



MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

(FORMERLY KNOWN AS WEST BENGAL UNIVERSITY OF TECHNOLOGY)

Main Campus : Haringhata, Nadia, Pin-741 249

Kolkata Campus : BF-142, Sector-I, Saltlake City, Kolkata-700 064, (India)

Website : www.wbut.ac.in

Prof. Saikat Maitra

Vice Chancellor

No: 25/4271/AQAR /17-18

Dated: 28.12.2018

To

The Director

National Assessment and Accreditation Council

P.O. Box No. 1075, Opp: NLSIU

Nagarbhavi, Bangalore: 560 072

Subject: Submission of AQAR for the Academic Year 2017-2018

Reference: NAAC Track ID-WBUNGN11633

NAAC Executive Committee No. & Date: EC (SC)29/A&A/59.1 dated November 27, 2017

Dear Sir,

Please find enclosed herewith the Annual Quality Assurance Report (AQAR) prepared by IQAC and accepted by the Executive Council of the University for the Academic Session 2017-2018.

The documents attached include:

- (i) Part A containing Details of Institution and IQAC Composition and Activities.
- (ii) Part B containing details provided under Criterion I to Criterion VII of the Guidelines for the purpose along with necessary Annexures.

It is to be mentioned that this is the first AQAR submission after NAAC Accreditation in November, 2017. It is also to be mentioned that the University is shifting its activities from Salt Lake City Campus to its Main Campus at Haringhata, Nadia, West Bengal where the construction work is going on in full swing.

A soft copy of the enclosed documents has also been sent by email to your kind office.

Thanking You,

Yours sincerely,

(Prof. Saikat Maitra)

Enclosed: as above

MAULANA ABUL KALAM AZAD
UNIVERSITY OF TECHNOLOGY,
WEST BENGAL



MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

(Formerly West Bengal University of Technology)



Annual Quality Assurance Report (AQAR) for the A.Y. 2017-2018

**Submitted to
National Assessment and Accreditation Council
Bengaluru (Karnataka) 560072**



DECEMBER, 2018

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The Annual Quality Assurance Report (AQAR) of the IQAC

Part – A

I. Details of the Institution

1.1 Name of the Institution	Maulana Abul Kalam Azad University of Technology, West Bengal Formerly, West Bengal University of Technology
1.2.1 Address Line 1 (City Campus)	BF-142, Sector-I, Salt Lake City
Address Line 2	Kolkata-700064, West Bengal, India
City/Town	Kolkata
State	West Bengal
Pin Code	700064
1.2.2 Address Line 2 (Main Campus)	Simhat Haringhata, Nadia, West Bengal, Pin: 741249
Pin Code	741249
Institution e-mail address	<ul style="list-style-type: none">• vc@wbut.ac.in• registrar@wbut.ac.in
Contact Nos.	City Campus: (033) 23216775 Main Campus: 03473222332

Name of the Head of the Institution:

Prof. (Dr.) Saikat Maitra
Vice-Chancellor

Tel. No. with STD Code:

033-2347322233

Mobile:

+91-9831130882

Name of the IQAC Co-ordinator:

Dr.(Mrs) Somdatta Chakravortty

Mobile:

+91-9433897685

IQAC e-mail address:

iqac.makautwb@gmail.com

1.3 NAAC Track ID

WBUNGN11633

1.4 NAAC Executive Committee No. & Date:

*(For Example EC/32/A&A/143 dated 3-5-2004.
This EC no. is available in the right corner- bottom
of your institution's Accreditation Certificate)*

EC(SC)29/A&A/59.1
Dated, November 27, 2017

1.5 Website address:

<http://www.wbut.ac.in>

Web-link of the AQAR:

<http://wbut.ac.in/page.php?id=365>

1.6 Accreditation Details:

Sl. No.	Cycle	Grade	CGPA	Year of Accreditation	Validity Period
1	1 st Cycle	B++	2.87	2017	5 years
2	2 nd Cycle	NA	NA	NA	NA
3	3 rd Cycle	NA	NA	NA	NA
4	4 th Cycle	NA	NA	NA	NA

1.7 Date of Establishment of IQAC :

1.8 AQAR for the year

1.9 Details of the previous year's AQAR submitted to NAAC after the latest Assessment and Accreditation by NAAC : **Not Applicable as this is the first AQAR being submitted after Accreditation**

- | | |
|---------|----|
| 1. AQAR | NA |
| 2. AQAR | NA |
| 3. AQAR | NA |
| 4. AQAR | NA |

1.10 Institutional Status

University State ☒ Central ☐ Deemed ☐ Private ☐

Affiliated College Yes ☐ No ☒

Constituent College Yes ☐ No ☒

Autonomous college of UGC Yes ☐ No ☒

Regulatory Agency approved Institution Yes ☒ No ☐

(eg. AICTE, BCI, MCI, PCI, NCI)

Type of Institution Co-education ☒ Men ☐ Women ☐

Urban ☒ Rural ☒ Tribal ☐

Financial Status Grant-in-aid ☐ UGC 2(f) ☒ UGC 12B ☒

Grant-in-aid + Self Financing ☒ Totally Self-financing ☐

1.11 Type of Faculty/Programme

Arts ☐ Science ☒ Commerce ☐ Law ☐ PEI (Phys Edu) ☐

TEI (Edu) ☐ Engineering ☒ Health Science ☒ Management ☒

Others (Specify)

1.12 Name of the Affiliating University (*for the Colleges*)

NA

1.13 Special status conferred by Central/ State Government-- UGC/CSIR/DST/DBT/ICMR etc.

Autonomy by State/Central Govt. / University

✓

University with Potential for Excellence

UGC-CPE

DST Star Scheme

UGC-CE

UGC-Special Assistance Programme

DST-FIST

UGC-Innovative PG programmes

Any other (*Specify*)

1.MHRD under
FAST scheme
(COE)
2. TEQIP III

UGC-COP Programmes

2. IQAC Composition and Activities

2.1 No. of Teachers

8

2.2 No. of Administrative/Technical staff

2

2.3 No. of students

0

2.4 No. of Management representatives

2

2.5 No. of Alumni

0

2. 6 No. of any other stakeholder and community representatives

0

2.7 No. of Employers/ Industrialists

2.8 No. of other External Experts

4

2.9 Total No. of members

16

2.11 No. of meetings with various stakeholders:

No.

Faculty

Non-Teaching Staff Students

Alumni

Others

2.12 Has IQAC received any funding from UGC during the year?

Yes

No

If yes, mention the amount

2.13 Seminars and Conferences (only quality related)

(i) No. of Seminars/Conferences/ Workshops/Symposia organized by the IQAC

Total Nos.

International

National

State

Institution Level

(ii) Themes

Induction Programme, NBA, Mathematical Sciences for Advancement in Science & Technology, Flipped Learning, Data Science with R, Cancer Awareness, Intelligent Earth and Deep Learning

2.14 Significant Activities and contributions made by IQAC

Details in Annexure I

2.15 Plan of Action by IQAC/Outcome

The plan of action chalked out by the IQAC in the beginning of the year towards quality enhancement and the outcome achieved by the end of the year *

Plan of Action	Achievements
As mentioned in 2.14	Most of the benchmarks had been achieved (vide Annexure: I)

* Attach the Academic Calendar of the year as Annexure. (vide Annexure: II)

2.15 Whether the AQAR was placed in statutory body

Yes



Executive Council

☐

Management

Any other body

☐

Syndicate

Provide the details of the action taken

The draft AQAR was prepared by the Director and the Advisor taking inputs from respective academic and administrative departments, different schools, and other stake holders. The draft was placed in the meeting of IQAC and following incorporation of suggestions from the members of the committee, the report was finally placed in the Executive Council of the University in its 36th Meeting (Item No. 2) held on June 14, 2018. The Executive Council accepted the report and directed it to be submitted to NAAC.

Part – B

Criterion – I

I. Curricular Aspects

1.1. Details about Academic Programme

Level of the Programme	Number of existing Programmes	Number of programmes added during the year	Number of self-financing programmes	Number of value added / Career Oriented programmes
PhD	23	NA	NA	NA
PG	10	01	NA	NA
UG	02	NA	NA	NA
PG Diploma	NA	NA	NA	NA
Advanced Diploma	NA	NA	NA	NA
Diploma	NA	NA	NA	NA
Certificate	NA	NA	NA	NA
Others	NA	NA	NA	32
Total	35	01	NA	32
Interdisciplinary	01	NA	NA	NA
Innovative	NA	NA	NA	NA

N.B. Discussion is going on introducing Bachelor of Vocational Courses (B.Voc)

1.2 (i) Flexibility of the Curriculum: CBCS/Core/Elective option / Open options

(ii) Pattern of programmes:

√

Pattern	Number of programmes
Semester	13
Trimester	-
Annual	-

1.3 Feedback from stakeholders* Alumni Parents Employers Students (On all aspects)

Mode of feedback : Online ☐ Manual ☒ Co-operating schools (for PEI) ☐

* Blank feedback forms provided in Annexure III, IV, V and VI

*Analysis of the respective feedbacks from Alumni, Parents, Employers and Students are provided in Annexure VII, VIII, IX and X.

1.4 Whether there is any revision/update of regulation or syllabi, if yes, mention their salient aspects.

- (i) Major Revision of Curriculum and Syllabi has been made as per guidelines of AICTE for undergraduate and post graduate degree courses in Engineering and Technology(January 2018) the revised regulation and syllabi are to be implemented from academic session 2018-19(**Annexure XI**)
- (ii) Provision of Online Courses for 2nd Year, 3rd Year and 4th Year B.Tech Courses of IT and CSE for Additional Credit Earning(**Annexure XII**)
- (iii) Provision of Classroom Equivalent Online Courses offered for B.Tech. CSE and IT Courses from 2nd year to 4th year(**Annexure XIII**)
- (iv) Introduction of Online Courses (MOOCs) for award of B.Tech Honours Degree (**Annexure XIV**)
- (v) Procedure for Continuous Evaluation to award internal marks during a semester (**Annexure XV**)
- (vi) Introduction of 3 weeks induction programme for 1st year B.Tech. students (**Annexure XVI**)
- (vii) Introduction of Mandatory Additional Requirements for earning B.Tech. degree (**Annexure XVII**)

1.5 Any new Department/Centre introduced during the year. If yes, give details.

A two-year M.Tech. Programme in Microelectronics & VLSI Technology was introduced from 2017-18 Academic Session

Criterion – II

2. Teaching, Learning and Evaluation

2.1 Total No. of permanent faculty

Total	Asst. Professors	Associate Professors	Professors	Others
23	14	5	3	1

2.2 No. of permanent faculty with Ph.D.

14

2.3 No. of Faculty Positions Recruited (R) and Vacant (V) during the year

Asst. Professors		Associate Professors		Professors		Others		Total	
R	V	R	V	R	V	R	V	R	V
6	6	1	13	0	7	-	-	7	26

2.4 No. of Guest and Visiting faculty and Temporary faculty

Adjunct Faculty: 36; Guest and Visiting Faculty: 8; Project Officer:2

2.5 Faculty participation in conferences and symposia:

No. of Faculty	International level	National level	State level
Attended Seminars/ Workshops	1	7	11
Presented papers	8	2	0
Resource Persons	4	9	2

2.6 Innovative processes adopted by the institution in Teaching and Learning:

- Introduced MOOCs along with regular classroom teaching
- Topic beyond syllabus is covered through special lectures, industry visits etc.
- Flip Learning based teaching has been introduced.
- Course files are maintained by faculty members that include Lesson Plan, Assignments, Class Test Samples etc.
- Conduction of Student Feedback, Alumni Feedback, Employer Feedback and Parents Feedback and their analysis to improve teaching-learning process.
- Encouragement to learn through experience by management case studies, interactive programmes and live projects
- Conduction of Orientation and Induction programme for first year students
- Students are encouraged for self-employment through start-up companies.
- Faculty and students are encouraged by providing financial support for carrying out innovative research.
- Encourage learning through online education portals
- Academic Audit is conducted each semester
- Continuous evaluation through conduction of quiz, presentations, assignments at regular intervals during a semester
- Special remedial classes organised for weak students

2.7 Total No. of actual teaching days during this academic year

198

2.8 Examination/ Evaluation Reforms initiated by the Institution

- Plan to digitise evaluation of answer scripts for all 300+ affiliated colleges in the semester examinations
- Procedure for Continuous Evaluation to award internal marks for theory and practical courses during a semester
- Provision for review and re-evaluation of semester answer scripts
- Digitisation of the Examination Conduction Procedure
- Students are evaluated through MCQ type questions as a mandatory part of their semester question, which helps them in competitive exams

2.9 No. of faculty members involved in curriculum restructuring/revision/syllabus development as member of Board of Study/Faculty/Curriculum Development workshop

All Members of Faculty

2.10 Average percentage of attendance of students

76.3%

2.11 Course/Programme wise distribution of pass percentage:

Title of the Programme	Total no. of students appeared	Division				
		Distinction % >9	I % <9 and >8	II % <8 and >7	III % <7 and >8	Pass %
B. Tech. (CSE)	30	0	50	36.67	36.67	86.67
B. Tech. (IT)	22	4.55	45.45	31.82	31.82	81.82
PBIR.(Mol. Bio)	5	40	60	0	0	100
PBIR.(Micro. Bio)	4	25	50	0	0	75
PBIR.(Genetics)	3	33.33	66.67	0	0	100
M. Tech. (BI)	6	16.67	66.67	0	0	83.33
M. Tech. (SE)	10	30	50	10	10	90
M. Tech. (IEM)	9	33.33	44.44	0	0	88.89
M. Tech. (MVT)	13	23.08	38.46	0	0	69.23
M. Tech. (BT)	11	27.27	63.64	0	0	90.91
M. Tech. (CSE)	12	50	41.67	8.33	8.33	100
M. Tech. (IT)	11	9.09	45.45	27.27	27.27	81.82

2.12 How does IQAC Contribute/Monitor/Evaluate the Teaching & Learning processes:

Academic audit is made over the whole teaching – learning process for overall quality improvement. The process of audit requires a self-review in which the University evaluates its progress towards achieving its objectives related to the areas of the audit and identifies areas for improvement.

The Committee sits in the beginning and end of each semester to discuss details of intended plans and strategies with respect to enhancement initiatives and evaluate the measures practiced during the academic session.

The audit panel comprises of Heads of Departments, selected members of faculty and external members. The panel visits the departments to check and verify the academic practices laid down by the committee for evaluation and drafts an Audit Report. The report commends good practice, and makes recommendations intended to assist the Institute in its own programme of continuous improvement of quality. The audit report is put up to the Internal Quality Assurance Cell (IQAC) for monitoring of follow up activities.

Areas of Academic Audit (2017-18)

A. Teaching and learning

i) Planning, Design and Review of Programmes and Courses

a) Feedback from students (Course End Survey)

b) Feedback from professionals and industry (Employee and Alumni Feedback)

c) Application of modern teaching aids

The Departmental Academic Committee, Board of Studies of the Department is responsible for course approval prior to approval by the Academic Council of the Institute. The drivers for the development of new academic programmes and for changes to existing programmes come from various sources, including the professionals from industry (Alumni Survey and Employer Survey), advisory committees such as the Board of Studies, feedback from students (Graduate Surveys), and suggestions made by external academic and industry experts of the Academic Council involved in programme reviews. Analysis of Alumni Survey and Employer Survey Reports by the Audit Team highlighted that while it might be necessary to include certain professional courses as required by the industry professionals, the students would appreciate more practical classes for courses with more industry demand. The Institute appreciates that it is required to distinguish between disciplinary needs, professional needs and industry needs. During the audit process, there was a general acceptance and understanding amongst the students that the courses were flexible enough to be adapted to the specific needs of industry or higher education. The Institute encourages and supports the use of modern teaching aids and new teaching technologies of teaching and learning. Effort needs to be put by providing the necessary encouragement and support to faculty members to understand and practice the potential benefits of these teaching and learning tools in enabling the Institute to meet its teaching and learning objectives.

