MADAN BHANDARI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Invitation of Applications for Admission to
Master of Applied Science and PhD Programs
June 11, 2025
(Amendment: July 7, 2025)

1. Introduction

Madan Bhandari University of Science and Technology (MBUST) was established through the promulgation of the Madan Bhandari University of Science and Technology Act, 2079 (2022 AD) on August 3, 2022. This Act grants extensive autonomy to the University creating an enabling environment for developing MBUST into a world-class research-oriented university. MBUST holds the promise of making direct contribution to the economic development of the country through the creation of new knowledge and technology, which should enhance the competitiveness of the country's economy.

The MBUST ***vision is to be a world-class university*** and the ***mission is to build prosperous and just Nepal***. MBUST is committed to provide world-class education by attracting talented and committed students and academic staff, and providing a conducive environment for research and development activities focused at solving real-life problems of the industry using the state-of-the- art knowledge and technology.

2. Academic Programs

The teaching and research activities of the University are guided by the real-life problems of the industry. Teaching and research programs of the University are delivered through the Institutes engaged in research related to specific economic sectors. The students will pursue their study in close collaboration with related industries and are expected to develop a new technology for collaborating industrial partners. This approach is designed to produce graduates who are "job creators" rather than "job seekers".

MBUST has been offering PhD and Master of Applied Science (MAS) programs in Organic Agriculture, Forest Biomaterials Science and Engineering, and MAS programs in Artificial Intelligence, Data Science and Sustainable and Resilient Infrastructure.

Academic programs to be offered in November 2025 session are PhD in Organic Agriculture, Forest Biomaterials Science and Engineering and Artificial Intelligence and MAS in Organic Agriculture, Forest Biomaterials Science and Engineering, and Sustainable and Resilient Infrastructure.

Curriculum structures (Attachment[1] 1) and lists of resource persons for various degrees (Attachment 2) are appended to this notice. Please visit www.mbust.edu.np for more details.

[1] All attachments may be updated. Please keep visiting the website for updates.

3. Programs, Intake and Financial Support

Program	Total intake	Tuition fee waiver and scholarship[2]	Tuition fee waiver only			
			100%	75%	50%	25%
PhD[3]						
Organic Agriculture	2	For up to 2				
Forest Biomaterials Science and Engineering	2	For up to 2				
Artificial Intelligence	2	For up to 2				
Sustainable and Resilient Infrastructure	2	For up to 2				
Master of Applied Science (MAS)						
Organic Agriculture	Up to 16	For up to 2	For up to 2 additional students	For up to 2 additional students	For up to 2 additional students	For up to 8 additional students
Forest Biomaterials Science and Engineering	Up to 16	For up to 2	For up to 2 additional students	For up to 2 additional students	For up to 2 additional students	For up to 8 additional students
Sustainable and Resilient Infrastructure	Up to 16	For up to 2	For up to 2 additional students	For up to 2 additional students	For up to 2 additional students	For up to 8 additional students

Monthly scholarship of **Rs. 20,000** and **Rs. 12,000** respectively may be provided to PhD students for 36 months and Master's students for 24 months based on scholastic performance subject to the *availability of resources* and *satisfactory performance*. Students getting fee waiver and/ or scholarships are required to be engaged in University's research and other activities.

For getting tuition fee waivers and scholarships, Master's students will have to commit to be employed or self-employed in Nepal or serve at MBUST or institutions placed by the MBUST for at least two years. The duration of service will be half of the above for students getting only the fee waiver independent of the degree of the fee waiver. Similarly, PhD students, for getting tuition fee waivers and scholarships, will have to commit to be employed or self-employed in Nepal or serve at MBUST or institutions placed by the MBUST for at least three years. Students failing to meet these obligations shall be morally obliged to reimburse to the University the full amount of scholarship and fee waiver, at the value of Nepali Rupees at the time of their graduation, they have received within five years after the graduation.

If recipients of tuition fee waiver and scholarship leave the study before completion they will have to reimburse the total amount of scholarship received and pay tuition fees for the whole course.

[2] Scholarship shall not be provided for individuals who are on paid leave.

[3] Applicants, who meet qualification requirements but not selected within the available seats, may admitted if they are willing pay tuition fees and study without scholarships.

4. Cost of Study

The tuition fees for one year is Rs.150,000 for both PhD and Master's programs. The University will bear the cost of laboratory consumables associated with the study. The students will be required to bear the cost of field work associated with their transportation and lodging. However, such costs may be borne by the University if such expenses can be financed by funding for the research from sponsors.

To encourage only committed students to get admitted and handle the University property with care, the following non-tuition fees will be charged: registration fee of Rs.25,000; refundable deposit of Rs.50,000, which will be refunded on completion of the study; and refundable security deposit of Rs.25,000 towards the compensation for possible damages to the University property associated with the negligence.

5. Nature of Study

The MAS programs are research-oriented. Both PhD and MAS programs require full-time attendance. Only those candidates who would be able to devote full-time for the study should apply. Students are not allowed to be engaged in part-time jobs.

For productive studies at the University students are advised to rent rooms at Chitlang. Almost all students stay at Chitlang. Limited paid seats are available for students who wish to commute to the University using the office shuttle service to and from Chitlang. But the seats are not guaranteed.

6. Admission Schedule

Date	Event
June 11, 2025	Call for applications
June 13 – July 9	Application period
July 14	Shortlist publication
July 20 - 22	Written examinations and interview
July 25	Publication of admission list
July 27 – August 1	Admission period
November 23	Orientation, course registration, and start of instruction

Applications may be submitted after the deadline also. Applications received after the deadline till November 5, 2025 will be considered if all seats are not filled based on the applications submitted within the deadline. Financial assistance remaining unused after the admission under this notice will be available for students selected from the subsequent admission cycles. Interested students should bear in mind that the chances of availing the financial assistance would be higher for those who apply in response to this notice.

The supplementary Call for Applications with information about the admission schedule, remaining seats and financial assistance available for applications received after the deadline shall be published on August 2, 2025.

7. Eligibility

- Master's degree in Engineering/Technology/Science or other relevant fields from recognized universities with CGPA of 3.0/4.0 (or international equivalent) for PhD for Sustainable and Resilient Infrastructure program.
- Master's degree in Engineering/Technology/Science/Architecture or other relevant fields from recognized universities with CGPA of 3.0/4.0 (or international equivalent) for PhD except for Sustainable and Resilient Infrastructure program.
- Four-year Bachelor's in Science/Engineering/Technology or other relevant fields from recognized universities with CGPA of 2.75 out of 4.0 (or international equivalent) for all MAS programs except Sustainable and Resilient Infrastructure.
- Four-year Bachelor's degree in Engineering/ Technology/Science/Architecture from recognized universities with CGPA of 2.75/4.0 (or international equivalent) or Master's degree in Management, Economics, Sociology, and Tourism and Hospitality and other relevant fields with CGPA of 2.75/4.0 (or international equivalent) for MAS in Sustainable and Resilient Infrastructure program.

Note: Refer to the footnote for exceptions to the CGPA thresholds.*

Research topics which may be offered to students are presented in Attachment 3. Particular qualifications and additional skills may be preferable for particular research topics, which will be considered while selecting students.

