the Ph. D. programme of the School of Engineering & Technology are as follows:

- **PH.D. IN ENGINEERING & TECHNOLOGY (CIVIL, MECHANICAL, COMPUTER SCIENCE, ELECTRONICS & COMMUNICATION):**

Master's degree in Engineering/ Technology of 2 years duration or equivalent (after graduation in respective discipline) with a minimum Cumulative Grade Point Average (CGPA) of 6 on a 10 point scale or equivalent as determined by the Institute wherever letter grades are awarded; or 55% marks in aggregate (of all the years/ semesters) where marks are awarded. Those students who are in the verge of completion of their Master's degree (in final semester) are also eligible to apply. However, their admission is subject to submission of final marksheet and qualifying the minimum prescribed eligibility criteria at time of registration.

(OR)

GATE qualified candidates (within last two years) are exempted from admission test and are eligible for direct interview subject to qualifying the minimum prescribed eligibility criteria (as prescribed above).

- **PH.D. IN ENGINEERING & TECHNOLOGY (PHYSICS, CHEMISTRY, MATHEMATICS, LIFE SCIENCES):**

Master's degree in Science/Life Science of 2 years duration or equivalent (after graduation in respective discipline) with a minimum Cumulative Grade Point Average (CGPA) of 6 on a 10 point scale or equivalent as determined by the Institute wherever letter grades are awarded; or 55% marks in aggregate

(of all the years/ semesters) where marks are awarded. Those students who are in the verge of completion of their Master's degree (in final semester) are also eligible to apply. However, their admission is subject to submission of final marksheet and qualifying the minimum prescribed eligibility criteria at time of registration.

(OR)

NET qualified candidates are exempted from admission test and are eligible for direct interview subject to qualifying the minimum prescribed eligibility criteria (as prescribed above).

2) SCHOOL OF MANAGEMENT

The minimum educational qualifications for admission to the Ph. D. programme of the School of Management are as follows:

PH.D. IN MANAGEMENT

Master's degree (with a minimum of 55% marks OR minimum Cumulative Grade Point Average (CGPA) of 6 on a 10-point scale or equivalent as determined by the Institute wherever letter grades are awarded) in relevant specialization, from a recognized university. Those students who are in the verge of completion of their Master's degree (in final semester) are also eligible to apply. However, their admission is subject to submission of final marksheet and qualifying the minimum prescribed eligibility criteria at time of registration.

3) SCHOOL OF LAW

The minimum educational qualifications for admission to the Ph. D. programme of the School of Law are as follows:

PH.D. IN LAW

Master's degree (with a minimum of 55% marks OR minimum Cumulative Grade Point Average (CGPA) of 6 on a 10-point scale or equivalent as determined by the Institute wherever letter grades are awarded) in relevant specialization, from a recognized university. Those students who are in the verge of completion of their Master's degree (in final semester) are also eligible to apply. However, their admission is subject to submission of final marksheet and qualifying the minimum prescribed eligibility criteria at time of registration.

Note: A relaxation of 5% of marks, from 55% to 50%, or an equivalent relaxation of grade, may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/differently-abled and other categories of candidates as per UGC norms.

ADMISSION PROCEDURE

Admission to the Ph.D. program is made on the basis of the minimum eligibility criteria of candidate as mentioned above. Admissions will be carried out twice, in July and December in an Academic Year. However, the candidates who are GATE (within last two years) / NET and satisfy the minimum eligibility criteria may be called for interview at any time during the year. In case of selection, these candidates will be offered provisional admission, and will be formally registered during the start of the immediate next semester. Typical admission procedure to be followed is:

- **On-line submission of completed application form with all relevant enclosures and application fee**
- Review of applications and short-listing of candidates by the screening committee
- On-line Written Test (Aptitude and subject specific), if applicable.
- On-line interview by the selection committee

The candidates recommended by the selection committee will be notified and a formal offer of admission will be given. The committee's decision in this regard is final and binding.

FEE STRUCTURE

Item	Fee (in INR)
One Time Charges	
Application Fee	1,500
Admission Fee(non-refundable)	15,000
Security Deposit (refundable)	50,000
Thesis Evaluation fee (to be paid before submission of Thesis)	30,000
Recurring Charges (in INR)	
Tuition Fee (full time students)	1,25,000 (per year)
Medical Insurance	5,000 (per year)
Hostel Fee (For un-married, Single occupancy) *	4,000 (per month)
Married Accommodation Fee (Only for married Students) * (optional)	8,000 (per month)
Food and Laundry (for Unmarried students)	6,000 (per month)
* Electricity charges (per month) at actuals; General PhD duration is expected to be 4 years (minimum of 3 years and a maximum of 6 years, to be extended on a case by case basis review, for periods beyond 4 years)	

- **UNIVERSITY FEE-WAIVER/ SCHOLARSHIP, FELLOWSHIP**

a) **Fee waiver:** All Ph.D. full time Ph.D. applicants are eligible for tuition fee waiver of up to 80% as the Scholarship, which will be recommended by the selection committee to the approving authority, whose decision will be final and binding. The continuation of scholarship in subsequent semesters will be as per the university policy.

b) **University Research Fellowship:** All full time Ph.D. research scholars recommended for admissions will be awarded University Research Fellowship of **INR 40,000/- (per month)** for first two years and INR 50,000/- (per month) for third and fourth year. These students will be called as University Research Fellows. The continuation of University Research Fellowship will be based on monthly satisfactory reports from the Ph.D. supervisors.