B. Community Engagement:

The Audit Panel reports on a range of relationships with stakeholders – community engagement in academic programme design, delivery and teaching, and review and accreditation of programmes by representatives of professions and industries. It also notes examples of research interaction, membership by professionals and industry personnel on advisory boards, contributions to teaching by professionals and industry personnel, and internships and placements of students in business and industry.

The audit panel heard that students find it stimulating to hear visiting lecturers/speakers from industry, and that this is seen as a natural link to graduate profiles in professional and applied faculties. Such community engagement requires a good network of contacts and knowledge of appropriate people. That the Institute values these connections is evidenced by a commitment to improving employer input and in extending it where it is missing or inadequate.

C. Student Assessment

- a) Class Tests
- b) Assignments
- c) Quiz
- d) End Semester Exam
- e) Viva voce
- f) Projects
- g) Seminars

The University has policies and guidelines that govern assessment practices across all affiliated colleges and grade descriptors have been developed by the Examination Committee. The Examination Committee reported that the Institute has continued to enhance its assessment practices, and pass rates and grades are reviewed each semester by the Committee.

2.13 Initiatives undertaken towards faculty development

<i>Faculty / Staff Development Programmes</i>	<i>Number of faculty benefitted</i>
Refresher courses	18
UGC – Faculty Improvement Programme	-
HRD programmes	16
Orientation programmes	17
Faculty exchange programme	9
Staff training conducted by the university	6
Staff training conducted by other institutions	14
Summer / Winter schools, Workshops, etc.	8
Others	

2.14 Details of Administrative and Technical staff

Category	Number of Permanent Employees	Number of Vacant Positions	Number of permanent positions filled during the Year	Number of positions filled temporarily
Administrative Staff	37	19	4	45
Technical Staff	6	4	0	8

Criterion – III

3. Research, Consultancy and Extension

3.1 Initiatives of the IQAC in Sensitizing/Promoting Research Climate in the institution

- Setting of six nodal centres to develop a research pool involving the 300+ affiliated colleges of the University
- Identified broad thrust areas for undertaking PhD programmes in different disciplines (**Annexure XVIII**)
- IQAC regularly informs and encourages the faculty members to apply for research grants projects and grants to UGC/DST/DBT etc.
- The University provides all necessary infrastructural support and space for carrying out research work.
- IQAC regularly exposed students to industrial practices and latest trends in Research and Development through industrial training, seminar lectures by experts drawn from industry, academia and R&D community of this country and from overseas.
- The University organised an exhibition of research projects in “Anweshan: Student Research Convention” on 6th and 7th February, 2018 in the University Campus, Salt Lake, Kolkata
- Research project Convention was held on 18th April, 2018 in our Academic Campus at Haringhata

3.2 Details regarding major projects

	Completed	Ongoing	Sanctioned	Submitted
Number	3	3	-	3
Outlay in Rs. Lakhs	21.2	132.314	-	130.832

3.3 Details regarding minor projects

	Completed	Ongoing	Sanctioned	Submitted
Number	-	-	-	-
Outlay in Rs. Lakhs	-	-	-	-

3.4 Details on research publications

	International	National	Others
Peer Review Journals	29	4	-
Non-Peer Review Journals	-	-	-
e-Journals	-	-	-
Conference proceedings	45	5	-

3.5 Details on Impact factor of publications:

0- 4.2	1.993	8.0	3
Range	Average	h-index	Nos. in SCOPUS

3.6 Research funds sanctioned and received from various funding agencies, industry and other organisations

Nature of the Project	Duration Year	Name of the funding Agency	Total grant Sanctioned (in lakhs)	Received (in lakhs)
Major projects	3, 5	TEQIP II, UGC, MeiTy, DBT(WB)	131.2	60.66
Minor Projects	-	-	-	-
Interdisciplinary Projects	-	-	-	-
Industry sponsored	-	-	-	-
Projects sponsored by the University/ College	-	TEQIP	15	-
Students research projects (other than compulsory by the University)	-	-	-	-
Any other(Specify)	-	-	-	-
Total	-	-	146.2 Lakhs	60.66

3.7 No. of books published i) With ISBN No.

2

Chapters in Edited Books

9

ii) Without ISBN No.

-

3.8 No. of University Departments receiving funds from

UGC-SAP CAS DST-FIST
DPE DBT Scheme/funds

3.9 For colleges

Autonomy CPE DBT Star Scheme
INSPIRE CE Any Other (specify)

3.10 Revenue generated through consultancy

3.11 No. of conferences organized by the institution

Level	International	National	State	University	College
Number	4			8	
Sponsoring agencies					

3.12 No. of faculty served as experts, chairpersons or resource persons

3.13 No. of collaborations

International

National

Any other

3.14 No. of linkages created during this year

3.15 Total budget for research for current year in lakhs :

From Funding agency

From Management of University/College

Total

3.16 No. of patents received this year

Type of Patent		Number
National	Applied	2
	Granted	1
International	Applied	-
	Granted	-
Commercialised	Applied	-
	Granted	-

3.17 No. of research awards/ recognitions received by faculty and research fellows of the institute in the year

Total	International	National	State	University	Dist	College
0	-	-	-	-	-	-

3.18 No. of faculty from the Institution who are Ph. D. Guides

21

and students registered under them

52

3.19 No. of Ph.D. awarded by faculty from the Institution

11

3.20 No. of Research scholars receiving the Fellowships (Newly enrolled + existing ones)

JRF

4

SRF

4(2 external)

Project Fellows

4

Any other

1 post doc

3.21 No. of students Participated in NSS events:

University level

11

State level

4

National level

International level

3.22 No. of students participated in NCC events: **NA**

University level

State level

National level

International level

3.23 No. of Awards won in NSS:

None as yet

University level

State level

National level

International level

3.24 No. of Awards won in NCC:

Not Applicable

University level

State level

National level

International level

3.25 No. of Extension activities organized

University forum

College forum

NCC

NSS

2

Any other

3.26 Major Activities during the year in the sphere of extension activities and Institutional Social Responsibility

- One-day workshop on Flip Learning/Smart Learning in the main Campus in Haringhata on 23rd March, 2018
- One-day seminar on “ Prevention and Early Detection of Common Cancer: on 22nd March, 2018
- Observation of World Yoga day on 21st June, 2018
- A One-Day Seminar on Intelligent Earth and Deep Learning was held on 29th March, 2018.
- Observation of Independence and Republic Day
- Observation of Engineers Day
- Observation of World Environment Day
- Observation of National Science Day in our Academic Campus where local schools participated
- Organized Science awareness campaign in association with Bigyan Darbar and Schools at Kanchrapara
- One week workshop on “Data Science with R” was organised by MAKAUT, WB and IUST, Kashmir from 23rd -29th March, 2018 at Govt. College of Engineering and Ceramic Technology, Kolkata.

Criterion – IV

4. Infrastructure and Learning Resources

4.1 Details of increase in infrastructure facilities:

Facilities	Existing(sq.m)	Newly created (sq.m)	Source of Fund	Total (sq.m)
Campus area	Salt Lake: 4694.34	Haringhata: 47345.16	1. University Fund	52,039.5
Class rooms	14	-	2. UGC Developmental Grant	14
Tutorial Rooms	04	-	3. TEQIP II State Govt.	04
Laboratories	20	-		20
Seminar Halls	01	-		01
Auditorium	01	-		01
No. of important equipments purchased (\geq 1.0 lakh) during the current year.	38	1		39
Value of the equipment purchased during the year (Rs. in Lakhs)	40 crore(approx)	8 lakh		40 cr 8 lakh
Others	-	-		-

The University is establishing its main campus at Haringhata, Nadia on a land of 37.91 acres. Three towers of about 47345.16 sq.m. has already been built and partly occupied. The construction work is going on.

Salt Lake City Campus of 0.79 acres and the carpet area under present occupation is 4694.3 sq.m which is catering to academic and administrative activities of the University.

4.2 Computerization of administration and library

Administration

- Computerised Web Based Management System (CWMS) comprising of 3 modules namely(i) Faculty Information System(ii) Infrastructure Information System(iii) Web based Management System has been developed by the Administrative Department of the University.
- The introduction of Beta version of CWMS will introduce digital inspection of the affiliating colleges for purpose of quality monitoring.

Library

- The Library uses its portal(<http://library.wbut.ac.in>) for providing information about its collection through the open source ILS system KOHA.
- The University has a fully functional hybrid library where it is possible to access printed as well as digital holdings in the form of e-books and e-journals, multimedia CD ROMs and software.
- The University library is now a member of E-Shodh-Sindhu(UGC Infonet) Digital Library Consortia. It has subscribed e-journals like IEL online, anti-plagiarism software like Ithenticate and e-books from renowned publishers.
- The library provides modern web based services for access.
- Library has 10 terminals as e-corner used for digital library facility. These terminals are managed using libki.
- Library gives fully automated lending services to students and faculty using library management software KOHA.
- Library has Web OPAC(<http://opac.wbut.ac.in>) facility where all can browse through library information.
- Library is working on the formation of e-resource consortia with the affiliated colleges to facilitate quality e-resources in a cost effective way.

4.3 Library services:

	Existing		Newly added		Total	
	No.	Value	No.	Value	No.	Value
Text Books	5470	17639	123	369	17225	5593
Reference Books	1341	2554	23	136	1364	2670
e-Books	10131	10131	176	176	10307	10307
Journals	20	-	0	0	20	
e-Journals	6000	6000	0	0	6000	6000
Digital Database						
CD & Video	853	853	10	10	863	863
Thesis	104	104	0	0	104	104
Reference tools	42	42	0	0	42	42

4.4 Technology up gradation (overall)

	Total Computer s	Computer Labs	Internet	Browsin g Centres	Computer Centres	Offic e	Depart -ments	Others
Existing	250	7	150mbps and Wifi	2	1	6	8	-
Added	0	0	0	0	0	0	0	-
Total	250	7	150mbps and Wifi	2	1	6	8	-

4.5 Computer, Internet access, training to teachers and students and any other programme for technology upgradation (Networking, e-Governance etc.)

- The University has taken the initiative for digitization and implementation of a paperless office and requisite training has been given to all stakeholders for the same
- All Engineering, Technology and Science Departments have good number of computers and printers in air-conditioned computer laboratories/rooms
- The University has provided desktop/laptop computers to all faculty members with internet access.
- Library has Web OPAC (<http://opac.wbut.ac.in>) facility where all can browse through library information.

4.6 Amount spent on maintenance in lakhs :

i) ICT	3.47
ii) Campus Infrastructure and facilities	33.70
iii) Equipments	8.19
iv) Others	2.5
Total :	47.86

Criterion – V

5. Student Support and Progression

5.1 Contribution of IQAC in enhancing awareness about Student Support Services

IQAC tries to build awareness of student support among the students, faculty and administration. IQAC compiles and analyses feedback from employers and other stakeholders to identify the area of student support and comes out with suggestion and recommendation for implementation.

The following student support system is established in the University and activities are arranged in each cell:

- Grievance appeal committee
- Student Affairs and Welfare committee
- Games and Sports Committee
- Anti Ragging Committee
- Anti sexual harassment committee
- Updates on notice boards and university website to ensure active participation by students in various activities
- Psychologists are appointed for student counselling
-

The said committees have been functioning in the University in order to facilitate its successful functioning. Each of the committees has been conducting its meetings the minutes of which have been ratified in the governing body meetings from time to time. The Head of the Institution constitutes the committees whenever the situation demands.

The Anti Ragging committee is formed with staff of the University with specific schedules and locations in the campus especially during the initial months of academic session for the 1st year students of B.Tech and other programmes.

5.2 Efforts made by the institution for tracking the progression

The University takes steps to track student progression through continuous evaluation by conducting class tests, allotting assignments and analysing results. Evaluated scripts are shown to the students for discussion, clarification and rectification, if needed. Remedial classes are also organised as and when required.

- Alumni, Guardian, Employer and Student feedback is taken to track student progression
- Continuous evaluation of students is done throughout the semester
- Counselling and monitoring of weak students done throughout the semester

5.5.3 (a) Total Number of students

UG	PG	Ph. D.	Others
247	112	41	-

(b) No. of students outside the state

102

(c) No. of international students

Men

No	%
1	

Women

No	%

5.4 Details of student support mechanism for coaching for competitive examinations (If any)

- a) Mentoring of students is done by the department
- b) The placement cell of the University and constituent colleges organise workshops and awareness programmes for competitive exams
- c) Career fairs are organized in collaboration with the affiliated colleges
- d) Coaching classes for GATE, CAT, GRE, JEMAT, PGET etc. exams are conducted by members of faculty
- e) Psychologists are appointed for students counselling
- f) Remedial classes are organised for weak students
- g) Feedback is collected from parent-teacher meeting organised by the University

No. of students beneficiaries

35

5.5 No. of students qualified in these examinations

NET

SET/SLET

GATE

CAT

IAS/IPS etc

State PSC

UPSC

Others

5.6 Details of student counselling and career guidance

A faculty member (mentor) is assigned to a small group of students for the full four years of studies to help them to clarify their doubts and improve their technical aspects of the courses. He also addresses their personal and problems of adjustment. The mentors meet the students periodically and monitor their performance and their activities. Guidance regarding the lagging issues is provided. Occasionally mentor meeting with the parents is conducted based on the requirement.

Professional Guidance:

The department is well equipped with knowledgeable human resources in the form of members of faculty who offer guidance to the prospective professionals in addition to classroom teaching.

Career advancement:

The Training and Placement cell has been active not only in arranging campus recruitment drives, but also offering awareness and training for the students, occasionally inviting career counselors to address the students.

Coursework:

Members of faculty handling different courses interact with students in clearing all their concept-oriented queries of the respective courses offered by the individual teachers.

Lab-specific:

Two teachers are assigned in a laboratory class for better interactions and clarifications during laboratory hours. A demonstrative presentation is given by the teacher concerned before commencement every practical class. The laboratory records are evaluated after completion of the practical class. In other words, there is active involvement of the members of faculty at the pre-practical stage, at the time of experiment and after the experiment.

Total Development:

As stated above, the college puts forward efforts to realize the holistic development of the students. In addition to academics, literary, cultural and sports activities are conducted which offer leadership qualities, decision making abilities, team spirit, precision, analytical capabilities, socio-psychological and political awareness etc. which make an individual intellectually mature and personally complete.

Specific items are presented below:

S.No.	Type of Mentoring	Process	Method	Periodicity Weekly/ monthly/etc.
1.	Guidance	Counseling	1. Monitoring Performance of the students. 2. Personal Counseling for Career Guidance 3. Students in the year are assigned one faculty member and the entire batch is supervised by the HOD 4. The parents of poorly performing students are informed and counseling is done. 5. Students are encouraged to present papers at various conferences	Monthly
2.	Career Advancement	Training & Placement	Workshops, Seminar, Group Discussions, Special Lecture Session etc.	Once in 2 weeks
3	Course specific	Covering Content beyond syllabus	Lectures interspersed with discussions, Extra classes, Tutorials	Monthly
4	Lab Specific	Giving Extra Assignments beyond Lab Syllabus	Practical Sessions	Monthly
5.	Total development	Result Analysis of the student scores	Internal Examinations, Semester end examinations	Once in a semester

Mentoring System Details

Efficiency of the System:

The counselling system developed by the college has proved to be effective considering different parameters. The involvement of students in academics has increased, like class work, attendance, paper presentations, presentation of models in exhibitions, participation in cultural activities etc. Teachers are also becoming more responsive to the learners needs day by day which are being reflected in the overall student's response.