8. Application Submission

Online application form is available at https://mbust.bbnepal.com/ and MBUST website http://mbust.edu.np. Applications must be submitted online. Applications are open to all nationalities. Applications in hard copies or scanned copies shall not be entertained.

Bank details to deposit application fee:

MADAN BHANDARI UNIVERSITY OF SCIENCE AND TECHNOLOGY

A/C No. 01800106701870000001

Nepal Bank Limited

Gabahal, Lalitpur Branch, Lalitpur

The payment can also be made using the following QR code below.

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*The rigid enforcement of the eligibility criteria related to CGPA may lead to the exclusion of otherwise qualified candidates. Therefore, exceptions may be made to the CGPA criteria if the University determines that a particular candidate who does not meet the CGPA threshold demonstrates exceptional merit, making them a strong potential candidate for the program. Such candidates may be shortlisted. In light of this, students who do not meet the stated CGPA thresholds may still apply, with the clear understanding that the University may ultimately determine them to be ineligible.

In case of difficulties in applying online, please contact:

Name: Saroj Joshi

Email Id: jsaroj284@gmail.com

Contact number: 9868795646

For queries related to programs please contact:

Program/Degree	Name	Mobile	Email
OA	Dr. Bhushan Shrestha	9810198318	bhushan.shrestha@mbust.edu.np
FBMSE	Dr. Sabina Shrestha	9841270278	sabina.shrestha@mbust.edu.np
SRI	Dr. Kishor Timsina	9849147792	kishor.timsina@mbust.edu.np
AI	Dr. Rajib Subba	9705048776	rajib.subba@mbust.edu.np

Students submitting applications from outside Nepal do not have to submit the application fee with the application form. However, they will have to pay it at the time of admission if they are admitted.

9. Documents and Information to be Submitted

Mandatory documents

1. Academic transcripts
    a. Bachelor's level
    b. Secondary school transcript (grade 12)
    c. Secondary Education Examination transcript (grade 10)
2. Research statement (Attachment 4)
3. Personal statement (Attachment 5)
4. Citizenship certificate/Passport
5. CV
6. Bank voucher/evidence of the deposition of application fee of Rs. 500

Optional documents

1. Publication list
2. Experience certificates
3. Additional transcripts
4. Other documents (not more than five)

10. Selection of Students

Criteria for Selection

The students will be selected based on the following criteria.

Criteria	Weightage, %
Transcripts	20
Research statement	10
Personal statement	15
Special skills	10
References	10
Essay writing	10
Interview	25
Total	**100**

Students should submit the names of three referees who can provide the firsthand reference on the students. The students should name only those referees who agree to be interviewed by the University.

Students are encouraged to submit documents showing special achievements/skills which could enhance the chances of their success in the studies.

Students with publication records in peer-reviewed journals and conferences will have an advantage in the selection. Therefore, students are encouraged to provide a list of publications (Attachment 6).

Essay writing and interview will take place at the University premises at Chitlang.

Shortlisting

Students will be shortlisted based on the cumulative score of the first five criteria. The number of students shortlisted will not exceed the double of the planned intake.

Final selection

The final selection for the admission will be based on the cumulative score of all criteria.

11. Pledge

The selected students shall be required to sign a pledge committing, among others, to complete the study, be employed or self-employed in Nepal or serve at the MBUST or an institution assigned by the MBUST in lieu of scholarship and fee waiver provided at the time of admission.

12. Consultations

Students will be able to consult relevant faculty members and administrative staff for any enquiries they have every working day at 4pm. They may join an online meeting using the link below.

Link: https://teams.microsoft.com/l/meetup-join/19%3ameeting_YzUyMDI4ZTAtYzhlNi00ZDIyLWFlZjAtNTY1OTc0MjIyNDVk%40thread.v2/0?context=%7b%22Tid%22%3a%22886e4291-d795-4829-8c34-d2ce825102ad%22%2c%22Oid%22%3a%22b35aa0f7-2bc3-40bc-ac10-0ec622db9195%22%7d
Meeting ID: 410 061 886 920
Passcode: NM6Bn3u7

Director
Institute of Applied Sciences

Attachment 1

Program Structure

A. Organic Agriculture

PhD
Duration of the Course: 3 years

Semester I				**Semester II**		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**
OA-CR-501	Soil Fertility and Soil Ecology in Organic Agriculture	4		OA-CR-550 Or OA-CR-551	Plant Protection in Organic Agricultural System Or Animal Production in Organic Agriculture	4
OA-CR-502	Organic Agricultural Food Systems and Agroecology	4		GC-NC-550	Entrepreneurship, Scientific Communication and Leadership (4 hours)	0
GC-CR-501	Development Policy	3		OA-EL-561~571	One course from the list related to thesis	4
GC-CR-502	Research Methodology and Data Mining	3		OA-TH-999	Thesis	4
Semester III				**Semester IV**		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**

OA-EL-561~571	One course from the list related to thesis	4		OA-TH-999	Thesis	12
OA-TH-999	Thesis	12				
OA-NC-601	Technology Management (3 hours)	0				
Semester V				**Semester VI**		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**
OA-TH-999	Thesis	11		OA-TH-999	Thesis	11
Total credit hours for thesis = 50; total credit hours for core and elective courses not less than 25.						

MAS
Duration of the Course: 2 years

Semester I				**Semester II**		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**
OA-CR-501	Soil Fertility and Soil Ecology in Organic Agriculture	4		OA-CR-550 Or OA-CR-551	Plant Protection in Organic Agricultural System Or Animal Production in Organic Agriculture	4
OA-CR-502	Organic Agricultural Food systems and Agroecology	4		GC-NC-550	Entrepreneurship, Scientific Communication, and Leadership (4 hours)	0

GC-CR-501	Development Policy	3		OA-EL-561~571	One course from the list related to thesis	4
GC-CR-502	Research Methodology and Data Mining	3		OA-TH-699	Thesis	4
Semester III				**Semester IV**		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**
OA-NC-601	Technology Management (3 hours)	0				
OA-TH-699	Thesis	13		OA-TH-699	Thesis	13
Total credit hours for thesis = 30; total credit hours for core and elective courses not less than 20.						

Elective Courses

No.	Course Code	Course Title	Credit
1	OA-EL-561	Analysis and Management of Sustainable Organic Production Chain	4
2	OA-EL-562	Organic Fruit Production	4
3	OA-EL-563	Organic Production of Vegetables and Ornamentals	4
4	OA-EL-564	Bioinoculants in Organic Agriculture	4
5	OA-EL-565	Animal Nutrition, Fodder Production and Pasture Management	4
6	OA-EL-566	Post-Harvest Technology in Organic Agriculture	4
7	OA-EL-567	Marketing and Financial Management in Organic Agriculture Sector	4
8	OA-EL-568	Organic Certification	4
9	OA-EL-569	Spawn Production and Mushroom Cultivation	4

10	OA-El-570	Biological Control	4
11	OA-EL-571	Production Technology of Beverage (Tea &Coffee) and Spice Crops (Cardamom, Zinger, Turmeric) etc.	4
12	OA -EL-572	Crop Genome Editing	4
13	OA -EL-573	Molecular Biotechnology in Agriculture	4

B. Forest Biomaterials Science and Engineering

PhD

Duration of the Course: 3 years

Semester I				**Semester II**		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**
FB-CR-501	Fundamentals of Forest Biomaterials Science	4		FB-CR-550	Advanced Topics in Sustainable Bioproducts	4
FB-CR-502	Chemistry of Biomaterials	4		FB-TH-999	Thesis	4
GC-CR-501	Development Policy	3		GC-NC-550	Entrepreneurship, Scientific Communication and Leadership (4 hours)	0
GC-CR-502	Research Methodology and Data Mining	3		FB-NC-551	Forest Conservation and Management (3 hours)	0
				Elective I	One course from the list related to thesis	4
Semester III				**Semester IV**		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**
Elective II	One course from the list related to thesis	4		FB-TH-999	Thesis	12
FB-TH-999	Thesis	12				
Semester V				**Semester VI**		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**

FB-TH-999	Thesis	11		FB-TH-999	Thesis	11
Total credit hours for thesis = 50; total credit hours for core and elective courses not less than 25.						