- **PROFESSIONAL DEVELOPMENT GRANT**

Each full-time research scholar shall be eligible for a Professional Development Grant (PDG) of INR 20,000/- (per annum) for first two years and INR 50,000/- (per annum) for the subsequent two years for their professional development, carrying out research activities, attending conferences/workshops, etc. Similarly, each part time Ph.D. scholar will also be eligible for a PDG of INR 15,000/- (per annum) for first two years and INR 25,000/- (per annum) for the subsequent two years. The applicability of PDG will be as per the University policy.

- **OPTIONAL ON CAMPUS ACCOMMODATION FOR FULL-TIME STUDENTS (chargeable as per University rules)**

- Single occupancy bachelor hostel accommodation: For unmarried Ph.D. research scholars (**Charged @ Rs. 4,000 per month**)
- Family accommodation: For married Ph.D. research scholars shall be provided on the recommendation of the Supervisor and subject to availability. (**Charged @ Rs. 8,000 per month**)

Structure of Ph. D program:

Admission → Registration → Prescribed Course Work → Protocol Presentation in front of RPEC, URPC, and Faculty Members → Pre-Synopsis Report and Presentation in front of RPEC, URPC, and Faculty Members → Submission of Thesis → Presentation to Defense Committee/Final Viva-Voce

Monitoring of the progress: The progress of the research work shall be monitored by PhD supervisor(s). School level committee and a University level committee (URPC) shall monitor the student's progress on a systematic schedule basis. After submission of thesis and completion of review process by the reviewers appointed by the Vice Chancellor, the candidate will be required to defend his/her thesis before a Ph.D. Examination Committee, constituted by

the Associate Dean Doctoral Programmes for each candidate. And this committee comprises of members of RPEC, URPC and subject experts, including one of the reviewers of the thesis in question. Upon satisfactory defense by the student, the committee shall recommend the thesis for award of a PhD degree.



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- **IMPORTANT DATES**

SUMMER SESSION (JULY - DECEMBER 2020)

Last date for Submission of On-line Application Form	Tuesday, 30 th June 2020
Date of On-line Entrance Examination (website link will be shared individually)	Saturday, 25 th July 2020
On-line Interview (website link will be shared individually)	Sunday, 26 th July 2020
Selection Notification (through e-mail)	Monday, 27 th July, 2020
Registration	Tuesday, 1 st Sept 2020

WINTER SESSION (JANUARY - MAY 2021)

Last date for Submission of Form	Saturday, 19 September 2020
Date of Entrance Examination & Interview	Saturday, 17 October 2020
Selection Notification	Friday, 23 October 2020
Registration	Monday, 18 January 2021

- **DETAILS OF TEST/INTERVIEW**

(Candidates who have **valid GATE/UGC/NET/CAT/ GMAT qualification/score within the last two years**, or any other equivalent national scholarship examination, are exempted for the written entrance exam (PART-1 & PART-2). However, they are required to appear before a selection panel for an Interview. All other candidates have to appear for the entrance examination (PART-1 & PART-2) conducted by BMU followed by an interview by a selection panel.)

SYLLABI FOR THE ONLINE WRITTEN TESTS

(a) PART-I (Common to all): syllabus see Annexure-C

(b) SYLLABI FOR SUBJECT SPECIFIC TEST (PART-II)

For admission in to PhD in Engineering & Technology:

Mechanical, Civil, Electronics, Computer Science: See **Annexure- A**

Physics, Chemistry, Maths, Life Science: See **Annexure- B**

For admission in to PhD in Management:

Subject specific test syllabus please see **Annexure- D**

For admission in to PhD in Law: Socio-Legal Research Methods; Constitutional Law; Administrative Law; Criminal Law; Intellectual Property Laws; Corporate Law; Environmental Law; Gender Justice; Family Law; Jurisprudence; International Law

- **STRUCTURE OF THE QUESTION PAPER**

The pattern for online entrance test shall be in the form of two parts as defined below:

PART-I: General Aptitude (35 marks objective) + Essay on a given topic (15 marks)

PART-II: Subject specific (50 marks objective)