5.7 Details of campus placement

<i>On campus</i>			<i>Off Campus</i>
Number of Organizations Visited	Number of Students Participated	Number of Students Placed	Number of Students Placed
4	64	25	32

5.8 Details of gender sensitization programmes

<ol style="list-style-type: none"> 1. Awareness regarding gender based evil is created during the induction programme organised by the University. 2. A sexual harassment committee has been set up by the University headed by senior professor to take care of any complaints in this regard and make recommendation for its redressal. 3. It has been observed that the mentoring system in the University largely prohibits occurrence of such incidences and facilitates healthy ambiance.
--

5.9 Students Activities

5.9.1 No. of students participated in Sports, Games and other events

State/ University level 122 National level 15 International level 0

No. of students participated in cultural events

State/ University level 18 National level 14 International level -

5.9.2 No. of medals /awards won by students in Sports, Games and other events

Sports : State/ University level 24 National level 3 International level -

Cultural: State/ University level 7 National level - International level -

5.10 Scholarships and Financial Support

	Number of students	Amount
Financial support from institution	16	54,83,400
Financial support from government	34	3885640
Financial support from other sources	-	-
Number of students who received International/ National recognitions	-	-

5.11 Student organised / initiatives

Fairs : State/ University level ☒ National level ☐ International level ☐

Exhibition: State/ University level ☒ National level ☐ International level ☐

5.12 No. of social initiatives undertaken by the students

5.13 Major grievances of students (if any) redressed: **Grievances are few and are taken care of**

Criterion – VI

6. Governance, Leadership and Management

6.1 State the Vision and Mission of the institution

Vision- To achieve the status of premier Technology University ranked globally in the field of science, technology, pharmacy, architecture, management and interdisciplinary areas for the creation of high- calibre professionals blended with environmental consciousness, social, moral & ethical values alongwith the competency to face the new challenges of rapid technological advancement.

Mission

- To impart quality and value based teaching and learning of international standard for solving the real life problems.
- To create and disseminate knowledge nationally and internationally with an intention to transform our civilization into knowledge based society.
- To institutionalise the extension and field outreach activities with a view to transform the university system into an active instrument for social change.
- To undertake liaison and collaboration with the academic institutions recognised globally in order to inject new and fresh thinking in teaching, learning and research.
- To create intellectually capable and imaginatively gifted professionals and successful entrepreneurs having environmental consciousness and ethics who can work as individual or in group in multi-cultural global environments to contribute significantly for the betterment of mankind throughout their life.

6.2 Does the Institution has a management Information System

- The university registration system is equipped with Management Information System which covers the entire process from the filling up the examination form by the students (in-house and affiliated colleges) upto receiving the registration certificate.
- The university examination system is equipped with Management Information System which covers the entire process from the filling up the examination form by the students (in-house and affiliated colleges) upto receiving the grade card.
- The affiliation unit of the University is also having the MIS for quality monitoring of the affiliated colleges.
- Financial Administration of this University is being done through MIS.
- The library has its own Management Information System for all related activities.
- Furthermore under mentioned procedures are followed for Management of Information System:

A. Administrative Procedure

- Pre-planned administrative feedback meetings are conducted regularly.
- Meeting of the General Council, the Executive Council and Academic Council are held at regular interval.
- Meeting of Finance Committee and IQAC are held regularly.
- Periodic Meetings of various statutory and non-statutory committees are held to assure smooth academic activities.
- Meetings of Departmental Committee (DC), Board of Studies (BOS) and other stakeholders of higher education are done on regular basis.

B. Student Admission

- Admission Notice for non AICTE courses and PG courses (M.Tech, M. Pharm, MBA etc.) are given in the University Website as well as leading dailies. Complete online admission Systems are followed
- Publication of Merit list, list of eligible candidates, name of selected candidates are given in the University Website.
- Admission through counselling is made.

C. Student Records

- Digital procedure is followed to maintain student records (results, registrations and placements etc).
- Monthly attendance record/ student performance record/ student monitoring record are maintained.
- Record of fees collection/ Fellowship/Scholarship is maintained.

D. Evaluation and Examination procedure.

- Existence and maintenance of all relevant updated records
- Periodic meetings of Board of disciplines
- Internal and sessional evaluation

E. Research Administration

- Research programmes are carried out in accordance with the latest UGC guidelines.
- Students are selected on transparent manner.

6.3 Quality improvement strategies adopted by the institution for each of the following:

6.3.1 Curriculum Development

- Respective BOS considers the proposed curriculum and syllabi. After deliberations the Boards of studies recommends the syllabi and the recommended syllabi are placed before the academic council for its consideration and approval with or without modification.
- Acceptance of the revised curricula by the Executive Council.
- The views of Industries and alumni and students' are taken into account in designing the curriculum.
- Feedbacks on curriculum development are taken from different stakeholders of higher education.

6.3.2 Teaching and Learning

- Academic Calendar is framed and the same is strictly adhered to. The Academic Calendar (i.e. commencement date of a semester, Schedule for the periodic class tests, Duration of study, holidays and end semester Examinations) is circulated to every student and employees prior to the commencement of the semesters.
- At the beginning of the year students are supplied with Academic Regulations and syllabus by uploading the same in the website.
- Smart Class room in each department is available.
- Student exchange through various MoUs is in vogue.
- Using modern methods of teaching (lectures supported by teaching aids, computer projection, demonstration, live modelling, peer-tutoring, collaborative learning etc.).
- Conducting unit tests, group discussions, home assignments and class assignments etc.
- Conducting tutorial classes in small groups for better assistance and doubt clearing.
- Exposing students for outdoor learning through educational trips, excursions, camps, exhibitions etc.
- Motivating students for research activities.
- Conducting/Introducing online leaning and flipped learning system.

Also stated in Section 2.6

6.3.3. Examination and Evaluation

- The process of filling up of the examination forms, their notification, issue of different notices and issue of admit cards to the students are made through the examination website of the university.
- Question paper requirement of the different affiliated colleges numbering close to 200 is put on the website which allows smooth distribution of question papers during the semester examination.
- All the answer scripts are coded prior to evaluation to ensure completely transparent examination. The evaluation is done using a 3- tier process viz. examiner, scrutiny and head examiner.
- The evaluation is done under centralised control.
- The results are initially published online in the website. The affiliated colleges can see the result from the member's area while the individual students can see their results using their roll numbers.
- It is in the process that answers scripts will be scanned and then digital evaluation will be carried out.
- The university is in the process of adopting ways of continuous evaluation in respect of its internal marks. The students will be examined at the end of each chapter module and the exam results are to be uploaded in a portal to monitor the continuous evaluation.
- University is in the process of finalising the question banks and assignment banks for the purpose of creating learning centric environment for the student.
- There is Separate Board of Studies (BOS) for each department. The academic calendar is prepared centrally and is maintained strictly. Paper setter, examiner, moderators and scrutinizers are appointed and examinations are conducted as per academic calendar. The evaluations are done by keeping all sorts of transparencies.
- The examination Notification in accordance with the academic calendar includes the following information: Date of filling in examination forms, fees to be deposited, and the documents to be produced during filling in examination forms, date of filling in examination forms with late fine. Subsequent to the completion of form filled up the schedules of examination are notified. The examinations are conducted as per university norms and practices.
- All records related to examination, certificates etc. have been digitized.
- To improve the quality of student's achievement, tests are conducted after the completion of a topic. Extra classes are conducted by the faculties to complete the syllabus in the stipulated time. Practical classes are conducted with great care and sincerity for developing required skill within the students. Evaluation of practical is usually completed before the commencement of theory examinations. After the theory examination, answer scripts are coded and then assessed strictly following the rules and regulations laid down by the University and the result is declared within the stipulated time after proper scrutiny is done. Transparency is maintained in the entire evaluation process and the students have been given opportunity to review their examination papers. Evaluated answer scripts are shown to the respective students against RTI application.

6.3.4. Research and Development

- Under active participation of the college management, six nodal centres for promotion of the research has been established by the University in its affiliated colleges, located across the length of West Bengal. The College management has extended all type of research facilities to those nodal centres. The Course work of the Ph.D as prescribed in the UGC Ph.D regulation is being conducted in those centres. Furthermore, lab equipment's and journals including e-journals and e-books had been procured by the respective colleges where centres are located. Many faculties attached to different colleges of these 6 regions are pursuing their Ph.D in those centres under supervision of the University.
- Yearly assessment of the faculty is being done on the basis of publication in the international peer reviewed journals, having a good impact factors.
- Collaboration with the neighbour peers as well as premier institutes of the country and abroad are being under taken and the net outcome of that is the joint publication of the neighbouring peers.
- Faculties are encouraged to attend seminars and workshops on the emerging field in order to promote research.
- Interdisciplinary research is actively encouraged.
- Ph.D thesis is being evaluated by the national as well as foreign experts to ensure quality of research.
- Pre enrolment seminar and pre submission seminar of Ph.D are being conducted.
- Well arranged laboratory and library of the University is abreast to the research scholars to carry out the research.
- The university has developed a research pool for the promotion of research involving the affiliated colleges.
- Infrastructure for research has been developed keeping in view the requirements of the faculty members to carry out research keeping in consideration the requirement of the society as well. University promotes interdisciplinary research and teachers are encouraged to undertake research projects from funding agencies. University provides seed money for research to new faculty members and bears the cost of patent applications.
- The faculty members are provided with the facilities like individual computational system, Wi-Fi connection, digital library, equipments and well equipped laboratory.
- University encourages students to undertake industry sponsored projects and present technical papers in the appropriate forum
- Good quality research publications and Patents and Copyright of innovative work are encouraged by the University. Faculty members are also encouraged to undertake department level project schemes like UGC SAP, DST FIST, and AICTE etc. Teachers enjoy absolute freedom to submit research proposals to various funding Agencies.
- University has research fellows in different projects.

6.3.5. Library, ICT and physical infrastructure / instrumentation

- The University has adequate physical infrastructure, Library, laboratory and other facilities available to support the existing academic activities. The University aims at providing world class infrastructure and environment that should provide effective teaching and learning as per the norms of the statutory bodies.
- University has successfully made the best possible use of all infrastructure development grants at the University level (e.g. TEQIP-I, II and III and UGC general development Assistance) to create facilities (e.g. laboratories, auditorium) that can be utilized by the entire university community. The final approval for all large infrastructure projects is given by the Executive Council.
- The following facilities are available for use:
 - Library is well equipped with good numbers and titles of books and periodicals and digital resources. Library is having photocopies and printers.
 - Library management system like Lib-sys etc are used
 - Wi-Fi connectivity and internet access is given.
 - 10 mbps (INFLIBNET) and - 1 GBPS NKN Internet and 1 GBPS NKN internal band width is available in the library.
 - Institute has well-furnished seminar halls with modern presentation facilities
 - Institute has gymnasium, indoor game facilities and playground.
 - Institute has cultural group of students who organize the activities like skit, drama, dance and music and invited the renowned personalities in the related areas are also invited.
 - Facilities for physically challenged students exist in the campus.
 - The University has several hostels to provide accommodation to sizable number of students of UG, PG and Ph.D level.

6.3.6 Human Resource Management

- Institute has an established mechanism for insurance of Employment Notification of regular posts through website/leading dailies and subsequent conduction of interviews. The institution recruits faculty member and staff based on the guidelines provided by UGC regulations and the State Government orders. Recruited faculties are deputed to undergo faculty development program to enhance the Teaching-Learning quality.
- In addition, value addition to academic and research is done through value added courses, seminars, workshops, colloquium and symposia of national and international levels. Academic luminaries in different fields are invited to deliver talk.
- The teachers also get exposure through faculty development programs conducted under programs like TEQIP project.

6.3.7

- University has a set procedure for recruiting faculty members following the UGC norms and the norms of the state government. The number of faculty recruited in the year 2017 is 7.
- Adjunct professors are recruited as per requirement.

6.3.8 Industry Interaction / Collaboration

- The University collaborates with various national and international Institutes / Universities.
- University also introduces industry relevant programmes in association with leading industries through tie-ups. Industry officials visit the campus to conduct seminars/workshops and also take active participation in the various processes. These activities have academically benefited our teachers/students to understand and learn new cutting edge technologies and current market trends.
- To encourage students to take up industry sponsored projects and also encourage involvement of industry experts in academic activities.
- University has signed MOU during the current academic year with Islamic University of Science and Technology Jammu and Kashmir, PRSI, BCC etc
- The world Bank-funded TEQIP-III is an additional strength of the University to improve the quality of its technical education.

6.3.9 Admission of Students

- The advertisement of admission Notification is issued in leading newspapers and it is also uploaded in the University website. The Information Brochure and webpage contain detailed information about the UG and PG courses, Intake of students, eligibility criteria, process of admission and the facilities provided by the University.
- Admission into B.Tech programmes is through the West Bengal Joint Entrance Examination Board.
- Admission to all UG and PG programmes are based strictly on merit basis. Minimum educational qualifications are prescribed for each course with relaxations in case of SC/ST/ PH/OBC candidates as per the National and State Policy on reservations.
- Admission to Ph.D. programme is based on entrance test and subsequent interview as per UGC Guidelines.
- Transparencies are ensured in the admission process since the University strictly adheres to the rules and regulations formulated by the AICTE/State Government/UGC as the case may be.
- The selection of students to the University is done through the admission committee MAKAUT, WB (PGET/CET/WBJE MAT) and counselling thereafter through proper procedure of releasing merit lists (first, second and waiting list). Thus, the transparency is maintained all through the process from the starting of the Notification till the end.

6.4 Welfare schemes for

Teaching	Health Insurance Scheme, Group Insurance Scheme, Festival Advance, PF Loan (Both refundable and non-refundable), Travel Grants for academic purpose, Medical facility in the Campus (Health Centre with three doctors), Banking facility within the campus.
Non-teaching	Health Insurance Scheme, Group Insurance Scheme, Festival Advance, PF Loan (Both refundable and non-refundable), Travel Grants for academic purpose, Medical facility in the Campus (Health Centre with three doctors), Banking facility within the campus.
Students	<p>Students aid fund, Student Medical aid fund, Concession on fees, Protection of girl students at campus and hostels, Boys hostels, internet access free of cost and Medical facility in the campus (Health Centre with one doctor), Financial aid to the students in case of mishap of the earning member of the family.</p> <ul style="list-style-type: none"> • Tuition fees waiver scheme; • Health Insurance; • In case of expiry of the earning member of the students family, scholarship is provided; • Financial assistance is provided to the students of affiliated colleges to attend international seminars/conferences.

6.5 Total corpus fund generated

218.59 lakhs

6.6 Whether annual financial audit has been done

Yes

☒

No

☐

6.7 Whether Academic and Administrative Audit (AAA) has been done?

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	Yes	NAAC	Yes	IQAC
Administrative	No	-	No	-

6.8. Does the University/ Autonomous College declare results within 30 days?

For UG Programmes	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
For PG Programmes	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>

6.9 What efforts are made by the University/ Autonomous College for Examination Reforms?

- The University has a separate Examination section headed by the Controller of Examinations. Various reforms in the form of digitization have been done over the last few years to make the examination process full proof and smooth.
- On-line generation of filling up of exam forms admit card and grade card for the students have been done.
- Repository of results has been made in the website.