MAS

Duration of the Course: 2 years

Semester I				**Semester II**		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**
FB-CR-501	Fundamentals of Forest Biomaterials Science	4		FB-CR-550	Advanced Topics in Sustainable Bioproducts	4
FB-CR-502	Chemistry of Biomaterials	4		FB-TH-699	Thesis	4
GC-CR-501	Development Policy	3		GC-NC-550	Entrepreneurship, Scientific Communication and Leadership (4 hours)	0
GC-CR-502	Research Methodology and Data Mining	3		FB-NC-551	Forest Conservation and Management (3 hours)	0
				Elective I	One course from the list related to thesis	4
Semester III				**Semester IV**		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**
FB-TH-699	Thesis	13		FB-TH-699	Thesis	13

Total credit hours for thesis = 30; total credit hours for core and elective courses not less than 20.

Elective Courses

No.	Course Code	Course Title	Credit
1	FB-EL-561	Mechanics of Biomaterials and Bio-composites	4
2	FB-EL-562	Bonding and Adhesion Sciences and Technology	4
3	FB-EL-563	Wood Drying, Grading, Finishing, Treatment, Seasoning and Protection	4
4	FB-EL-564	Non-timber Forest Products Processing and Value Addition	4
5	FB-EL-565	Extraction and Characterization of Essential Oils and Secondary Metabolites	4
6	FB-EL-566	Dendro-wood Anatomy and its Application	4
7	FB-EL-567	Bioenergy, Bio-carbon, and Biorefinery	4
8	FB-EL-568	Biological Treatment and Conversion of Biomass	4
9	FB-EL-569	Utilization of Forest Products (such as Bamboo etc.) and other Non-wood Natural Materials	4
10	FB-EL-570	Engineered Design and Construction	4
11	FB-EL-571	Conservation of Landscape and Biodiversity	4
12	FB-EL-572	Rainwater Discharge and Forest Management	4
13	FB-EL-573	Advanced Biomaterial Development and Protection	4
14	FB-EL-574	Environmental Life Cycle Assessment and Thinking	4
15	FB-EL-575	Bamboo engineering	4
16	FB-EL-576	Utilization of non-timber natural materials, advanced biomaterial development and protection	4
17	FB-EL-577	Applied element modeling of structures	4

C. Digital Technology

PhD in Artificial Intelligence

Duration of the course: 3 years

Semester I				**Semester II**		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**
AI-CR-501	Machine learning	3		AI-CR-550	Computer Vision	3
AI-CR-502	Practical Data Science with Python	2		AI-CR-551	Natural Language Processing	3
AI-CR-503	Project in People-Centred AI	2		AI-EL-561~570	Elective 1	2
AI-CR-504	Research Methods for Intelligent Systems	1		GC-CR-501	Development Policy	3
GC-NC-550	Entrepreneurship, Scientific Communication and Leadership (4 hours)	0		AI-NC-553	Case Studies in Ethics and Fairness in AI (1 hour)	0
				AI-TH-699	Thesis	4
Semester III				**Semester IV**		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**
AI-CR-601	Advanced Topics in Deep Learning	3		AI-TH-699	Thesis	12
AI-EL-561~570	Elective II	2		AI-EL-561~570	Elective III	2
AI-TH-699	Thesis	12				
Semester V				**Semester VI**		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**
AI-TH-699	Thesis	11		AI-TH-699	Thesis	11
Total credit hours for thesis = 50; total credit hours for core and elective courses not less than 25.						

Elective Courses

No.	Course Code	Course Title	Credit
1	AI-EL-561	Reinforcement Learning	2
2	AI-EL-562	Artificial Intelligence and Multi-Agent Systems	2
3	AI-EL-563	Graphical Models	2
4	AI-EL-564	AI for Agriculture	2
5	AI-EL-565	Data, Algorithm and Society	2
6	AI-EL-566	AI and Internet of Things	2
7	AI-EL-567	Applied Health Care and AI	2
8	AI-EL-568	Industrial AI and Automation	2
9	AI-EL-569	Social Media Analysis for Social Good	2
10	AI-EL-570	Signal processing for music information retrieval	2

D. Sustainable and Resilient Infrastructure Program

PhD

Duration of the Course: 3 years

Semester I				Semester II		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**
SRI-CR-501	Sustainable and Resilient Development Principles and Practices	3		SRI-EL-xxx	Elective II	3
SRI-CR-502	Fundamentals of Tourism	3		SRI-EL-xxx	Elective III	3
SRI-CR-503	Research methodology and Data Mining	3		GC-NC-551	Entrepreneurship, and Leadership	0
GC-NC-501	Science Policy Communication	0		SRI-EL-xxx	Elective IV	2
SRI-EL-xxx	Elective I	3		SRI-TH-699	Thesis	4 Th

Semester I				Semester II		
Course Code	**Course Title**	**Credit**		**Course Code**	**Course Title**	**Credit**
Semester III				Semester IV		
Course Code	Course Title	Credit		Course Code	Course Title	Credit
SRI-EL-xxx	Elective V	3		SRI-EL-xxx	Elective VI	3
SRI-TH-699	Thesis	10 Th		SRI-TH-699	Thesis	10 Th
Semester V				Semester VI		
Course Code	Course Title	Credit		Course Code	Course Title	Credit
SRI-TH-699	Thesis	13 Th		SRI-TH-699	Thesis	13 Th
	Total	13 Th			Total	13 Th
Total credit hours for thesis = 50; total credit hours for core and elective courses not less than 25.						

MAS

Duration of the Course: 2 years

Semester I				Semester II		
Course Code	Course Title	Credit		Course Code	Course Title	Credit
SRI-CR-501	Sustainable and Resilient Development Principles and Practices	3		SRI-EL-xxx	Elective II	3
SRI-CR-502	Fundamentals of Tourism	3		SRI-EL-xxx	Elective III	3
SRI-CR-503	Research methodology and Data Mining	3		GC-NC-551	Entrepreneurship, and Leadership	0
GC-NC-501	Science Policy Communication	0		SRI-EL-xxx	Elective IV	2
SRI-EL-xxx	Elective I	3		SRI-TH-699	Thesis	4 Th
Semester III				Semester IV		
Course Code	Course Title	Credit		Course Code	Course Title	Credit
SRI-TH-699	Thesis	13 Th		SRI-TH-699	Thesis	13 Th
	Total	13 Th			Total	13 Th

Total credit hours for thesis = 30; total credit hours for core and elective courses not less than 20.