Also stated in Section 2.8

6.10 What efforts are made by the University to promote autonomy in the affiliated/constituent colleges?

- During physical inspection of the colleges, different departments of the colleges are encouraged to frame syllabus for onward transmission of the same to the university. Through this effort the concerned department can think to frame the syllabus independently.
- In the university examination, Head of the Institutions are assigned with the jobs of Centre-In-Charge/Officer-In-Charge of the examination & thereby enabling the college to conduct the examination.
- On verification of the accounts during inspection, the aspect of the financial autonomy exercised by the Head of the institutions & other administrative officers are looked after.
- In different academic forums of the university, like EC (Executive Council), General Council (GC), & Academic Council (AC) of the university, the college teachers along with principals are taking part in policy making decisions & thereby they are acquainted with the concept of autonomy.

Teachers of the affiliated colleges are included in the academic forums like BOS, Academic Councils, Examination reforms committee etc. and administrative forums (General Council and Executives Council) in order to train them the essence of autonomy. They also actively participate in those forums with great interest and attention. In the BOS they are acquainted with formation of the syllabus and also approval of the said syllabus by the Academic Council. In the Academic Council the policy formulated time to time in all academic matters are learnt by them. In the examination process they learn how to act as paper setter, moderator, examiner, and reviewer. Compilation of results, declaration of results etc. are also acquainted by them. In the Executive Council they learn how to manage the affairs of an autonomous institution. The affiliated colleges are in constant interaction with the University. This aspect is also playing vital role to acclimatise with the autonomous environment.

6.11 Activities and support from the Alumni Association

- Maulana Abul Kalam Azad University has an Alumni Association. The development of the University would not have been possible without the active participation of its alumni/alumnae.
- Alumni Association takes active part in Reunion Programme.
- Alumni help to enhance curriculum enrichment by providing feedback about Departments and Faculties.
- There are annual cultural activities and reunions to bring the alumni back to their root for supporting the department. They give continuous suggestions to the departments. They are also actively involved in providing placement related information for the support of the outgoing students
- Alumni feedback
- Alumni meeting held annually for betterment of alma-mater

6.12 Activities and support from the Parent – Teacher Association

The Parent-Teacher Association plays a vital role at the time of admission and considers the ragging as a serious matter of observation. The parents are always provided feedback in respect of words. It's a major responsibility of the Parent-Teacher Association to keep a balance between personal and professional life in the competitive environment of learning. The department interacts with the parents on regular basis regarding regularity in attendance and improvement performance of their words

6.13 Development programmes for support staff

- University encourage the support staff to participate/attend cultural programme.
- Support staffs are encouraged to pursue their higher studies by granting academic leave.
- Support stuffs are deployed in various training programme/ orientation programme.

6.14 Initiatives taken by the institution to make the campus eco-friendly

- The University has eco-friendly campus. The University is beautifully embraced by well-maintained greeneries. The whole campus is plastic free and the University has developed a beautiful Eco park where Plantation is done on regular basis. Various awareness programs relating to the environmental protection are conducted by different departments.
- The University students get themselves involved through NSS activities into various eco-friendly and vital activities. Apart from this, the University has taken several other initiatives to make the campus eco-friendly.

- a. Tree plantation done.
- b. University campus declared no-smoking zones.
- c. Proper waste disposal including e-waste.
- d. Solar panel installed.
- e. Fire-extinguisher installed.
- f. Discouraging the use of plastics.
- g. Smoke detectors placed in the institute building.

Criterion – VII

7. Innovations and Best Practices

7.1 Innovations introduced during this academic year which have created a positive impact on the functioning of the institution. Give details.

- 1) Continuous evaluation of the students & more weightage on internal evaluation
- 2) Preparation of Question Bank & Assignment Banks
- 3) Mandatory additional requirement based MOOCs on Swayam Platform
- 4) Introduction of digital initiatives through scanning of answer scripts and subsequent digital evaluations
- 5) Establishment of Nodal centres for imparting training for the students and also promotion of research & placement
- 6) Organization of career fair for students
- 7) Organization of industry academia conclave

7.2 Provide the Action Taken Report (ATR) based on the plan of action decided upon at the beginning of the year

The plan of action mentioned in 7.1 has been implemented as in the given Annexures and announcements made in University Website:

1. Announcements made in website as in Annexure XV
2. Announcements made in website as in Annexure XIX
3. Announcements made in website as in Annexure XVII
4. Plan to digitise evaluation of answer scripts for all 300+ affiliated colleges in the semester examinations discussed in meeting of Executive Council
5. Setting of six nodal centres to develop a research pool involving the 300+ affiliated colleges of the University
6. Organization of career fair for students
7. Organization of industry academia conclave

7.3 Give two Best Practices of the institution (*please see the format in the NAAC Self-study Manuals*)

A. computerized web-based management system (CWBMS) for regular monitoring of all affiliated colleges of MAKAUT, WB.

B. Improvements of students employability of all affiliated colleges through the central placement committee of MAKAUT, WB with the aide of 6 Nodal centers.

Details provided in Annexure XX

7.4 Contribution to environmental awareness / protection

- Observance of World Environment Day with plantation of trees
- A One Day Seminar on Intelligent Earth and Deep Learning was held on 29th March, 2018
- NSS unit organises tree plantation drive every year during monsoon and plants about 30 trees.

7.5 Whether environmental audit was conducted?

Yes

☐

No

☒

7.6 Any other relevant information the institution wishes to add. (for example SWOT Analysis)

SWOT Analysis details provided in Annexure XXI

8. Plans of institution for next year

- To introduce post-graduate courses on technological subjects in demand and interdisciplinary fields.
- To expand the University by recruiting new faculties, improvement of infrastructure, establish well equipped laboratories in specialised areas.
- IQAC will guide transfer and setting up of laboratories from Salt Lake to its new campus at Haringhata
- IQAC will facilitate each department to organise faculty development programme to enhance quality of teaching
- IQAC will organise teacher-student interactive sessions on the process of teaching and learning
- IQAC will initiate process for preparing a roadmap of each department of the University and hence a roadmap for the University and shift academic campus at Haringhata
- IQAC will encourage students for skill development and entrepreneurship for setting up start-ups

Dr.(Mrs.) Somdatta Chakravorty

Somdatta Chakravorty 28/12/2018

Director, IQAC

Prof. (Dr.) Saikat Maitra

Saikat Maitra

Chairperson, IQAC

Vice Chancellor
Maulana Abul Kalam Azad University
of Technology, West Bengal
[Formerly known as West Bengal University of Technology]
Kolkata - 700064



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Significant Activities and contributions made by IQAC

- ☞ Revision of syllabus by involving the representative of Industries.
- ☞ Upgradation of laboratories of all departments.
- ☞ Faculty development programmes at regular interval.
- ☞ Interdisciplinary departmental research promoted.
- ☞ Credit Transfer System under consideration.
- ☞ Remedial coaching to the students provided.
- ☞ Faculty-Industry-Alumni mentoring system introduced.
- ☞ Timely holding of examinations and publication of results.
- ☞ Evaluated copies of answer scripts shown to the students on demand.
- ☞ Students encouraged for self-employment through start-up companies.
- ☞ Encourage International Conferences to be organized by the departments.
- ☞ Faculty and students are encouraged by providing financial support for carrying out innovative research.
- ☞ Field outreach programmes for societal needs were taken up.
- ☞ Collaboration with the national, international institutes and industries are in process.
- ☞ Shifting to the new campus at Haringhata is in progress.
- ☞ Pre-placement training given to the students for better placement.
- ☞ Students encouraged to perform cultural activities.
- ☞ Members of faculty are encouraged to participate in the governance of the University.
- ☞ IQAC is organising meetings with all the stakeholders at regular intervals to know the problems and suggestion thereof for enhancement of quality.
- ☞ Establishment of patent cell of the University.
- ☞ Faculty members were encouraged (a) to get more grants for research from different funding agencies, and, (b) to undertake consultancy.
- ☞ Student mentoring and local guardian system to the outstationed students introduced in each department.
- ☞ Improvement of students' employability of all affiliated colleges through the central placement committee of MAKAUT, WB, distributed in seven Nodal centres in West Bengal.
- ☞ Organizing of projection of different innovative works of students of affiliated colleges, neighbouring

Universities and in-house students. Best projects were awarded by the university.

- ☞ Organizing contest on different technological development.
- ☞ Students' welfare scheme introduced.
- ☞ Encouraging faculty members of the affiliated colleges to pursue Ph.D.
- ☞ Encouragement of affiliated colleges for NBA accreditation by arranging NBA accreditation awareness programmes.
- ☞ Students invited to present research paper in the international conferences/seminars/symposia are provided with financial support.
- ☞ Regular procurement of books and journals including e-books and e-journals.
- ☞ Free access to the resources of the central library of the University to the Students of all affiliated colleges.
- ☞ Art of living and value education classes for all-round development of the students are conducted.
- ☞ Establishment of students' wellness centre of the university.
- ☞ Introduction of CBCS in syllabus is under consideration.
- ☞ Establishment of an Academic Staff College for conducting Orientation Programmes, Refresher Courses, Seminars/Workshops, Symposia, etc. is under consideration.
- ☞ Encouraging consultancy by the faculty for Internal Revenue Generation (IRG).
- ☞ Effort to use renewable energy in place of conventional power.
- ☞ Computer literacy programmes undertaken in the neighbouring areas of the University.
- ☞ Awareness Programmes carried out involving Air pollution, Noise pollution, Water pollution, Water conservation, Global warming and Climate change.

Academic Calendar of the Year



Maulana Abul Kalam Azad University of Technology, West Bengal
 (Formerly, West Bengal University of Technology)
 Simhat, Haringhata, Nadia, 741249

**Academic Calendar of UG and PG
Courses for the Year 2017-2018**

Odd Semester		New Batch	Continuing Batch
1.	Commencement of Academic programme	1st August, 2017	July 26, 2017
2.	Admission activities (for ensuing new students) will be completed by	August 16, 2017	N.A.
3.	Registration activities (for ensuing newly admitted students for the session 2017-18) will be completed by	September 15, 2017	N.A.
4.	First Test Slot	Sept. 18 to 22, 2017	Sept. 18 to 22, 2017
5.	Part Examination for the courses BHMCT (5A Semester) & BBM (H) in Hospitality Management (3A Semester)	Sept. 19 to 23, 2017	Sept. 19 to 23, 2017
6.	Second Test Slot	Nov. 13–18, 2017	Nov. 13 to 18, 2017
7a.	Practical Examinations & Viva-Voce	Nov. 21–30, 2017	Nov. 21 to 30, 2017
7b.	Theory Examinations	Dec. 5 – 23, 2017	Dec. 6–23, 2017
8.	Inter Semester Break	Dec. 24, 2017 to Jan. 11, 2018	Dec. 24, 2017 to Jan. 11, 2018
9.	Publication of Result	Results will be announced in the University Website in February 2018	
Even Semester		For continuing batch	
1.	Academic Programme commences	January 11, 2018	
2.	First Test Slot	March 7 to March 14, 2018	
3.	Second Test Slot	May 2 to May 8, 2018	
4(a).	Practical Examinations & Viva-Voce	May 9 to May 16, 2018	
4(b).	Theory Examinations	May 22 to June 9, 2018	
5.	Inter Semester Break (Summer)	June 12 to July 12, 2018	
6(a).	Publication of Result (Final Semester)	Results will be announced in the University website in July 2018	
6(b).	Publication of Result (Other than Final Semester)	Results will be announced in the University website in August 2018	
During Inter-Semester-Break (Summer), Practical Training (where applicable) may be conducted.			

Visit websites www.wbutech.net & www.wbut.ac.in for announcements regarding Registration & Examinations time to time.

Alumni Feedback Format



Maulana Abul Kalam Azad University of Technology, West Bengal
 (Formerly known as West Bengal University of Technology)
 BF 142, Salt Lake City, Sector I, Kolkata 700 064

Alumni Email ID: makautwb.alumni@gmail.com

ALUMNI FEEDBACK FORMAT

ESSENTIAL DETAILS

Alumni Name			
Father's Name			
Date of Birth (DD/MM/YY)			
Year of Passing Out		Department	
Permanent Address			
Contact No.		Mobile No.	
E-mail ID			
Present Organization			
Designation		Present Location	
Are you a member of the Alumni Association	Yes/No		

Tick (✓) at the appropriate box as per your opinion

Sl. No.	Features	Poor (01)	Fair (02)	Good (03)	Very Good (04)	Excellent (05)
1.	General ambience and Academic Environment					
2.	Quality of Faculty and Staff					
3.	Infrastructure, Laboratory & Workshop facilities					
4.	Availability of Library Books and Journals, duration of reading time in Library					
5.	Learning outcome – useful and relevant in present job market and in your present					

	job					
6.	Support for industrial training and placement					
7.	The University/Department handles student grievances and complaints properly					
8.	Facilities of canteen, common room, sports and other student amenities					
9.	Compared to other Institutes of your friends, assess your own institution					
10.	Communication of the University with you					

Most Memorable moment in the University:

<hr/> <hr/>

Suggestion for improvements:

Department (s) _____ _____ University _____ _____
--

DATE:

SIGNATURE

Parents' Feedback Format



Maulana Abul Kalam Azad University of Technology, West Bengal
 (Formerly known as West Bengal University of Technology)
 BF 142, Salt Lake City, Sector I, Kolkata 700 064

Parents' Feedback Format

Name of the Guardian: _____

Address: _____

Mobile No: _____ **Email:** _____

Profession: _____

Name of the ward: _____

Course of Study: (B.Tech/M.Tech/M.Sc./ Integrated Ph.D) _____

Duration of Study of Ward: _____ **To** _____

Sl. No.	Features	Poor (01)	Fair (02)	Good (03)	Very Good (04)	Excellent (05)
01.	The University provides a caring environment for teaching-learning & research					
02.	Discipline maintained in the academic departments					
03.	Contact between the teacher and student for evaluation and other performance of the student					
04.	Care taken by the University academically and financially when the student needs most in exigency					

05.	Satisfaction level in the matter of communication with the University					
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Employers' Feedback Format



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly known as West Bengal University of Technology)
BF 142, Salt Lake City, Sector I, Kolkata 700 064

Employers' Feedback Format

Dear Madam / Sir,

We like to state that, for NBA (Accreditation) purpose, we need to send a performance report of our Ex-students / Alumni who are duly employed with your esteemed organization. We would appreciate if you can spare a few minutes of yours and return this form with comments:

Section I: Please fill in the following information

Name of the Employee	
Company / Establishment	
Position held	
Email of Employee	
Mobile / Telephone	

How many MAKUT, WB in-house graduates have you employed so far? _____

Section II: Programme Outcomes

The following are the Program Outcomes of the B.Tech / M.Tech / M.Sc Programme. From your experience with our graduates please rate them (on a scale of 1 to 5) as to whether or not they were successful in achieving the Programme Outcomes. Please tick (✓) in the appropriate box.

- (a) **The graduates attained an ability to apply knowledge of mathematics, science and engineering**

Poor (01)	Average (02)	Good (03)	V. Good (04)	Excellent (05)

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- (b) The graduates attained an ability to design and conduct experiments as well as, to analyse and interpret data, and functioning on multidisciplinary teams

Poor (01)	Average (02)	Good (03)	V. Good (04)	Excellent (05)

- (c) The graduates attained an ability to identify, formulate, and solve engineering problems in a more efficient and effective way

Poor (01)	Average (02)	Good (03)	V. Good (04)	Excellent (05)

- (d) The graduates attained an understanding of professional and ethical responsibility

Poor (01)	Average (02)	Good (03)	V. Good (04)	Excellent (05)

- (e) The graduates attained an ability to communicate effectively

Poor (01)	Average (02)	Good (03)	V. Good (04)	Excellent (05)

Section III: Comments

Please feel free to comment on the MAKAUT, WB graduates that you have supervised in terms of their professional qualities and any specific areas of strengths and weaknesses.

--

Please let us know about any suggestion or advice that you may have to help us in the future to improve the quality of our programmes,

Thanks & regards,

Head

Training & Placement Cell

Students' Feedback Format for Teaching Assessment



Maulana Abul Kalam Azad University of Technology, West Bengal
 (Formerly known as West Bengal University of Technology)
 BF 142, Salt Lake City, Sector I, Kolkata 700 064

STUDENTS' FEEDBACK FORMAT FOR TEACHING ASSESSMENT

UNDERGRADUATE / POSTGRADUATE STUDENT QUESTIONNAIRE

COURSE OF STUDY: B.Tech. / M. Tech. / M. Sc./ Integrated Ph.D

YEAR OF COURSE: _____ **Year** _____ **Semester** _____

DEPARTMENT: _____

TEACHER (NAME): _____

Course Provision: Tick (✓) at the appropriate box as per your opinion

Sl. No		Poor (01)	Fair (02)	Good (03)	Very Good (04)	Excellent (05)
1.	The teacher explained the learning goals and teaching plan at the beginning of the first lecture, and they started developing the subject in a logical sequence.					
2.	The subject matter was well organized and well prepared by the teacher beforehand; communicated effectively.					
3.	The teacher aligned learning activities with course objectives / outcomes.					
4.	The teacher was enthusiastic and passionate about teaching, knowledgeable in the subject and encouraged students to think critically.					
5.	Tests, assignments and assessments (grading) were fair enough during the semester.					
6.	The teacher could control the class, create a conducive atmosphere and responded to queries clearly.					

7.	The teacher utilized teaching aids as and whenever necessary.					
8.	The teacher provided opportunities to the students for participation in the learning process.					
9.	The teacher provided enough reference (both addl. Books & journals) for further study					
10.	Are you happy with the outcome of the course?					

Score _____ out of maximum 50

Laboratory/Workshop/Practical (wherever applicable): Tick (✓) at the appropriate box

Sl. No.		Poor (01)	Fair (02)	Good (03)	Very Good (04)	Excellent (05)
1.	The teacher explained the basics of hands-on working in the laboratory / workshop; explained the topics of experiment covering the subject and schedule of laboratory/ workshop experiments on the first day					
2.	The teacher(s) and the laboratory assistants were passionate to provide the experiment manual and to help in carrying out the experiment					
3.	The laboratory Report Book was regularly checked and graded by the teacher					
4.	Quality of Lab work was satisfactory					
5.	Express your opinion on assessment and grading in the lab work					

Score _____ out of maximum 50

Project Work (wherever applicable): Tick (✓) at the appropriate box

Sl. No.		Poor	Fair	Good	Very Good	Excellent
1.	Your comments on distribution of project work on the topic of your choice					

2.	Your comments on availability of facilities (Hardware, Software, Journals) and technical support during the work					
3.	Your observation on the supervision of the project work	Poor (03)	Fair (06)	Good (09)	Very Good (12)	Excellent (15)

Suggestion (optional) from the UG/PG students:

There may be areas of activity that you may feel missing from the format or that does not fit into any specific category but upon which you like to comment

Please feel free to do so here

- Suggestions for improvement of teaching of the subject you studied
- Suggestions for improvement of the scheduling and organization of the subject
- Suggestions for any activity of the University which may help in planning your academic programme
- Suggestions for improvement of the quality of lecture / tutorials / practicals / seminars
- Suggestion for improvement of the communication of the University with you

Alumni Feedback Analysis

Analysis of Alumni Survey highlights that while it might be necessary to include certain professional courses as required by the industry professionals, the students would appreciate more practical classes for courses with more industry demand. The following features were evaluated:

- (a) General ambience and Academic Environment
- (b) Quality of Faculty and Staff
- (c) Infrastructure, Laboratory & Workshop facilities
- (d) Availability of Library Books and Journals, duration of reading time in Library
- (e) Learning outcome – useful and relevant in present job market and in your present job
- (f) Support for industrial training and placement
- (g) The University/Department handles student grievances and complaints properly
- (h) Facilities of canteen, common room, sports and other student amenities
- (i) Compared to other Institutes of your friends, assess your own institution
- (j) Communication of the University with you

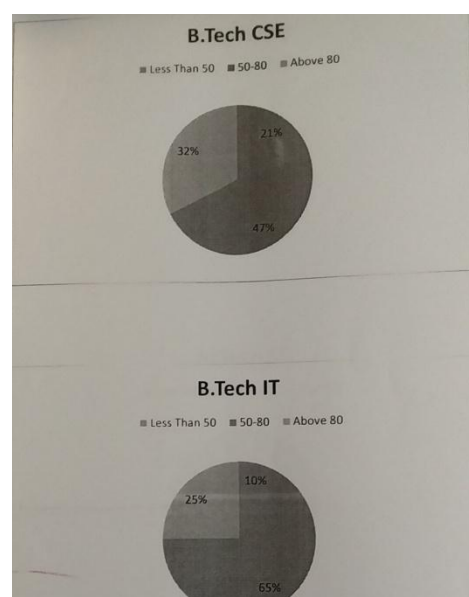
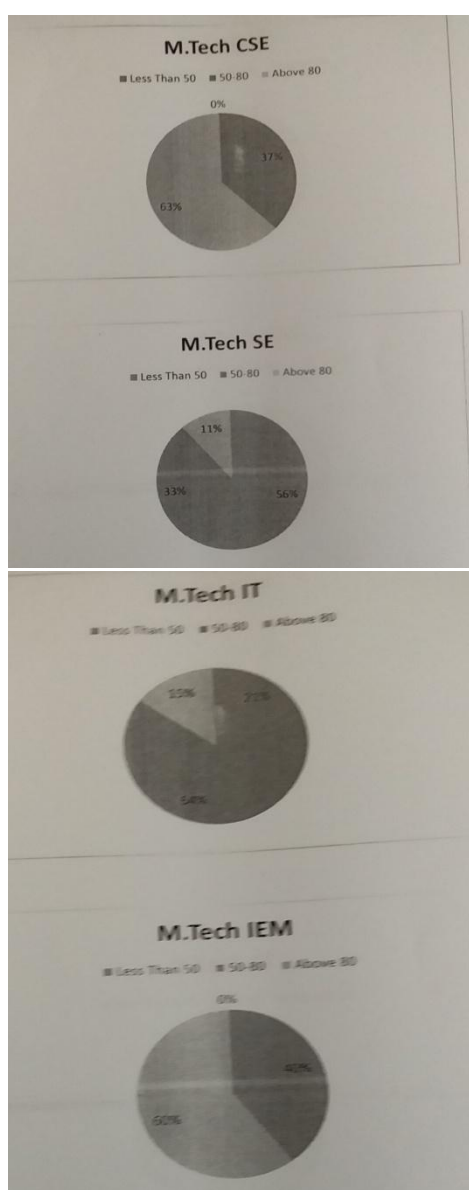
It was found that about 40% of the Alumni were satisfied with the parameters, 23% marked the University as Excellent, 13% assesses as Very Good, 13% as Fair and 10% as Poor.

Parents Feedback Analysis

Parents Feedback has been taken on certain parameters as follows:

- The University provides a caring environment for teaching-learning & research
- Discipline maintained in the academic departments
- Contact between the teacher and student for evaluation and other performance of the student
- Care taken by the University academically and financially when the student needs most in exigency
- Satisfaction level in the matter of communication with the University

The level of satisfaction for guardians of B.Tech. and M.Tech. Students are as follows:



Employers Feedback Analysis

Students Feedback is taken from the corporate houses and academic institutions for feedback on performance of students who have undergone vocational/summer training and internship as well as jobs in the industries. An employer survey questionnaire is given which and their feedback about our alumni is collected and analysed. Their response has been utilised for evaluation of Programme Outcomes.

On analysis it has been found that from their experience with our graduates/post graduates, they have been rated on the basis of the following programme outcomes:

- (a) The graduates/post graduates attained an ability to apply knowledge of mathematics, science and engineering: **Good**
- (b) The graduates/post graduates attained an ability to design and conduct experiments as well as, to analyse and interpret data, and functioning on multidisciplinary teams: **Good**
- (c) The graduates/post graduates attained an ability to identify, formulate and solve engineering problems in a more efficient and effective way: **Good**
- (d) The graduates/post graduates attained an understanding of professional and ethical responsibility: **Very Good**
- (e) The graduates/post graduates attained an ability to communicate effectively: **Very Good**

Generally, all employers are satisfied with the quality of students, are technically sound and are able to cope up with the changing industrial needs.

Students Feedback Analysis

A standard feedback questionnaire is collected from the students every semester, course wise. Feedback mechanism is a well-organized system in the college. The system of feedback collection is manual. Collected feedback is scrutinized by the Institutional Head and Head of the Department. The feedback is quantified. All the parameters mentioned in the feedback form are analyzed. Ability of teaching with respect to each item and comprehensive ability of the teachers are analyzed. All the comments written by the students in the feedback forms are communicated to the respective faculty members along with their feedback levels to know their strengths and weaknesses and to enhance their teaching skills.

The following parameters are evaluated:

- (a) The teacher explained the learning goals and teaching plan at the beginning of the first lecture, and they started developing the subject in a logical sequence.
- (b) The subject matter was well organized and well prepared by the teacher beforehand; communicated effectively.
- (c) The teacher aligned learning activities with course objectives / outcomes
- (d) The teacher was enthusiastic and passionate about teaching, knowledgeable in the subject and encouraged students to think critically
- (e) Tests, assignments and assessments (grading) were fair enough during the semester
- (f) The teacher could control the class, create a conducive atmosphere and responded to queries clearly.
- (g) The teacher utilized teaching aids as and whenever necessary.
- (h) The teacher provided opportunities to the students for participation in the learning process.
- (i) The teacher provided enough reference (both addl. Books & journals) for further study

Major Revision of Curriculum and Syllabi made as per guidelines of AICTE for undergraduate and post graduate degree courses in Engineering and Technology

Maulana Abul Kalam Azad University of Technology, West Bengal (Formerly West Bengal University of Technology) 1st Year Curriculum Structure for B.Tech courses in Engineering & Technology (Applicable from the academic session 2018-2019)

A. Definition of Credit:

1 Hr. Lecture (L) per week	1 credit
1 Hr. Tutorial (T) per week	1 credit
1 Hr. Practical (P) per week	0.5 credits

B. Range of credits :

A range of credits from 150 to 160 for a student to be eligible to get B.Tech Degree in Engineering. A student will be eligible to get B.Tech Degree *with Honours*, if he/she completes an additional 20 credits. These could be acquired through Massive Open Online Courses (MOOCs).

C. MOOCs for B. Tech Honours

The additional 20 credits (for obtaining B. Tech with Honours) are to be gained through MOOCs. The complete description of the MOOCs relevant for the first year course are given in *Annexure-I*. The courses for subsequent years of study will be posted subsequently.

D. Guidelines regarding Mandatory Induction Program for the new students

All concerned are requested to follow the guidelines given in *Annexure-II* (Notice dt.06/12/2017) concerning Mandatory Induction Program. The colleges/ Institute may also refer to the AICTE Model Curriculum for Undergraduate Degree Courses in Engineering & Technology (January 2018) -Volume I (Page No.31-38), if necessary.

E. Mandatory Additional Requirement for earning B. Tech Degree

All concerned are requested to follow the guidelines in *Annexure-III* concerning Mandatory Additional Requirements.

F. Group division:

Group-A:

Chemistry based subjects: [Bio-Technology, Food Technology, Leather Technology, Textile Technology, Ceramic Technology, Chemical Engineering and any other Engineering that chooses to be Chemistry based] + Physics based subjects: [Mechanical Engineering, Production Engineering, Civil Engineering, Automobile Engineering, Marine Engineering, Apparel Production Engineering, Computer Science & Engineering, Information Technology.]

Group-B:

All Physics based subjects which are also Electrical & Electronics based [Electrical Engineering, Electronics & Communication Engineering, Applied Electronics & Instrumentation Engineering, Power Engineering, Electrical & Electronics Engineering, Bio-Medical Engineering, Instrumentation & Control Engineering]

**Provision of Online Courses for 2nd Year, 3rd Year and 4th Year B. Tech Courses of
IT and CSE for Additional Credit Earning**

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

**List of Online Courses for 2nd Year, 3rd Year and 4th Year B.Tech Courses of IT and CSE For
Additional Credit Earning**

Year	Basket of Courses	Duration	Credit	Offered by
2nd Year	Introduction to Computing for Data Analysis with Python	6 weeks	3	Edx
	Web Application Development	6 weeks	3	Course era
	Introduction to Design Thinking	5 weeks	3	Edx(Microsoft)
	Introduction to Data Modelling	4 weeks	2	Edx(Microsoft)
	Foundation of Data Structures	6 weeks	3	Edx (IIT Bombay)
	Cyber Physical Systems	6 weeks	3	Edx
	The Bits and Bytes of Computer Networking	4 weeks	2	Courseera(Google)
	Bayesian Statistics: Techniques and Models	5 weeks	3	Courseera(University of California)
	Introduction to Cisco Networking	4 weeks	2	Courseera(CISCO)
	Using Databases with Python	5 weeks	3	Courseera(Michigan University)
3rd Year	Ethical Hacking	8 weeks	3	Udemy
	Data Communications and Network Services	4 weeks	2	Courseera(CISCO)
	Functional Programming in Scala	6 weeks	3	Courseera
	Introduction to Computational Thinking and Data Science	10 weeks	4	Edx(MIT)
	Neural Networks	14 weeks	4	Courseera

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

**List of Online Courses for 2nd Year, 3rd Year and 4th Year B.Tech Courses of IT and CSE For
Additional Credit Earning**

	Bitcoin and Cryptocurrency Technologies	11 weeks	4	Courseera(Princeton University)
	Text Mining in Python	4 weeks	2	Courseera(Michigan Univ.)
	Embedded Systems	12 weeks	4	NPTEL
	Pattern Recognition	12 weeks	4	NPTEL
	Virtual Reality	4 weeks	2	Courera(London Univ.)
	Data Mining: Theories and Algorithms for Big Data	14 weeks	4	Edx(Tsinghua Uni.)
	Cloud Computing	5 weeks	3	Courseera(Illinois Univ.)
	Principles of Machine Learning	6 weeks	3	Edx(Microsoft)/
	Machine Learning	12 weeks	4	NPTEL
	Cybersecurity and its 10 domains	7 weeks	3	Courseera(Georgia University)
	Teamwork and Collaboration	3 weeks	2	edX
	Entrepreneurship in Emerging Economies	6 weeks	3	edX
	Design and Analysis of Experiments	12 weeks	4	NPTEL
	Quality Design and Control	12 weeks	4	NPTEL
	Six Sigma	12 weeks	4	NPTEL
	Patent Drafting for Beginners	4 weeks	2	NPTEL
	Patent Law for Engineers and Scientists	12 weeks	4	NPTEL
	Mathlab Programming for Numerical Computation	8 weeks	3	NPTEL
	Teamwork and Collaboration	3 weeks	2	Edx
	Cryptography and	12	4	NPTEL