Elective Courses

Students will select 4 electives for the MAS program and 6 electives for the PhD program, aligning their choices with the focus of their research thesis from the following:

Tourism related

No.	Course Code	Course Title	Credit
1	SRI-EL-561	Transport for Tourism	3
2	SRI-EL-562	Tourism Policy and Process	3
3	SRI-EL-563	Adventure and Mountain Tourism	3
4	SRI-EL-564	Water-based Tourism Infrastructure	3
5	SRI-EL-565	Cultural Tourism Infrastructure	3
6	SRI-EL-566	Eco-Tourism Infrastructure	3
7	SRI-EL-567	Community-based Tourism	3
8	SRI-EL-568	Hiking and Trekking Trail Infrastructure	3
9	SRI-EL-569	Social Dimensions of Tourism	3
10	SRI-EL-570	Economics of Tourism	3

Architecture and planning including landscaping and master planning

No.	Course Code	Course Title	Credit
1	SRI-EL-571	Rural Housing for Home-stays	3
2	SRI-EL-572	Traditional and Heritage Architecture	3
3	SRI-EL-573	Rural Tourism Planning	3
4	SRI-EL-574	Energy and Climate change	3

Structural analysis and design

No.	Course Code	Course Title	Credit
1	SRI-EL-575	Design of Masonry Structures	3
2	SRI-EL-576	Design of Timber Structures	3
3	SRI-EL-577	Design of Bamboo Structures	3
4	SRI-EL-578	Advanced Structural Dynamics and Vibration Control	3
5	SRI-EL-579	Finite Element Modelling of Structures	3
6	SRI-EL-580	Applied Element Modelling of Structures	3
7	SRI-EL-581	Computer Methods for Structural Engineering	3
8	SRI-EL-582	Structural Identification and Health Monitoring	3
9	SRI-EL-583	Structural Evaluation and Retrofitting Methods for Existing Structures	3
10	SRI-EL-584	Earthquake and Wind Resistant Design	3
11	SRI-EL-585	Experimental Methods in Structural Engineering	3

Project/ Infrastructural management

No.	Course Code	Course Title	Credit
1	SRI-EL-586	Digital Tools and Technologies for Infrastructure Planning	3
2	SRI-EL-587	Project Management for Tourism Infrastructure	3

Attachment 2

Resource Persons

A. Organic Agriculture

No.	Name	Main Designation	Affiliation	MBUST Affiliation	Previous Affiliation
1	Dr. Bhushan Shrestha	Associate Professor, Program Coordinator	Madan Bhandari University of Science and Technology (MBUST)		
2	Dr. Anupama Shrestha	Assistant Professor	MBUST		
3	Dr. Rameshwar Rai			Visiting faculty member	
4	Dr. Sarbesh Das Dangol	Assistant Professor	MBUST		
5	Dr. Sabin Basi	Assistant Professor	MBUST		
6	Prof. Kentaro Hosaka	Curator, Mycology	National Museum of Nature and Sciences, Japan	Thesis Co-supervisor, Visiting Professor	
7	Prof. Park Duck Hwan	Professor		Thesis Co-supervisor, Visiting Professor	
8	Dr. Bhaneswar Pokharel		Organic Agriculture Expert and organic farm proprietor	Visiting Faculty Member, Co-supervisor	
9	Dr. Mahesh Kumar Adhikari		Mycology Expert	Thesis Supervisory Group (TSG) Expert	Member-Secretary, National Academy of

					Science and Technology
10	Dr. Hom Nath Giri			Visiting faculty, Co-supervisor	
11	Prof. Ananda Shova Tamrakar			Visiting Faculty and Co-Supervisor	Tribhuvan University
12	Dr. Hira Kaji Manandhar	Executive Chairperson	Nepal Plant Disease and Agro Associates Pvt. Ltd.	Chairperson, Advisory Group, Organic Agriculture Program, Visiting Faculty Member and Co-Supervisor	National Agricultural Research Council (NARC)
13	Dr. Samudra Lal Joshi			Visiting Faculty Member and Co-Supervisor	
14	Dr. Budhhi Ratna Khadge			Visiting Faculty Member and Co-Supervisor	
15	Prof. BYUNG-TAEK OH	Agronomy	Division of Biotechnology, College of Environmental & Bioresource Sciences Jeonbuk National University	Visiting Faculty and Co-Supervisor	
16	Prof. S. Kamalakannan	Environmental Microbiology and Biotechnology	Division of Biotechnology College of Environmental and Bioresource Sciences, Jeonbuk National	Visiting Faculty and Co-Supervisor	

			University – Iksan Campus		
17	Dr. Ni Luh Suriani	Biopesticide	Department of Biology, Mathematics and Natural Sciences, Udayana University, Bali, Indonesia	Visiting Faculty and Co-Supervisor	
18	Dr. James Canham	Genomics	Entrepreneur-In-Residence at The Sainsbury Laboratory, Norwich, getGenome	Visiting Faculty	
19	Dr. Surendra Lal Shrestha	Horticulturist		Visiting Faculty and Co-Supervisor	NARC
20	Dr. Balkrishna Ghimire	Assistant Professor	Agriculture Forestry University (AFU)	Visiting Faculty and Co-Supervision	
21	Dr. Mina Devkota	Senior Agronomist	ICARDA/Morocco	Visiting Faculty and Co-Supervision	
22	Dr. Shova Shrestha	Soil Scientist	Soil Division/ NARC	Co-Supervision	
23	Dr. Suchit P. Shrestha	Crop Modelling and Soil Scientist	Research Director, KARMA Group of industries	Co-Supervision	
23	Dr. Zahirul Mohammad Islam	Assistant Professor	Gacheon University, Korea	Visiting Faculty and Co-Supervision	
24	Dr. Shimeles Tilahun	Assistant Professor	Jimma University, Ethiopia	Visiting Faculty and External Expert	

B. Forest Biomaterials Science and Engineering

No.	Name	Main Designation	Affiliation	MBUST Affiliation	Previous Affiliation
1	Prof. Ning Yan	Full Professor	Department of Chemical Engineering and Applied Chemistry, University of Toronto, Canada	Forest Biomaterials Science and Engineering	
2	Prof. Hom Nath Dhakal	Full Professor	Professor of Mechanical Engineering, University of Portsmouth, UK. Director of the Portsmouth Centre for Advanced Materials and Manufacturing	Honorary Chair of Sustainable Biomaterials	
3	Dr. Bishnu Acharya	Associate Professor	Saskatchewan Ministry of Agriculture Chair in Bioprocess Engineering & Associate Professor Chemical and Biological Engineering, University of Saskatchewan, Canada	Honorary Visiting Professor	
4	Dr. Sabina Shrestha	Associate Professor	MBUST		Post-doctoral Fellow Kyung Hee University, S. Korea Post-doctoral Fellow Jeju National University, S. Korea
5	Dr. Sudip Pandey	Assistant Professor	MBUST		Post-doctoral fellow in university of Padova, Research fellow in WSL, Zurich, Switzerland