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

**List of Online Courses for 2nd Year, 3rd Year and 4th Year B.Tech Courses of IT and CSE For
Additional Credit Earning**

4 th Year	Network Security	weeks		
	Big Data Analytics	10 weeks	4	Edx(Adelaide Univ.)
	Artificial Intelligence	12 weeks	4	NPTEL
	Data Science with Python	10 weeks	4	Edx(UCSanDiegoX)
	Neural Networks for Machine Learning	16 weeks	4	Courseera(Universit y of Toronto)
	Deep Learning	6 weeks	3	Edx(Microsoft)
	Internet of Things	12 weeks	4	NPTEL
	Chaos, Fractals and Dynamic Systems	12 weeks	4	NPTEL
	Computer Forensics	8 weeks	3	Edx
	Graph Theory	12 weeks	4	NPTEL
	Data Science for Engineers with R	8 weeks	3	NPTEL
	Social Networks	12 weeks	4	NPTEL
	Biometrics	8 weeks	3	NPTEL
	Robotics: Vision Intelligence & Machine Learning	12 weeks	4	Edx (Pennsylvania Univ.)
	Remote Sensing	12 weeks	4	NPTEL
	Leadership for Engineers	6 weeks	3	edX
	Becoming an Entrepreneur	6 weeks	3	edX
	Compliance in Office 365: Data Governance	4 weeks	2	edX
	Marketing Fundamentals: Who Is Your	4 weeks	2	edX

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

List of Online Courses for 2nd Year, 3rd Year and 4th Year B.Tech Courses of IT and CSE For Additional Credit Earning

	Customer?			
	Strategic Performance Management	8 weeks	3	NPTEL
	Business Analytics for Management Decision	12 weeks	4	NPTEL
	Business Analytics and Data Mining Modeling using R	12 weeks	4	NPTEL
	Consumer Behaviour	8 weeks	3	NPTEL
	Introduction to Research	8 weeks	3	NPTEL
	Services Management- A practical approach	4 weeks	2	NPTEL
	Systems Engineering: Theory and Practice	8 weeks	3	NPTEL
	Soft Skills for Business Negotiations and Marketing Strategies	12 weeks	4	NPTEL

**Provision of Classroom Equivalent Online Courses offered for B. Tech. CSE and IT Courses from
2nd year to 4th year**

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL
LIST OF MOOCS EQUIVALENT OF COURSES OF CURRICULUM FOR CREDIT TRANSFER

**Classroom Equivalent Online Courses offered for B.Tech. CSE and IT Courses from
2nd year to 4th year**

**Semester III (Second year] Curriculum
Branch/Course: Computer Science Engineering/ Information Technology**

Course Title(Theory)	Credit (as in syllabus)	MOOCs Equivalent (Theory)	Provided by	Duration (Credit)	Credit	Name of University/Institution
Values and Ethics in Profession	3	Ethics in Engineering Practice	NPTEL	8 weeks	3	IIT Kharagpur
Environmental Sciences	-	Environmental Studies: A Global Perspective	Edx	6 weeks	3	Curtin University
Biology	2	Introduction to Biology: The Secret of Life	Edx	12 weeks	4	MIT
Analog Electronic Circuits	3	Analog Electronic Circuits	NPTEL	12 weeks	4	IIT Delhi
Digital Electronics	3	Digital Electronics	Courseera	8 weeks	3	Universitat Autònoma de Barcelona
Data structure & Algorithms	3	Programming, Data Structures And Algorithms Using Python	NPTEL	8 weeks	3	CMI
		Data Structure	Edx	6 weeks	3	UC San Diego X

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL
LIST OF MOOCS EQUIVALENT OF COURSES OF CURRICULUM FOR CREDIT TRANSFER

Semester IV (Second year] Curriculum
Branch/Course: Computer Science Engineering/ Information Technology

Course Title(Theory)	Credit (as in syllabus)	MOOCs Equivalent (Theory)	Provided by	Duration	Credit	Name of University/Institution
Numerical Methods	2	Numerical Methods u	NPTEL	8 weeks	3	IIT Roorkee
Formal Language & Automata Theory	3	Automata Theory	Stanford Edx	6 weeks	3	Stanford University
Computer Organization & Architecture	3	Computer Organization and Architecture: A Pedagogical Aspect	NPTEL	6 weeks	3	IIT Guwahati
		Computer Architecture	NPTEL	12 weeks	4	IIT Delhi

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL
LIST OF MOOCS EQUIVALENT OF COURSES OF CURRICULUM FOR CREDIT TRANSFER

Semester V (Third year] Curriculum
Branch/Course: Computer Science Engineering/ Information Technology

Course Title(Theory)	Credit (as in syllabus)	MOOCs Equivalent (Theory)	Provided by	Duration	Credit	Name of University/Institution
Economics for Engineers		Engineering Econometrics	NPTEL	12 weeks	4	IIT Kanpur
Design & Analysis of Algorithms	3	Design and Analysis of Algorithms	NPTEL	8 weeks	3	CMI
Microprocessors & Microcontrollers	4	Microprocessors & Microcontrollers	NPTEL	12 weeks	4	IIT Kharagpur
Discrete Mathematics	4	Discrete Mathematics	NPTEL	12 weeks	4	IIT Ropar
Circuit Theory & Network	3	Circuits and Systems	Edx	5 weeks	2	Massachusetts Institute of Technology
Data Communication	3	Data Communication and Network Services	Coursera	4 weeks	2	Cisco
Digital Signal Processing	3	Digital Signal Processing	Coursera	10 weeks	4	Ecole Polytechnic
		Digital Signal Processing	NPTEL	8 weeks	3	IIT Kharagpur
Object Oriented Programming	2	Object Oriented Programming in Java	Coursera	6 weeks	3	University of California

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL
LIST OF MOOCS EQUIVALENT OF COURSES OF CURRICULUM FOR CREDIT TRANSFER

Semester VI (Third year] Curriculum
Branch/Course: Computer Science Engineering/ Information Technology

Course Title(Theory)	Credit (as in syllabus)	MOOCs Equivalent (Theory)	Provided by	Duration	Credit	Name of University/Institution
Principles of Management	3	Management in Engineering	Edx	8 weeks	3	MIT
Database Management System	3	Database Management System	NPTEL	8 weeks	3	IIT Kharagpur
Computer Networks	3	Computer Networks and Internet Protocol/	NPTEL	12 weeks	4	IIT Kharagpur
		Computer Networks	Udacity	12 weeks	4	Georgia Tech.
Operating Systems	3	Introduction to Operating Systems	Udacity	8 weeks	3	Georgia Institute of Technology
Information Theory Coding	3	Information Theory	Coursera	15 weeks	4	University of Hongkong
		Information Theory Coding and Cryptography	NPTEL	12 weeks	4	IIT Delhi
Computer Graphics	3	Computer Graphics	Edx	6 weeks	3	University of San Diego
Operations Research	3	Introduction to Operations Research	NPTEL	8 weeks	3	IIT Madras
Human Resource Management	3	Human Resource Development	NPTEL	12 weeks	4	IIT Kharagpur
Multimedia	3	Introduction to Multimedia System and Processing	NPTEL	12 weeks	4	IIT Kharagpur

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL
LIST OF MOOCS EQUIVALENT OF COURSES OF CURRICULUM FOR CREDIT TRANSFER

Semester VII (Fourth year] Curriculum
Branch/Course: Computer Science Engineering/ Information Technology

Course Title(Theory)	Credit (as in syllabus)	MOOCs Equivalent (Theory)	Provided by	Duration	Credit	Name of University/Institution
Software Engineering	3	Software Engineering	NPTEL	12 weeks	4	IIT Kharagpur
		Software Engineering	Udacity	12 weeks	4	Georgia Inst of Tech
Compiler Design	3	Compiler Design	Coursera	11 weeks	4	Stanford University
Pattern Recognition	3	Pattern Recognition	NPTEL	12 weeks	4	IIT Kharagpur
Soft Computing	3	Soft Computing	NPTEL	8 weeks	3	IIT Kharagpur
Artificial Intelligence	3	Artificial Intelligence	Edx	12 weeks	4	University of California
		Artificial Intelligence: Search Methods for Problem Solving	NPTEL	12 weeks	4	IIT Madras
Digital Image Processing	3	Fundamentals of Digital Image and Video Processing	Coursera	12 weeks	4	NorthWestern University
		Digital Image Processing	NPTEL	14 weeks	4	IIT Kharagpur
Cloud Computing	3	Cloud Computing	NPTEL	8 weeks	3	IIT Kharagpur
Data Mining	3	Data Mining/	NPTEL	8 weeks	3	IIT Kharagpur
		Data Mining Specialisation	Coursera	12 weeks	4	University of Illinois
Sensor Networks	3	Wireless Adhoc and Sensor Networks	NPTEL	8 weeks	3	IIT Kharagpur
Mobile Computing	3	Mobile Computing	NPTEL	12 weeks	4	IIT Delhi

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Internet Technology	3	Internet Technology	NPTEL	12 weeks	4	IIT Kharagpur
Microelectronics & VLSI Design	3	VLSI Physical Design	NPTEL	12 weeks	4	IIT Kharagpur
Control System	3	Control System	NPTEL	12 weeks	4	IIT Madras

Semester VIII (Fourth year) Curriculum
Branch/Course: Computer Science Engineering/ Information Technology

Course Title(Theory)	Credit (as in syllabus)	MOOCs Equivalent (Theory)	Provided by	Duration	Credit	Name of University/Institution
Organisational Behaviour	3	Organisational Behaviour	Edx	7 weeks	3	University of British Columbia
Project management	3	Project Management for Managers	IIT Roorkee	12 weeks	4	IIT Roorkee
Computer Architecture	3	Computer Architecture	Courseera	11 weeks	4	Princeton University
Natural Language Processing	3	Natural Language Processing	Udacity	12 weeks	4	IBM and Amazon
		Natural Language Processing	NPTEL	12 weeks	4	IIT Kharagpur
Cryptography and Network Security	3	Cryptography and Network Security	NPTEL	12 weeks	4	IIT Kharagpur
Business Analytics	3	Business Analytics & Data Mining Modeling Using R	NPTEL	4 weeks	2	IIT Roorkee
Cyber Law and Security Policy	3	International Cyber Conflicts	Courseera	5 weeks	2	State University of New York
Low Power Circuits and	3	Low Power VLSI	NPTEL	8 weeks	3	IIT Kharagpur

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL
LIST OF MOOCS EQUIVALENT OF COURSES OF CURRICULUM FOR CREDIT TRANSFER

Systems		Circuits and Systems				
E-Commerce	3	Fundamentals of Digital Marketing, Social Media, and E-Commerce	Edx	6 weeks	3	Wharton
Robotics	3	Robotics	Edx	12 weeks	4	University of Pennsylvania

Introduction of Online Courses (MOOCs) for award of B. Tech Honours Degree**Maulana Abul Kalam Azad University of Technology, West Bengal****Notice****1st May, 2018****MOOCs for B.Tech Honours**
(Applicable from the session 2018-2019)**Preamble**

All India Council for Technical Education (AICTE) has introduced Model Curriculum for Bachelor of Technology programme with 160 credits in the entire programme of 4 years, and additional 20 credits will be required to be done for the degree of Bachelor of Technology with Honours. These additional 20 credits will have to be acquired with online courses (MOOCs) as per AICTE. So students will have to complete additional 20 credits through MOOCs within 4 years of time. This creates an excellent opportunity for students to acquire the necessary skill set for employability through massive online courses where the rare expertise of world famous experts from academics and industry are available. Maulana Abul Kalam Azad University of Technology, West Bengal (MAKAUT,WB) has thus decided to introduce AICTE model curriculum for its B.Tech Programmes and suggest baskets for MOOCs available year wise for the four-year long B.Tech programme from the sessions 2018-2019. The basket for MOOCs will be a dynamic one, as courses keep on updating with time. Few essential skill sets required for employability are also identified year wise by MAKAUT,WB. For MOOCs platforms where examination or assessment is absent (like SWAYAM) or where certification is costly (like Coursera or edX), faculty members of the Institutes are to audit the courses and prepare the examination question papers, for the courses undertaken by the students of respective Institutes, so that MAKAUT,WB can conduct examination for the course. The total of 20 credits that is required to be attained for B.Tech Honours degree are distributed over four years in the following way:

For first year	:	8 credits
For second year	:	4 credits
For third year	:	4 credits
For fourth year	:	4 credits

A student of first year has to cover courses from at least three skills :

1. Computer Programing with Python / R
2. Soft skill
3. Ethics

Courses are * marked in the above areas

If a student is unable to cover the credits assigned for the first year, he/she can do these courses in either of the subsequent years, but he/she has to choose the courses from the basket of MOOCs announced by MAKAUT,WB from time to time. The same rule will be applicable for the other years of the programme.

The basket for MOOCs for the 1st year B. Tech for the session 2018-2019 are made available herewith.

By order.

MOOCs for First Year, Engineering and Technology

Sl. No	Course	Provider	Duration	Credits	Name of University / Institution
1.	Presentation Skills: Designing Presentation Slides	Coursera *	4 weeks	1	Tomsk State University
2.	Effective Problem-Solving and Decision-Making	Coursera	4 weeks	1	University of California
3.	Communication in the 21st Century Workplace	Coursera *	4 weeks	1	University of California
4.	Psychology at Work	Coursera *	6 weeks	2	University of Western Australia
5.	Critical Thinking & Problem Solving	EdX *	3 weeks	3	Rochester Institute of Technology
6.	Successful Career Development	Coursera	7 weeks	2	University System of Georgia
7.	Working in Teams: A Practical Guide	edX	4 weeks	1	University of Queensland
8.	Communication theory: bridging academia and practice	Coursera	9 weeks	3	Higher School of Economics
9.	Speaking Effectively	NPTEL *	8 weeks	3	Indian Institute of Technology, Kharagpur
10.	Introduction to Philosophy	Coursera	5 weeks	1	University of Edinburgh
11.	Moralities of Everyday Life	Coursera	6 weeks	2	Yale University
12.	Introduction to Logic	Coursera *	10 weeks	3	Stanford University
13.	Write Professional Emails in English	Coursera *	5 weeks	2	Georgia Institute of Technology
14.	Technical Writing	Coursera	5 weeks	1	Moscow Institute of Physics and Technology
15.	Learn to Program: The Fundamentals	Coursera	7 weeks	2	University of Toronto
16.	The Science of Everyday Thinking	edX	12 weeks	4	University of Queensland
17.	Introduction to Problem Solving and Programming	NPTEL	12 weeks	4	NPTEL
18.	The Science of Well Being	Coursera	6 weeks	2	Yale University
19.	Developing Soft Skills and Personality	NPTEL	8 weeks	3	
20.	Programming Basics	edX	9 weeks	3	IIT Bombay
21.	Introduction to Python: Absolute Beginner	EdX *	5 weeks	2	Microsoft
22.	Inferential Statistics	Coursera *	7 weeks	2	University of Amsterdam
23.	Linear Regression and Modelling	Coursera	4 weeks	1	Duke University
24.	Foundation of Data Structures	edX	6 weeks	2	IIT Bombay
25.	Introduction to Logic	NPTEL	12 weeks	4	NPTEL
26.	Introduction to Probability and Data	Coursera *	5 weeks	1	Duke University
27.	Ethics	NPTEL *	12 weeks	4	
28.	Science, Technology and Society	NPTEL	12 weeks	4	
29.	Creating Innovation	Coursera	6 weeks	2	Macquarie University
30.	Ethical Leadership Through Giving Voice to Values	Coursera *	4 weeks	2	University of Virginia
31.	Creativity, Innovation, and Change	Coursera *	6 weeks	2	Pennsylvania State University
32.	Interpersonal Communication for Engineering Leaders	Coursera	4 weeks	1	Rice University