6	Dr. Saurabha Bhattarai	Assistant Professor	MBUST		Research Fellow, Nepal Academy of Science and Technology
7	Dr. Kishor Timsina	Assistant Professor	MBUST		Coordinator, National Society of Earthquake Technology-Nepal
8	Dr. Jhashanath Adhikari Subin	Post-doctoral Fellow	MBUST		Post-doctoral Fellow, Research Center for Applied Science and Technology, Tribhuvan University

C. Sustainable and Resilient Infrastructure

No.	Name	Main Designation	Affiliation	MBUST Affiliation	Previous Affiliation
1	Dr. Netra Chhetri	Professor	Arizona State University's School for the Future of Innovation in Society	Academic Council Member	
2	Dr. Neel Kamal Chapagain	Professor	Centre for Heritage Management, Ahmedabad University		
3	Dr. Kirti Kusum Joshi	Director	Institute of Applied Sciences, MBUST		Dean, Lumbini Technological University
4	Dr. Kishor Timsina	Assistant Professor	MBUST	Asst. Professor	Deputy Program Manager, National Society for Earthquake Technology Nepal
5	Mr. Rabi Jung Pandey			Visiting Professor	

6	Dr. Chaitanya Krishna Sudarshan	Assistant Professor	Asian Institute of Technology (AIT)	Thesis Supervisor	Project Assistant Professor, The University of Tokyo

D. Digital Technology (Artificial Intelligence)

No.	Name	Main Designation	Affiliation	MBUST Affiliation	Previous Affiliation
1	Prof. Suresh Manandhar		Wiseyak	Honorary Chair for Artificial Intelligence	Professor, University of York
2	Prof. Bishnu Prasad Gautam	Full Professor	Department of Applied Information Engineering, Suwa University of Science	Honorary Visiting Professor	
3	Dr. Ved Prasad Kafle, ,	Research Manager	National Institute of Information and Communications Technology, Japan; Visiting Professor, The University of Electro-Communications, Japan	Visiting Faculty	
4	Dr. Rajib Subba	Assistant Professor and Coordinator of DT Program	Digital Technology Program, MBUST		Adjunct Associate Professor, University of Agder, Norway and Visiting Faculty, Westcliff University, USA
5	Dr. Ritu Raj Lamsal	Assistant Professor	Digital Technology Program, MBUST		
6	Dr. Rijan Maharjan		Phutung Research Institute	Adjunct Assistant Professor	

7	Dr. Bhuwan Bhattarai			Visiting Faculty Member	
8	Dr. Manoj Acharya			Visiting Faculty Member	
9	Dr. Shree Krishna Acharya	Associate Lecturer (part-time)	CCT College, Ireland	Visiting Faculty Member	

Attachment 3

Thesis Topics

A. Organic Agriculture
PhD

No.	Topic	Expected Output/Outcome	Preferred Academic Qualifications	Preferred Special Skills
1	Lactic Acid Bacteria as a Potential Bio-pesticides and Bio-fertilizer	Enhanced crop protection and improved soil fertility using organic fertilizers and pesticides	Master's degree in agricultural science or related discipline	
2	Characterization of Microbial Diversity and Nutrient Content of Compost Prepared Using Local Resources	Optimized compost quality and enriched soil health, promoting local agriculture	Master's degree in agricultural science or related discipline	Knowledge of statistical tools, laboratory skills and bioinformatics
3	Use of multiplexed guided RNAs to develop blast-resistant rice crops	Increased blast resistance and improved yields, strengthening rice production	Master's degree in agricultural science or related discipline	Knowledge of CRISPR, multiplexed gRNA, rice genetics, blast resistance, bioinformatics, tissue culture
4	Microtuber production for enhanced potato plantation	Improved potato quality and increased yield, boosting productivity	Master's degree in agricultural science or related discipline	Knowledge of tissue culture and in vitro techniques
5	Value chain development in kiwifruit	Enhanced kiwifruit quality and optimized supply chain, increasing market value.	Master's degree in agricultural science or related discipline	Knowledge of agri-economics, postharvest management, and supply chain
6.	Protected cultivation of high-value vegetable crops	Improved crop yield and extended growing season, leading to increase in farmers' income	Master's degree in agricultural science or related discipline	Knowledge of agri-economics, nutrients content calculations of fertilizers, fertigation

MAS

No.	Topic	Expected Output/Outcome	Preferred Academic Qualifications	Preferred Special Skills
1	Characterization of phosphate solubilizing bacteria with anti *Ralstonia* effect	Improved soil and crop health	Bachelor's degree in agricultural science, microbiology or related discipline	Knowledge of statistical tools
2	Genetic Characterization of clubroot pathogens of Nepal	Improved disease management system	Bachelor's degree in agricultural science, microbiology or related discipline	Knowledge of statistical tools
3	Plant Growth Promoting Effect of Rhizobacteria and Vermicompost in Different Vegetables	Improved vegetable growth, enhanced soil fertility, and increased crop productivity	Bachelor's degree in agricultural science or related discipline	Knowledge of statistical tools
4	Isolation and characterization of nematodes in Kiwi fruit	Improved disease management system in kiwi crops	Bachelor's degree in agricultural science, horticultural science, or related discipline	Knowledge of statistical tools
5	Effectiveness of Organic Community Supported Agriculture in Chitlang	Improved quality and production of organic products, strengthening local farming and enhancing local economy	Bachelor's degree in agricultural science or related discipline	Knowledge of statistical tools
6	Dynamics of organic farming on soil health and food quality	Enhanced soil health and improved food quality, promoting sustainable farming.	Bachelor's degree in agricultural science, food technology or related discipline	Laboratory skills
7	Varietal development for organic production	Developed varieties optimized for organic farming and higher yields	Bachelor's degree in agricultural science or related discipline	Knowledge of plant breeding, statistics, plant pathology
8	Soil fertility mapping for precise nutrient management in Chitlang	Improved nutrient management, boosting yields	Bachelor's degree in agricultural science or related discipline	Knowledge of GIS, crop modelling
9	Production of polymerase enzymes in molecular research of agriculture	Contribution to pathogen detection and quality control in the agro-food industry	Bachelor's degree in biotechnology, molecular biology, or agricultural sciences	Knowledge of molecular biology, data analysis.

10	Using different light colors in optimal growth of Jumli Marshi	Optimized Jumli Marshi growth using specific light color treatments	Bachelor's degree in agricultural science and engineering or related discipline	Knowledge of plant physiology, data interpretation
11	Genetic transformation of potatoes cultivated in Nepal	Increased potato yield	Bachelor's degree in agricultural science or related discipline	Knowledge of gene editing, plant tissue culture
12	Quality management of kiwifruit- impact of pruning (vines), thining(flowers/fruits) for quality and shelf life of kiwifruit	Improved kiwifruit quality and shelf life	Bachelor's degree in agricultural science and engineering, horticultural science, or related discipline	Knowledge of data analysis
13	Initiation and development of floral primordia in kiwifruit	Increased kiwi production	Bachelor's degree in agricultural science, horticultural science, or related discipline	Microscope handling
14	Post-harvest management and vase life of cut flowers	Extended cut flower vase life, leading to economic benefits to nursery owners	Bachelor's degree in agricultural science and engineering, floricultural science, or related discipline	Knowledge of floriculture
15	Biological control of disease for organic mushroom farming	Promotion of pesticide-free mushroom	Bachelor's degree in agricultural science or related discipline	Knowledge of plant pathology, identification and characterization of beneficial microorganisms, their mechanisms of action
16	Biological control of insect pests for organic mushroom farming	Promotion of pesticide-free mushroom	Bachelor's degree in agricultural science or related discipline	Knowledge of pest identification, biology of pests and their natural enemies, biological control strategies etc., entomology
17	Post-harvest management of cultivated	Increased marketing of fresh mushrooms	Bachelor's degree in agricultural science and engineering or	Knowledge of appropriate preservation