33	Learn to Program: The Fundamentals	Coursera *	7 weeks	3	University of Toronto
34	Introduction to Mathematical Thinking	Coursera *	9 weeks	3	Stanford University
35	The Science of Everyday Thinking	edX	12 weeks	4	University of Queensland
36	A Life of Happiness and Fulfillment	Coursera	6 weeks	2	Indian School of Business
37	Model Thinking	Coursera	12 weeks	4	University of Michigan
38	Introduction to Philosophy: God, Knowledge, and Consciousness	edX	12 weeks	4	MIT
39	Soft skills	NPTEL *	12 Weeks	4	IIT Roorkee
40	Developing Soft Skills and Personality	NPTEL *	8 weeks	3	IIT Kanpur
41	Indian Fiction in English	NPTEL	12 Weeks	4	IIT Madras
42	Development of Sociology in India	NPTEL	4 Weeks	1	IIT Kanpur
43	Intellectual Property	NPTEL	12 Weeks	4	IIT Madras
44	Essential Statistics for Data Analysis using Excel	EdX *	Self Paced	3	Microsoft
45	Ethics and Law in Data and Analytics	edX	Self Paced	4	Microsoft
46	Climate Change Mitigation in Developing Countries	Coursera *	6 weeks	3	University of Cape town
47	Web Design for Everybody (Basics of Web Development and Coding) Specialization	Coursera	15 weeks	4	University of Michigan
48	Ecology: Ecosystem Dynamics and Conservation	Coursera	5 weeks	1	American Museum of Natural History, Howard Hughes Medical Institute
49	Environmental Studies: A Global Perspective	EdX *	Self Paced	4	Curtin University
50	Introduction to Computer Science and Programming Using Python	edX *	Self Paced	4	MIT, USA
51	Statistics and R	edX *	Self Paced	4	Harvard University
52	Introduction to Programming in C	Coursera *	4 weeks	4	Duke University
53	Java Programming: Solving Problems with Software	Coursera	4 weeks	4	Duke University
54	Grammar and Punctuation	Coursera	4 weeks	1	University of California
55	How to Write an Essay	Coursera *	5 weeks	1	University of California, Berkeley
56	Conversational English Skills	EdX *	10 weeks	3	Tsinghua University
57	Advanced Writing	Coursera *	4 weeks	1	University of California, Irvine
58	Speak English Professionally: In Person, Online & On the Phone	Coursera *	5 weeks	1	Georgia Institute of Technology
59	English for Science, Technology, Engineering, and Mathematics	Coursera	5 weeks	1	University of Pennsylvania
60	English Composition	edX	8 weeks	3	Arizona State University
61	Take Your English Communication Skills to the Next Level	Coursera *	4 weeks	1	Georgia Institute of Technology

Procedure for Continuous Evaluation to award internal marks during a semester



MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL
(Formerly WEST BENGAL UNIVERSITY OF TECHNOLOGY)
Main Campus: NH 12, Haringhata, Post Office - Simhat, Police Station – Haringhata, Pin - 741249
City Campus: BF-142, Sector - I, Salt Lake, Kolkata -700 064

Ref No. Regis/25/4081

Dated: 31.08.2018

The Principal/Director
All Colleges affiliated to MAKAUT, WB

Sub: - Procedure for continuous evaluation to award the Internal Marks during a semester

Dear Madam/Sir ,

Please find attached the procedure for continuous evaluation to award the Internal Marks during a semester to be followed from the 2018-2019 academic session for all semesters. The internal marks for Odd Term 2018-2019 onwards are to be awarded following this procedure.

Sd/-

Dr. Indranil Mukherjee
Registrar (Acting)

Procedure for Continuous Evaluation

Affiliated Institutes are having 30 marks for internal assessment for a course (theory). 70 marks are for End semester Examination.

30 marks are distributed as follows:

Internal Tests: 15 marks

Assignment & Quiz: 10 marks

Attendance: 5 marks

Normally two internal Tests are conducted. It is advised to conduct more tests, if required. If a student does not do well in a test, the student has to be mentored for better performance and additional tests may be conducted, if required. Records of the tests (answer scripts and other relevant docs to be kept in the Department, so that University can cross check.) For internal Tests questions are to be Outcome Based. Avoid questions which involve only memory exercise like stating a law or theorem. Also avoid short notes as they do not focus on any specific outcome.

Assignments are to be given in all of the following forms (each form develops unique skills within the students):

1. Problem Solving—Numeric and conceptual
2. Term paper – A systematic report on a topic to be submitted under the guidance of a faculty member after doing necessary exploration of knowledge on the topic.
3. Mini project – A small project on the topic or problem assigned by the teacher and covered by the course being taught. The duration of the project must not be more than one month.
4. Presentation & Seminar – The student will prepare a PPT on a topic relevant to the course and present with PPT for 10 minutes under the guidance of the faculty teaching the course.

Quiz is to be conducted at regular intervals on the syllabus covered at that point of time. Tutorial or Continuous evaluation slots as described in the course structure are to be utilized for discussion of topics covered, Numerical and conceptual problem solving and conduct of Quiz.

This whole exercise of Internal Assessment has to be carried out within 100 Marks with the following distribution:

Internal Tests: 50 Marks

Assignments: 40 Marks

Quiz: 10 Marks

The marks are to be sent to University and University will convert it into 25 marks. Marks for attendance are to be sent separately.

PRACTICALS

The marks distribution is:

Internal for continuous evaluation -- 40 marks.

End semester exam 60 marks.

For Internal Lab Evaluation, the Viva-voce has to be carried out on the day of the experiment. Lab report to be evaluated by next lab slot. Internal evaluation of Practicals to be considered for 100 marks for each subject. University will scale it down to 40 marks while summing up the total marks.

SESSIONALS

For sessional subjects evaluation is totally internal over 100 marks. Instead of a single evaluation, it is advised to evaluate it over 6 to 9 parts during the progress of the entire course.

Details of marks are to be sent to the University.

Introduction of 3 weeks induction programme for 1st year B. Tech. students

Date: 06.12.2017

Maulana Abul Kalam Azad University of Technology, West Bengal

Guidelines regarding Induction Programme for the new students

(As per Model Curriculum for 1st Year UG degrees courses in Engineering & Technology, November 2017)

To be followed from the 2018-19 academic session

Preamble: Engineering education has evolved globally in a continuous manner to address the twin needs of industry and society. It is now an accepted fact that the institutions imparting technical education should aspire to create manpower who will possess strong technical knowledge and skill, have leadership qualities and be a team player, capable of coming up with innovative solutions and be alive to societal and community concerns.

The aim of the Induction Programme is to acclimatize the students to the environment of their engineering institution, give them a flavour of the exciting new world of education that they are entering, provide them with mentoring schemes, and make them aware of their neighbourhood, society and people. This will allow them to evolve as well rounded individuals.

The following schedule is laid down by the University to implement the three week long Induction Programme:

Week 1	1 st Half	Day 1	Overall introduction of the new students to the Institution, its different Departments & Faculty Members
	2 nd Half	Day 1	(a) Assignment of faculty mentors to the new students (b) Assessment and allotment for mentoring by senior students preferably from the second year
	2 hrs	Day 2, 3, 4, 5	Lectures by eminent personalities on different areas such as (a) Introduction to Engineering (b) Various topics of science and technology (c) Innovation and entrepreneurship (d) Creative and performing arts (e) Social issues
	2 hrs.	Day 2, 3, 4, 5	Participation in Games, Yoga, Meditation etc.
	2 hrs	Day 2, 3, 4, 5	Visit to the different Departments of the Institute
Week 2 (All Days)	2hrs		Scheduled class lectures as per time table.
	2hrs		Students to be conducted through proficiency modules to be prepared by respective Colleges for ascertaining English skills & Computer knowledge of the students

			and to prepare a report on the same
	2hrs		Participation in Games, Sports, Yoga, Creative arts etc.
Week 3	2hrs		Scheduled class lectures as per time table
		Day 1	Visits to neighbourhood locations
		Day 2	Visits to natural spots in adjoining areas to understand the effect of nature on society
		Day 3	Visits to Science Museum / laboratories
		Day 4	Visits to NGOs
		Day 5	

Any other activity, as deemed fit by the Director/Principal of the affiliated Colleges, may be proposed and discussed with the Academic Coordinator of the University, by sending email to the following address: academics.makaut@gmail.com.

Note: 1) If necessary, networking may be established with NGOs to facilitate the different components and aspects of the Induction Programme.

Introduction of Mandatory Additional Requirements for earning B. Tech. Degree

Maulana Abul Kalam Azad University of Technology, West Bengal

Main Campus: Haringhata, Nadia
City Campus: BF-142, Sector-I, Saltlake

Date: 11-June-2018

Notice**Mandatory Additional Requirement for earning under graduate Professional Degree**

Addressing the needs of the industry and the society: Globally, education systems have continuously evolved, in order to address the needs of the industry and the society. It is becoming imperative that every University should create opportunities for the students to inculcate attributes, which are not restricted only to engineering knowledge and acumen. Industry needs professionals who can work successfully in teams, who have leadership qualities, who are alive to social and community needs and who can bring innovation and creativity to their work and who are also digitally proficient. Hence, in order to prepare its students to match these multiple requirements, MAKAUT, WB has created a unique mechanism of awarding Activity Points over and above the academic grades. It is planned that the students at MAKAUT, WB will be able to reap benefits from these activities at their own pace and comfort. It is expected that by the time MAKAUT, WB's students reach their Final Year, they would have developed themselves so well both through their studies in the respective technological field and through their active participation in the co-curricular and extra-curricular activities as also through SAWYAM based learning activities that they would be well-prepared for contributing to building the India and the world of their dreams.

The additional requirement applies to: Every student, who is admitted to the 3/4/5 years Degree program from the academic year 2018-19 onwards *, in addition to the required academic grades is required to earn minimum 75 Activity Points for a three year programme, 100 Activity Points for a four year programme and 125 Activity Points for a five year program, for getting MAKAUT, WB's degree. *(Please see Table 1 for details).*

Duration of the Course	Total duration for earning Points	Minimum Points
3 years	1 st to 3 rd Year	75
4 years	1 st to 4 th Year	100
5 years	1 st to 5 th Year	125

Table – I

These points must be earned on the basis of active participation in co-curricular and extracurricular activities spanning through all the semesters of study. Every student may choose, as per his/her liking, activities in order to achieve the mandatory points (as per Table-II, depending on his/her course duration), before becoming eligible for award of the Degree. These activities can be spread over the years, as per convenience of the student.

* for B.Tech programmes a separate notice has been already issued

Notes:

- Every student shall participate in the co-curricular and extra-curricular activities and produce documentary proof to the designated Faculty Members appointed by the Head of Department / Principal / Director in the respective college. Thereby the student should earn the required Points before *her* she appears for his/ her Final Examinations.
- A student's result of his/her Final Examinations will be withheld until he/she completes the minimum Activity Points by the end of his/her Degree Program.
- In every semester, every student is required to prepare a file containing documentary proofs of activities, done by him / her. This file will be duly verified and Activity Points will be assigned by the teachers as appointed above, at the end of every semester.

- The college will form a 3 members committee and finalize the Activity Points for each student before entering them into the Online Point Entry System (at the URL, as specified by the COE of the University).
- Every student has to earn at least 75, 100 or 125 activity points for 3, 4 or 5 year course respectively. The points students has earned will be reflected in the student's marksheets.

Table II provides a List of Activity Heads and Sub-Activity Heads along with their capping of the Activity Points that can be earned by the students during the entire Course duration.

Sl. No.	Name of the Activity	Points	Maximum Points Allowed
1.	MOOCS (SWAYAM/NPTEL/Spoken Tutorial) (per course)	20	40
2.	Tech Fest/Fest/Teachers Day/Freshers Welcome		
	Organizer	5	10
	Participants	3	6
3.	Rural Reporting	5	10
4.	Tree Plantation and up keeping (per tree)	1	10
5.	Participation in Relief Camps	20	40
6.	Participation in Debate/Group Discussion/ Tech quiz /Quiz	10	20
7.	Publication of Wall magazine in institutional level (magazine/article/internet)	10	20
8.	Publication in News Paper, Magazine & Blogs	10	20
9.	Research Publication (per publication)	15	30
10.	Innovative Projects (other than course curriculum)	30	60
11.	Blood donation	8	16
	Blood donation camp Organization	10	20
12.	Participation in Sports/Games		
	College level	5	10
	University Level	10	20
	District Level	12	24
	State Level	15	30
	National/International Level	20	20
13.	Cultural Programme (Dance, Drama, Elocution, Music etc.)	10	20
14.	Member of Professional Society	10	20
15.	Student Chapter	10	20
16.	Relevant Industry Visit & Report	10	20
17.	Photography activities in different Club(Photography club, Cine Club, Gitisansad)	5	10
18.	Participation in Yoga Camp (Certificate to be submitted)	5	10
19.	Self-Entrepreneurship Programme	20	20
20.	Adventure Sports with Certification	10	20
21.	Training to under privileged/Differently Abled	15	30
22.	Community Service & Allied Activities	10	20

Suggestions from the College Principals will be considered for appending in the above Table-II.

Sd/-

Information Scientist
MAKAUT,WB

Identified broad thrust areas for undertaking PhD programmes in different disciplines

**MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY,
WEST BENGAL**

30th April, 2018

NOTICE

Research scholars and supervisors are advised to pursue the following broad thrust areas for undertaking PhD programmes in different disciplines. The following areas are indicative and not exhaustive.