	mushrooms to enhance shelf-life		mechanical engineering related discipline	techniques and packaging methods, understanding mushroom quality etc.
18	Optimization of substrate for higher yield of mushroom	Increased mushroom yield	Bachelor's degree in agricultural science or related discipline	Knowledge of substrate components, composting and pasteurization, understanding of optimum C/N ratio and other factors for mushroom growth
19	Application of mycorrhizal fungi to increase soil fertility and crop yield	Increased soil fertility, increased crop yield	Bachelor's degree in agricultural science or related discipline	Knowledge of soil and plant health, selection of appropriate endomycorrhizal species and their correct application
20	Impact of agroecological practices on quality and shelf life of kiwifruit	Improved kiwifruit quality and extended shelf life	Bachelor's degree in agricultural science, horticultural science, or related discipline	Knowledge of post-harvest technology

B. Forest Biomaterials Science and Engineering

PhD

No.	Topic	Expected Economic Impact	Preferred Academic Qualifications	Preferred Special Skills
1	Mechanical Characterization of Common Nepalese Timber Species and Performance Analysis (2 hardwood and 2 softwood species)	• Test the strength and durability of common timber species and their performance according to different climate	Engineering (structural, Mechanical), Forestry, Materials Science or Applied Physics (with Lab experience), Wood Science and technology	Basic knowledge on wood anatomical features and their identification, Knowledge on mechanical testing and instruments handling Laboratory skills on sample preparation would be advantageous Skills on R studio/Python,

				GIS, Remote sensing will be advantageous.
2	Sustainable Wool Alternative from *Miscanthus nepalensis*: A green innovation for Textile Industry	• Extract high-quality natural fibers from *Miscanthus nepalensis and evaluate* potential applications of the fibers as insulating materials.	Biotechnology, Chemistry, Forestry, Environmental Science, Microbiology, Agriculture	Wet laboratory skills (for fiber extraction - i.e., Handling, biological, chemical and physical substances), Knowledge on statistical data and skills on R Studio
3	Phytochemical analysis of essential oils used in Ayurvedic aromatherapy and microencapsulation	• Quality essential oil seeking aromatherapy spa and export of essential oil from Nepal	Chemistry, Botany, Biotechnology, Microbiology, Agriculture	Phytochemical screening and chromatographic techniques
4	Characterization and separation of components of *Salvia rosmarinus* L. for bio-industrial (Food & Cosmetics) applications	• Identification of the chemotype of rosemary with high essential oil to promote its farming • Technology applicable for separation of antioxidant components for use as food preservatives. Topical formulations of skin care products for skin pathogens	Chemistry, Botany, Microbiology, Agriculture, Biotechnology	Phytochemical chromatographic separation
5	Formulation and stability analysis of perfumes using aromatic extracts of Nepalese herbal materials	• Hydro distilled essential oils are exported from Nepal but their use in perfume production in industrial scale in Nepal is lacking • Production of perfume with aromatic components characterized can	Chemistry, Botany, Biotechnology, Microbiology, Agriculture	Phytochemical screening and chromatographic techniques

		help in products with distinct notes and quality assurance • Variation in quality of essential oils which impart different notes. • Controlled release of essential oil		

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	Research Topics	**Expected Economic Impacts**	**Preferred Academic Qualification**	**Preferred Skills**
1	Impact of Seasoning Methods on Moisture Content and Dimensional Stability of Timber in Nepal (*Pinus roxburghii* (Pine) and *Dalbergia sisso* (Sisso))	• Compare the effects of different seasoning methods on moisture content and dimensional stability of common Nepalese timber species	Wood Science, Forestry, Agriculture, Chemistry, Physics	Knowledge on wood anatomical features and their identification, Skills on R studio/Python, GIS and remote sensing.
2	Anatomical Variation and Mechanical Performance of Sal (*Shorea robusta*)	• Investigate how anatomical traits of Sal (*Shorea robusta*) vary across Nepal's eco-climatic zones and how these variations influence mechanical performance, in order to identify zones with optimal wood properties. • Enable targeted harvesting, reduce processing waste, improve product quality, and boost revenues for Nepal's timber	Forestry, Botany, Engineering, Biotech, Agriculture, Environment	Basic Knowledge in tree physiology, Experience of working in lab and field visit Skills on R Studio and big data analysis. GIS knowledge will be advantageous

		industry and rural communities		
3	Understanding Growth Patterns and Resin Deposition in Agarwood Through Tree-Ring Analysis	• Investigate the relationship between tree-ring growth patterns and resin deposition in agarwood-producing species for better	Biotechnology, Environmental Science, Agriculture, Zoology, Microbiology	Basic knowledge on wood anatomical features and their identification Wet Laboratory skills on R studio/Python, GIS, Remote sensing will be advantageous.
4	Evaluating the Potential of Biochar to Mitigate Soil Acidification in Nepalese Agricultural Lands	• Increased Agricultural productivity and farm income by reducing the acidity in soil	Agriculture Science, Environmental Science, Biotechnology, Botany, Microbiology	Knowledge on Experimental design and field trial, Data analysis and interpretation, Basic laboratory knowledge
5	Effects of Seasonal Weather Patterns on the Mechanical Properties of Bamboo	• Improved selection and harvest timing • Increased value in bamboo-based construction and innovation	Engineering, Environmental Science, Biotechnology, Agriculture, Botany	Previous knowledge on mechanical testing
6	Major Components of Ginger Varieties from Nepal - Characterization and Application for Skin Care Products and a Remedy for Acne Treatment	• Identification of chemotypic variation in Nepal are citral/α-zingiberene chemotype or geraniol-rich chemotype • Inhibitory effect of major compounds of ginger on skin pathogens	Agriculture, Botany, Biotechnology, Chemistry	Microbial assay skills
7	Optimization of herbal extract for cosmetic formulations and assessment of antioxidant and *in* skin protective properties	• Integration of herbal extract and their formulation are in demand in personal care segment	Agriculture, Botany, Biotechnology, Chemistry	Microbial assay skills
8	*In silico* assessment of medicinal plant extracts for the exploration of	• Value added product from medicinal plants of	Chemistry, Botany, Biotechnology	Computational chemistry skills