Research Areas in Mechanical Engineering

1. Biomechanical Engineering & Health
2. Controls & Dynamics of Control Systems
3. Energy Science & Technology
4. Green & Sustainable Technologies
5. Micro & Nano Engineering
6. Combustion & the Environment
7. Transportation Systems
8. Ground Vehicle Systems
9. Manufacturing
10. Multibody Dynamics in Design & Analysis of Rural Engineering Systems
11. Artificial Intelligence Applications in Mechanical Engineering
12. Robotics

Research Areas in Civil Engineering

1. Bridge Engineering
2. Computational Engineering Mechanics
3. Environmental & Water Resources Engineering
4. Geomechanics, Geotechnical & Geoenvironmental Engineering
5. Structural & Earthquake Engineering
6. Transportation System Engineering
7. Damage & Fracture Mechanics
8. Rock Mechanics
9. Stochastic Hydrology & Watershed Hydrology
10. Mechanics of Materials

Research Areas in Electrical Engineering

1. Control, Intelligent Systems and Robotics
2. Communications & Networking
3. Cyber Physical Systems & Design Automation
4. Design, Modelling & Analysis
5. Integrated Circuits & Power electronics
6. MEMS/NEMS
7. Signal Processing
8. Solid State Electronics
9. Optics & Photonics
10. Energy System
11. Sensor & System
12. Data Science

13. Biomedical Devices & Imaging
14. Embedded Systems
15. Energy Efficient Hardware Systems
16. Software Defined Networking
17. Solar Cells & Photovoltaics

Research Areas in Computer Science & Information Technology

1. Artificial Intelligence & Robotics
2. Computational Architecture & Engineering
3. Bio systems & Computational Biology
4. Cyber Physical Systems & Design Automation
5. Database Management Systems
6. Graphics & Multimedia
7. Human- Computer Interaction
8. Operating Systems & networking
9. Programming Systems
10. Scientific Computing
11. Security of Computer Systems & Support for Digital Democracy
12. Quantum Computer
13. Computer assisted education
14. Large scale networking
15. Verification Proofs and Automated Debugging
16. Data Mining, machine Learning and Natural Computation
17. High Performance Computing
18. Signal Processing & Image Analysis
19. Cloud Computing
20. Fog Computing
21. Game theory
22. Automata Theory-Cellular Automata
23. Wireless Sensor network
24. Adhoc Network
25. Accelerated Network technologies
26. Automated Analysis & Verification
27. Computer Graphics
28. Evolvable Hardware
29. Fault tolerated Systems, Diagnostics & Testing
30. Formal Models
31. Hardware Software Co design
32. High Performance Computing
33. Image & video Processing
34. Information & Database systems
35. Intelligent Systems
36. IT security
37. Knowledge technology
38. Networked & embedded system
39. Robotics
40. Supercomputing technologies
41. Speech Data mixing

42. System Modelling & optimization
43. Unconventional Digital Circuits
44. Big data
45. Information Infrastructure
46. ICT for Development
47. Internet Freedom
48. Social Interaction/Networking/Media
49. Block chain & Crypto currency
50. Internet of Things
51. Data Management & Analysis
52. Machine Learning & Deep Learning
53. Cryptography
54. Pattern Recognition
55. Information Retrieval
56. Signal Processing
57. Smart City
58. Social Networks

Research Areas in Electronics & Communication

1. Applied Electromagnetics & RF Circuits
2. Communications
3. Computer Vision
4. Control Systems
5. Embedded Systems
6. Energy Science & Engineering
7. Integrated Circuits & VLSI
8. MEMS & Microsystems
9. Optics & Photonics
10. Plasma Science & Engineering
11. Power & Energy
12. Quantum Science & Technology
13. Robotics & Autonomous Systems
14. Solid State Devices & Nanotechnology
15. Sensor Network Design

Research Areas in Chemical Engineering

1. Catalysis & Reactions
2. Biomolecular Engineering
3. Cellular Engineering
4. Computing & Simulation
5. Nanotechnology
6. Materials
7. Polymers & Complex Fluids
8. Sustainable Energy
9. Micro fabricated Systems
10. Energy & Fuels
11. Environmental Sustainability
12. Petroleum Engineering

13. Process system Engineering
14. Transport, Thermodynamics, Colloids & Interface science
15. Big data and data Science in Chemical Process Industries
16. Artificial Intelligence in Chemical Process Industries

Research Areas in Instrumentation Engineering

1. Novel Actuation & Sensor technology
2. Bio robotics & Bioinstrumentation
3. Control of Complex Systems
4. Precision Instrumentation
5. Autonomous Robotics Vehicle
6. Optics
7. Artificial Intelligence in Process Control
8. Advanced Process Control and Real Time Optimization
9. Analysis & Simulation of very large scale circuits
10. Embedded Control
11. Electromagnetic field computations for building circuits with better performance
12. Data Estimation & filtering
13. Information Encryption and coding error control

Research Areas in Biotechnology

1. Biomaterials
2. Cancer Biotechnology
3. Nanotechnology
4. Microbial & Environmental Biotechnology
5. Diagnostics & Medical Devices
6. Sustainability & Global Health Biotechnology
7. Synthetic & Systems Biology
8. Drug Discovery & drug delivery
9. Cardiovascular Biology & Transplantation biology
10. Developmental Biology & Neurobiology
11. Microbial Genetics, Genomics & Biotechnologies
12. Genomics & Biotechnology of insects of agricultural & medical importance
13. Pharmacology & Toxicology
14. Molecular Microbiology
15. Plant Cell Biology
16. Molecular Basis of Human Pathologies
17. Biochemical Process Engineering
18. Immunology & Nanotechnology
19. Nano biotechnology

Research Areas in Bioinformatics

1. Bioinformatics & computational Biology
2. Genetics & Genomics
3. Systems Biology
4. Structural Bioinformatics
5. Sequence Analysis
6. Text mining and ontologies

7. Computational evolutionary biology
8. Measuring biodiversity
9. Gene expression analysis
10. Protein expression analysis
11. Analysis of mutation in cancer
12. Structure Prediction
13. Modelling Biological systems
14. High throughput image analysis

Research Areas in Applied Mathematics

1. Combinatorics
2. Computational Biology
3. Physical Applied Mathematics
4. Computational Science & Numerical Analysis
5. Theoretical Computer Science
6. Mathematical medicine and Virology
7. Mathematical Physics
8. Fluid Mechanics
9. Control and Dynamical systems
10. Scientific Computing
11. Mathematical Finance
12. Dynamical Systems
13. Optimization
14. Probability & Stochastic process
15. Communication technology
16. Algorithms

Research Areas in Applied Physics

1. Astrophysics & Plasma Physics
2. Atomic , Molecular & Chemical Physics
3. Biophysics
4. Condensed Matter Physics & Material Science
5. Energy
6. Nano science & nanotechnology
7. Optical Physics, Quantum Electronics& Photonics
8. Lasers

Research Areas in Applied Chemistry

1. Synthetic organic & bioorganic Chemistry
2. Preparative main group and transition metal chemistry
3. Organometallic Chemistry
4. Structural organic and inorganic chemistry
5. Cluster Chemistry
6. New synthetic and asymmetric methodology
7. Catalysis & high pressure chemistry
8. Parallel & high throughput synthesis
9. Molecular reaction dynamics
10. Solution State kinetics & reaction mechanism

11. X-ray crystallography
12. NMR spectroscopy (Solution & Solid State)
13. The chemistry of surface & interfaces
14. Functional Materials
15. Fullerene & Carbon nanotube chemistry
16. The chemistry & physics of electronic & photonic materials
17. Supramolecular Chemistry
18. Chemistry of carbohydrates, proteins & lipids
19. Innovative Fluorination Methodology

Research Areas in Industrial Engineering & Management Science

1. Applied Statistics & Statistical Learning
2. Financial Engineering
3. Healthcare Engineering
4. Optimization
5. Quality Design and Control
6. Management Science
7. Logistics & Operations
8. Stochastic Analysis & Simulation
9. Cognition and Decision Making
10. Next Generation Products & Services
11. Computational IE
12. Complex Systems & Networks

Research Areas in Ceramic Technology

1. Thermal & Environmental Barrier Coatings
2. Gel casting & novel fabrication techniques in ceramics
3. Cellular ceramics
4. Solid oxide Fuel Cell Materials
5. Oxide Ferroelectrics
6. Oxide Multiferroics
7. Nanolithography
8. Ceramic thin film and multilayers
9. Ceramic Phase Diagrams
10. Transparent Conducting Ceramics
11. Transparent Oxide Semiconductors
12. Bio ceramics
13. Composites
14. Ceramics in Energy & Environment
15. Nano ceramics
16. Artificial Intelligence in Ceramics
17. Big Data & Data Science in ceramics
18. Optical Ceramics
19. Surface & Interfaces in Ceramics

Research Areas in Textile Technology

1. Nanotechnology
2. Artificial Turf

3. Smart Textiles
4. Functionalization of textile Materials
5. Polymer Technology and Biopolymers
6. 3D textiles and Preforms
7. Textile Architecture

Research Areas in Management Science

1. Managing Technology & Innovation
2. Resource management & Sustainable development
3. Social Entrepreneurship
4. Corporate Responsibility, ethics & accountability
5. Accounting & Finance
6. Rural Management
7. Consumer behavior
8. Advertising & Branding
9. Business ventricles
10. Creativity
11. Cross Cultural & Cross Border Issues
12. Developing Countries & Economics
13. Emerging markets, Marketing Strategy
14. Entrepreneurship
15. Forecasting & predicting
16. Governance
17. Health care & treatment
18. Human Resources
19. Intellectual Property & Knowledge management
20. Management Analysis, Tools & Techniques
21. Environment management
22. Block Chain and Crypto currency
23. Information management
24. Internet and Digital Marketing

Projects in Food Technology thrust areas

1. Application of high pressure technology in Food processing.
2. Ohmic heating in Food processing technology.
3. Microwave technology and microwave assisted Freeze drying.
4. Extraction of starch from non-conventional sources and its modification to change the functional properties of food.
5. Fibre enriched extruded product from fruit sources.
6. Extrusion porosification of Food and its application in the preparation of instant milk Powder.
7. Soya based fermented symbiotic food.
8. Supercritical fluid extrusion .
9. Utilisation of locally available fruits for wine preparation and utilization of by- product in development of bakery and extruded foods.
10. Symbiotic and probiotic frozen product
11. Membrane separation technology for whey processing Enzymatic and chemical modification of whey protein isolate.
12. Anaerobic process of waste water treatment and Biofuel generation

13. Food protein modification and study of surface properties of protein.
14. Biodiesel preparation from waste inferior grade edible oils
15. Inter esterification technology of oils and generation of tailored made plastic fat for use in different bakery and confectionery items
16. Application of inter esterified fat for preparation of Vegetable ice-cream Mallorine
17. Functional food and nutraceuticals and food Fortification
18. Supercritical fluid extraction and flavor Technology
19. Application of distillery waste and fruits peels for edible flexible packaging generation
20. Value addition in Tea
21. Production of Nutritionally balanced ready to eat shelf stable high shelf life food for mid-day meal purpose
22. Production of Bacteriocin a Food grade antibiotics
23. Application of solvent extraction coupling with fermentation in alcohol production to maximize yield and minimize time of fermentation.
24. Pulse electric field, Irradiation technology
25. Value addition of agro waste
26. Food Packaging
27. Application of Technology for food preservation and processing in rural sector
28. Health drinks
29. RTE packaged food development
30. Socially relevant issues pertaining Food Nutrition and safety

Research scholars and PhD supervisors may take up research in the following areas also :

1. Rural Engineering, Technology and Management
2. Addressing issues having Industrial applications
3. Addressing issues having Societal applications

by order

Preparation of Question Bank & Assignment Banks

Maulana Abul Kalam Azad University of Technology, West Bengal

BF-142, Sector-I, Saltlake- 700064

NOTICE

Date : 26-Mar-2018

To
The Principal/Director,
All affiliated colleges under MAKAUT,WB

Dear Madam/Sir,

I am directed by the Honourable Vice Chancellor to inform you that the faculties teaching different subjects at your colleges have to be entrusted with preparation of question papers for creating a centralised question bank. You are requested to send the questions in the following format to *questions.makaut@gmail.com*

For general type questions, the questions should be submitted in the following format

Course Code	Stream	Semester	Subject	Paper Code	Chapter	Question	Level	Marks

For MCQ type questions, the questions should be submitted in the following format

Course Code	Stream	Semester	Subject	Paper Code	Chapter	Question	Option1	Option2	Option3	Option4	Level	Correct Answer	Marks

The levels may be easy, moderate or hard

Marks will be of 1, 2, 3 or 5

For text based question, questions may be sent in excel file format, each paper in different file.

Special request is being sent for early submission of Non-AICTE course questions.

This should be treated as most urgent.

With regards,

sd/-
Information Scientist
MAKAUT,WB

Best Practices of the Institution

- Many of the faculty members of the University are Ph. D degree holders and are actively engaged in researches under financial assistances of different Funding Agencies like AICTE, UGC, DST, DBT, CSIR, ICMR, DST-FIST, BRNS, AYUSH, NTRF, TEQIP and other Government agencies.
 - The Faculty members of the University have been regularly publishing in reputed National and International peer-reviewed journals having high impact factor.
 - Students completing degrees from this University have been enriching the pool of alumni, who are attaining the heights of excellence as professionals in different academic, business and industry organizations of national and international repute like University of Arizona and MIT, USA.
 - Besides the regular curriculum, eminent scientists and academicians of premier research institutes and universities as well as experts from reputed industries from different parts of the country and abroad are invited to deliver lectures on cutting edge areas of science, engineering and technology.
 - This is the only state University in West Bengal with a well established Government recognized Technology Business Incubation Centre (Ekta Incubation Centre) for promoting Innovations and Start-ups.
 - The University also initiated technology transfers and filing of patents.
 - The University has ERP driven cashless financial management.
-
- Application of ICT with modern tools and techniques gives opportunity to improve the teaching learning process of the University
 - The state-of-the-art infrastructure, well developed facilities and space in the University Campus located at Haringhata, and highly qualified and dedicated teachers of the University augurs well for the targeted improvement of the University in near future.
 - The city campus of the University located at Salt Lake, Kolkata is having the opportunities of Industry-Academia collaboration.
 - Through the EKTA incubation centre the university has the scope for developing a number of successful entrepreneurs in the state.

SWOT Analysis

Strength Weakness Opportunity Challenges Analysis

STRENGTH

- The University has an effective and efficient mix of young, dynamic, versatile faculty along with highly experienced, research oriented veteran faculty members with outstanding records in teaching and research.
- This University is the only State Government Affiliating University for imparting Engineering & Management programmes in the state of West Bengal.
- In addition to the Salt Lake campus which is centrally located to cater to the needs of the affiliated colleges, the University has also developed the state-of-the-art academic Infrastructure at Haringhata Campus.
- The residential University Campus located at Haringhata is one of the most attractive destinations for students, researchers, faculty members and professionals across the country.
- The University is actively contributing towards improvement of students' employability through its Placement Cell and through regular interaction with Industries. The Placement of in-house students is quite satisfactory. University is also providing assistance to the affiliated colleges for employment of their students through the Central Placement Committee constituted by the University.

WEAKNESS

- There is space constraint in the city campus of the University located at Salt Lake, Kolkata-700064 resulting in lack of specialized facilities like sophisticated laboratories, animal room, plant tissue culture facility workshops etc. However, these will be taken care of once the Haringhata campus becomes operational.
- There is paucity of faculty members, officers, technical support staff, library staff and office staff. However, the University is in the process of filling up these vacancies in all categories.
- There is not a smooth flow of funds like Central University which is also a predicament to grow rapidly.
- Non existence of Academic Staff College for conducting Refresher course, Orientation Course etc. for the Teachers of the University and Affiliated colleges. However the University authority is planning to start Academic Staff College at Haringhata campus.
- Limited numbers of UG and PG programmes in Engineering & Technology courses are being conducted for paucity of space at presently. However a number of programmes will be introduced in the Haringhata campus.
- The Library can not be kept open beyond the normal University office hours for lack of library staffs. However necessary efforts will be made to keep the Library open on a 24x7 basis at Haringhata campus for the benefit of the students and researchers.

OPPORTUNITIES

- The employment opportunities for engineering graduates are being widened in the context of rapid modernization and emerging technologies in all the manufacturing sectors
- Vast opportunities for Research and Development through the existing M. Tech. programmes and Ph. D. programs in collaboration with the premier Institutes and Universities of National and International repute
- The alumni pool of the University serving in the Country and abroad widens the opportunity of collaboration and network building with other renowned Organizations

CHALLENGES

- Upgradation of University infrastructures i.e. laboratory facilities and space, library and other academic infrastructures keeping pace of modernization and emerging technological upliftment
- Upgradation of knowledge of Faculty members taking into the consideration of rapid growth and technology advancements in industries
- Attracting more Researchers and students with outstanding academic records towards engineering education and research.
- Upgradation and improvement on curriculum keeping in view the technological development in the emerging field.
- To combat with overall stagnation / recession in global manufacturing businesses in terms of employability.
- To provide the consultancy services to the industries in a wider scale.
- To promote the concept of start-up and Entrepreneurship development through our Incubation Centre significantly
- To compete with different Private and International Universities in the field of academics.