	therapeutic potential (immunomodulatory, antimalarial, antiviral, antidiabetic and antibacterial)	Nepal (nutraceuticals)		
9	Estimation of mechanical and electronic properties of fibrous material and its molecular-level analysis through computational simulation (molecular mechanics, DFT, and beyond)	• Development of sturdy construction materials employed for various purposes	Physics, Material Science, Engineering	Computational chemistry skills
10	Optimization of biocompatible materials by first principle simulation	• Effective and low-cost medical products	Physics, Biochemistry	Computational chemistry skills
11	Analysis of flavor and colorant compounds of turmeric cultivated in Nepal	• Different processing process makes different grade of turmeric • Evaluation of quality turmeric for export	Chemistry, Botany, Food technology Biotechnology, Microbiology, Agriculture	Phytochemical separation
12	Characterization of herbal material extracts for dermal care	• Skin care products against pathogen of concern in Nepalese population	Chemistry, Botany, Biotechnology, Microbiology, Agriculture	Phytochemical screening and chromatographic techniques
13	Development of high-performance natural fiber composites	• Production of higher-value fiber products • Waste reduction • Employment opportunities in rural areas • Enhanced lab certification and export potential • Environmental sustainability	Chemical Engineering, Chemistry, Biotechnology, material science Botany	Wet lab experience, material testing, knowledge of fiber chemistry
14	Impregnation of nanoparticles into timber and bamboo for enhanced durability	• Increased service life and structural reliability of timber	Chemical Engineering, Chemistry, Biotechnology,	Wet lab experience, Experience in nanomaterial synthesis,

		and bamboo products • Higher market value and competitiveness of treated materials • Reduced maintenance and replacement costs • New business opportunities in nanomaterial production and wood modification	Material Science, Botany, Forestry	microscopy (e.g., SEM, TEM)
15	Development of sustainable adhesives from natural resins	• Development of high-value forest-based products • Promotion of green exports • Rural employment generation • Substitution of synthetic adhesives through domestic production	Chemical Engineering, Chemistry, Biotechnology, Botany	Wet lab experience, polymer chemistry, formulation techniques
16	Carbon nanoparticles for heavy metal removal	• Affordable water treatment solutions • Value-added utilization of bamboo • Practical applications in municipal systems • Environmental and public health protection	Chemical Engineering, Chemistry, Environmental Science and Engineering, Biotechnology, Botany	Wet lab experience, Nanomaterial synthesis, adsorption studies, water quality testing (AAS/ICP-MS)
17	Sustainable energy production from forest waste biomass	• Development of new fuel markets (pellets/briquettes) • Reduced reliance on LPG and firewood • Income generation from biomass in rural areas	Forestry, Chemical Engineering, Chemistry, Environmental science, Mechanical Engineering	Wet lab experience, combustion studies

		• Improved air quality and public health		

C. Digital Technology

PhD in Artificial Intelligence

Thesis Topics

No.	Topic	Expected Output/Outcome	Preferred Academic Qualifications	Preferred Special Skills
1	Fast domain adaptation and test time learning for multilingual mixed language LLMs	Improved LLM architectures for continual learning	Master's degree in AI/DS/CS/CE/CSIT/IT/E&C/E&E and related discipline	Coding, Data Analytics, IOT HW ML LLM
2	Enhancing Small VLMs	Improved foundational VLMs	Master's degree in AI/DS/CS/CE/CSIT/IT/E&C/E&E and related discipline	Multimodal Learning, Few-Shot Adaptation, Domain Transfer
3	Improved reasoning in small VLMs	Improved search and reasoning capabilities within VLMs	Master's degree in AI/DS/CS/CE/CSIT/IT/E&C/E&E and related discipline	Reinforcement Learning (RL) Tree Search & Planning Multi-Agent Learning Neuro-Symbolic Reasoning
4	Smart Mushroom Farming: An Edge AI and IoT-Based Monitoring System	Improved yield and quality of mushroom	Master's degree in AI/DS/CS/CE/CSIT/IT/E&C/E&E and related discipline	Edge AI, IoT Predictive Analytics Automated Alerts

5	AI-Based Plant Disease Diagnosis Using Multimodal Sensing and Visual Learning	Increased yield	Master's degree in AI/DS/CS/CE/CSIT/IT/E&C/E&E and related discipline	AI, IoT, Computer Vision Edge AI
6	AI-Driven secured Crisis Communication Framework for Humanitarian Response	Developed multilingual AI system to support humanitarian coordination in real time	Master's degree in AI/DS/CS/CE/CSIT/IT/E&C/E&E and related discipline	Multilingual NLP Real-time Processing Crisis Informatics Humanitarian AI
7	AI for Post-Disaster Agricultural Recovery Assessment	Drone and sensor-assisted AI system developed for post-disaster recovery and resource distribution	Master's degree in AI/DS/CS/CE/CSIT/IT/E&C/E&E and related discipline	IoT, Sensors, Aerial Imaging Disaster Assessment AI Analytics Resource Optimization
8	AI-Augmented Early Warning Systems for Natural Disasters in Rural Areas	Developed AI models integrated with IoT sensors and geospatial data to provide real-time early warnings	Master's degree in AI/DS/CS/CE/CSIT/IT/E&C/E&E and related discipline	Predictive Modeling IoT Geospatial AI Early Warning Systems
9	Explainable AI for Cybersecurity Risk Governance in Critical Infrastructure	Interpretable AI systems designed for identifying, prioritizing, and mitigating cyber risks in public infrastructure	Master's degree in AI/DS/CS/CE/CSIT/IT/E&C/E&E/Cybersecurity and related discipline	Explainable AI (XAI) Security and Protection

				Policy-Driven Security
10	Adaptive IoT and Machine Learning Framework for Climate-Smart Precision Farming	Intelligent farming system to adaptively manage irrigation, fertilization, and environmental controls developed	Master's degree in AI/DS/CS/CE/CSIT/IT/E&C/E&E and related discipline	AI, IoT, Predictive Analytics Resource Optimization

D. Sustainable and Resilient Infrastructure
PhD

No.	Topic	Expected Output/Outcome	Preferred Academic Qualifications	Preferred Special Skills
1	Mortar optimization in stone masonry structures for enhanced structural performance (Numerical and Experiment study)	• Optimal mortar mix designs using local materials. • Enhanced structural performance and bonding. • Improved seismic resilience of rural stone masonry.	Master in Civil Engineering, Structural/ Earthquake Engineering or related	Structural Dynamics, FEM/DEM/AEM, Material testing experience, Computer Programming skills
2	Advancement of 3D Applied Element Method for numerical analysis of heterogeneous stone masonry structures	• Enhanced 3D AEM algorithms and numerical tool to analayze heterogeneous masonry. • Simulation model capturing stone-mortar interactions. • Improved accuracy in seismic behavior analayis, and failure mechanics of stone masonry structures.	Master in Civil Engineering, Structural/ Earthquake Engineering or related	Structural Dynamics, FEM/DEM/AEM, Computer Programming skills
3	AI-Based Assessment of Earthquake-Induced Structural Damage	• AI models for automatic damage detection from images.	Master in Civil Engineering, Structural/ Earthquake	Structural Dynamics, FEM/DEM/AEM, Computer Programming skills,

No.	Topic	Expected Output/Outcome	Preferred Academic Qualifications	Preferred Special Skills
	Using Post-Disaster Imagery	• Post-disaster structural damage classification system. • Faster and more accurate earthquake damage assessment. • Improved decision-making for emergency response and recovery.	Engineering or related	Knowledge of AI/ machine learning
4	Vibration-based structural health monitoring and LIDAR Point Cloud Analysis of heritage structures	• Integrated vibration and LIDAR-based assessment method. • High-resolution 3D models and dynamic response data. • Accurate health monitoring of heritage structures. • Informed preservation and maintenance strategies.	Master in Civil Engineering, Structural/ Earthquake Engineering or related	Structural Dynamics, FEM/DEM/AEM, Structural Health Monitoring, Computer Programming skills, Knowledge of AI/ machine learning
5	Evaluation of mechanical characterization of common Nepali timbers and analysis of structural performance of traditional timber joint connections	• Mechanical property database of Nepali timbers. • Performance data of traditional timber joints. • Improved design guidelines. • Enhanced structural safety of timber constructions.	Master in Civil Engineering, Structural/ Earthquake Engineering or related	Structural Dynamics, FEM/DEM/AEM, Material testing experience
6	Risk-sensitive land use planning in traditional settlement	• Multi-hazard risk maps for traditional settlements. • Risk-sensitive land use planning framework. • Safer land use decisions in vulnerable areas. • Balanced risk reduction and heritage preservation.	Master in Urban Planning, Infrastructure planning, Civil Engineering, or related degree	GIS or Remote sensing related tools and techniques
7	Integration of indigenous knowledge and digital	• Framework combining indigenous knowledge and digital tools.	Master in Urban Planning,	

No.	Topic	Expected Output/Outcome	Preferred Academic Qualifications	Preferred Special Skills
	technologies for risk-resilient rural tourism infrastructure planning	• Case studies on community-based tourism infrastructure. • More resilient and culturally appropriate tourism infrastructure. • Enhanced community participation in planning and risk management.	Infrastructure planning, Civil Engineering, or related degree	

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No.	Topic	Expected Output/Outcome	Preferred Academic Qualifications	Preferred Special Skills
1	Mortar optimization in stone masonry structures for enhanced structural performance (Numerical and Experiment study) (2- Students: 1 for numerical, one for experiment)	• Optimal mortar mix designs using local materials. • Enhanced structural performance and bonding. • Improved seismic resilience of rural stone masonry.	Bachelor Civil Engineering or related	Structural Dynamics, Computer Programming skills (for numerical research), Material testing experience (for experiment research)
2	Material characterization of stone masonry structures with variations in stone and mortar composition	• Data on mechanical properties of varied stone and mortar mixes. • Better understanding of material effects on masonry strength. • Guidelines for selecting optimal stone-mortar combinations.	Bachelor Civil Engineering or related	Material testing experience
3	Mechanical characterization of Nepalese Bamboo species (2 students)	• Mechanical property database of Nepalese bamboo species. • Reliable data to support bamboo structural use. • Improved design guidelines for bamboo construction.	Bachelor in Civil Engineering	Material testing experience
4	Computational molecular-level study for enhancing mortar bonding properties	• Identify the suitable materials to improve the mortar bonding using computational method	Bachelor in Civil Engineering or Material science	Computer Programming skills, Material testing experience

No.	Topic	Expected Output/Outcome	Preferred Academic Qualifications	Preferred Special Skills
		• Improved mortar formulations with enhanced bonding. • Scientific basis for developing stronger, durable mortars.		
5	Experimental evaluation of common bamboo construction joints used in buildings of Nepal	• Experimental data on strength and behavior of bamboo joints. • Improved design recommendations for bamboo joint use. • Enhanced safety and durability of bamboo structures.	Bachelor in Civil Engineering or Material science	Material testing experience
6	Evaluation of Pre-fabricated CBFT wall panel	• Test results on structural performance of CBFT panels. • Validation of affordable CBFT panels for safer, faster construction. • Recommendations for practical use in building projects.	Bachelor in Civil Engineering or Material science	Material testing experience
7	AI-based Characterization and Defect Detection of Bamboo Species (2-students)	• AI models for detecting defects and characterizing bamboo quality. • Faster, accurate bamboo quality assessment. • Improved selection for construction and manufacturing.	Bachelor in Civil Engineering	Computer Programming skills

No.	Topic	Expected Output/Outcome	Preferred Academic Qualifications	Preferred Special Skills
8	Evaluation of mechanical performance of laminated bamboo boards for structural applications.	• Validation of laminated bamboo for structural use. • Design guidelines to promote laminated bamboo-based construction.	Bachelor in Civil Engineering	Material testing experience, Computer Programming skills
9	Evaluation of mechanical characterization of common Nepali timbers and analysis of structural performance of common timber joint connections of Nepal (2 students: one for mechanical testing, one for joint connection testing)	• Mechanical property database of Nepali timbers. • Performance data of traditional timber joints. • Improved design guidelines. • Enhanced structural safety of timber constructions.	Bachelor in Civil Engineering	Material testing experience
10	Risk-sensitive land use planning in traditional settlement (2 students for different hazards)	• Multi-hazard risk maps for traditional settlements. • Risk-sensitive land use planning framework. • Safer land use decisions in vulnerable areas. • Balanced risk reduction and heritage preservation.	Bachelor in Civil Engineering	GIS or Remote sensing related tools and techniques
11	Life Cycle Assessment (LCA) of bamboo-based building structures.	• Comparative analysis with conventional building materials. • Quantified sustainability benefits of bamboo construction.	Bachelor in Civil Engineering, Environmental Engineering/ science, Architecture, Construction Management, Building Technology,	Statistical analysis tools

No.	Topic	Expected Output/Outcome	Preferred Academic Qualifications	Preferred Special Skills
		• Support for policy and adoption of bamboo in green building.	Materials Science	
12	Integration of indigenous knowledge and digital technologies for risk-resilient rural tourism infrastructure planning (2 students)	• Framework combining indigenous knowledge and digital tools. • Case studies on community-based tourism infrastructure. • More resilient and culturally appropriate tourism infrastructure. • Enhanced community participation in planning and risk management.	Bachelor in Civil Engineering or related degree	
13	Socio-economic impact of rural tourism on local communities	• Improvement in income, employment, and livelihood changes from tourism. • Case studies of rural tourism's effects on communities. • Improved understanding of tourism's benefits and challenges. • Policy recommendations for sustainable rural tourism development.	Bachelor degree in Civil Engineering, Architecture, Economics, and Management	Statistical analysis tools

Attachment 4

Framework for Research Statement

Research statement of up to 600 to 800 words related to the program the student has applied for shall be developed by the applicant. Students should write this statement for one of the topics listed in Attachment 3. The statement shall include

- Title
- Research problem definition
- Importance of the selected research problem in terms of contribution to national economy
- Research plan
- Expected results and impact

MAS applicants should select three thesis topics of their choice in the priority order. The University will consider for admission of each applicant three topics best suited to him/her based on his/her qualifications and experience, which may or may not be the same as selected by the applicant.

The interview will determine suitability of the particular applicant for the three thesis topics considered for him/her. The interview scores for various topics may be different. The student for each thesis topic will be selected based on the overall score of applicants suitable for the particular thesis topic. A student may be selected for a thesis topic for which he/she has not scored the highest score among topics he/she was considered. However, for while allocating the financial assistance the highest score he/she has scored for all topics he/she was considered will be used.

Attachment 5

Framework for Personal Statement

A personal statement shall be a concise description of the personal background, academic journey and research interests of the applicant of up to 800 to 1,000 words. It shall also highlight specific qualities and special skills of the applicant which may be helpful for the successful completion of the studies and research. He/she shall also describe the reasons for selecting MBUST and the program.

Attachment 6

Format for Publication List

In chronological order based on the year of publication

No.	Title of the publication	Author/s	Name and other details of Journal/Book/others	Web reference	Year