



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

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INTERNAL/EXTERNAL ACADEMIC AUDIT REPORT

(ACADEMIC YEAR: 2019-20)

Date of Audit: 19th and 20th May 2020

The Directors of Schools and Heads of Departments gave a presentation on various activities in their Schools and Departments in presence of the Hon'ble Vice-Chancellor of the University.

The Members of the Audit Committee were:

1. Prof. B. B. Paira, Former Professor, Calcutta University
2. Prof. Dulal Chandra Ray, Former Professor, IEST-Sibpur
3. Prof. Gour Banerjee, Principal-The Heritage Academy
4. Dr. Somdatta Chakravorty, Director-IQAC

The Departments under Audit are as follows::

1. All Academic Departments
2. Examination Department
3. Registration Department
4. Finance Department
5. Library
6. Incubation Centre
7. Outreach

The expert members of the Audit Committee observed as follows:

II. The School of Natural & Applied Sciences

Main Activities of the School

- Exploring Online Platforms, like Canvas

B. B. Paira

Gour Banerjee

Chakravorty

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- Migrating to MyPerfectice
- Online Routine
- Internal Assessment Online
- Virtual Labs
- Interactive Simulations
- MOOCs Certification
- Webinars
- Online Student Symposia
- Peer Evaluation
- Special Lecture Series

DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY

1. Curricular Aspects and Teaching Learning

- Question papers of all the subjects were prepared for end semester examination following the guidelines given by COE
- MCQ-type questions were set
- Assignments have been given to students and were collected and checked
- Continuous Assessment: Test, Reports writing,
- Presentations were conducted
- Interacting classes taken using – Myperfectice, Canvas, Zoom, and Whatsapp (Total classes ~ 60 h, classes taken by AB, TG, and CS) • Class tests taken on – Canvas, Myperfectice (3)
- Online courses and virtual lab-work
- Faculties are registered for SWAYAM courses
- For organic practicals, Virtual lab is used using vlab.co.in
- Total number of experiments done – 20

2. Research and Development

- Student Symposium Organised by the Department of Materials Science & Technology

Students' Symposium

- Total Participants: 74+ (including guardians)
- Special guests from IITH, IITR, IISERK, CU
- Evaluation of student participants
- Media news: BARTAMAN 18-05- 2020
- WIP: Webinars and Web Conference on Materials Science
 - IIT Roorkee (Department of Materials and Metallurgical Engineering)
 - Rush University, Chicago (Rush Medical College)
 - NHS- UK

Research

B. D. Panigrahi *Prof. Dr. S. K. Saha*

Chakraverty



- Covid-19 drug designing using online docking servers
- One manuscript is published in ChemRxiv and under review by a journal
- One manuscript is under preparation

3. Future Planning

- Preparing present course materials for both online and offline teaching
- Creating a database to increase new enrollments
- Arrange seminars/symposiums involving nearby college students
- Arrange webinars involving experts in different fields across India and abroad
- Research planning based on online available sources

Department of Food Science & Technology

- Dr. Sebak Ray is the only faculty member.
- Teaching-Learning for the MSc Program Reported being in Progress Alright Online.

Dept. of Pharmaceutical Science & Technology

- PCI Approval (Provisional) Obtained for MPharm.
- Two Specializations: – Pharmacology (Intake 15) – Pharmaceutics (Intake 15)
- WIP: A Program on Pharmacovigilance to be offered Jointly with WIPRO.

Department of Forensic Science

- Ongoing UG, PG, and Other Courses

Under Graduate Courses (Ongoing)

- B.Sc. In Forensic Science

Post Graduate Courses (Ongoing)

- M.Sc. In Forensic Science
- Digital Pedagogy Methods (Implemented):

For UG and PG Courses

B.Sc. In Forensic Science

- Online classes through My Prefectice Whiteboard Platform (preferred). Sometimes through G-Suite (Google Meet) or Zoom or Cisco Webex.
- Online Course Material – uploaded in our own LMS i.e. in My Prefectice also send directly to the students through email or stored in Common Cloud.



A. B. Paul
Shahmawthy

- Class Assessment Test / Assignment for continuous evaluation process through our own LMS.
- Video lectures from concerned websites and teachers collected and shown to students.
- Digital Content identified for students.
- Encourage all students for MOOCs courses as identified by us - start hands-on help to complete their sessions
- Laboratory Procedure – Through the digital platform and Virtual Laboratory only • Question Bank preparation (almost complete)

M.Sc. In Forensic Science

- Online classes through My Prefectice Whiteboard Platform (preferred). Sometimes through G-Suite (Google Meet) or Zoom or Cisco Webex.
- Online Course Material – uploaded in our own LMS i.e. in My Prefectice also send directly to the students through E-Mail or stored in Common Cloud.
- Class Assessment Test / Assignment for continuous evaluation process through our own LMS.
- Video lectures from concerned websites and teachers collected and shown to students.
- Digital Content identified for students.
- Encourage all students for MOOCs courses as identified by us - start hands-on help to complete their sessions
- Laboratory Procedure – Through the digital platform and Virtual Laboratory only.
- Question Bank preparation (almost complete)

Future Plan of the School

1. MSc in Applied Mathematics with Specialization in Medical & Epidemiological Data Analytics
2. Increasing Admission Numbers:
3. Building Relationships with Schools and, Importantly, Colleges.
 - Passive Promotion at Schools and Colleges through Online Workshops on Topics like "The Science Underlying Sanitization".
 - Actively Inviting Participation from District Colleges in Regularly Organized Student Symposium Online.
 - Viral Promotion with Digital Infographics and Short Movies.
 - Other Revenue Stream



B. B. Panigrahi

Dr. Ananta Kumar Das

Dr. Ananta Kumar Das

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Summary of Activities

- It has been seen that the average attendance of the students during these days has increased a lot.
- For example for the M.Tech in Material Science & Technology, 1st Year students' attendance percentage improved nowadays nearly to 100% which was around 60-70% before.
- Also, it can be observed that students are getting interested in online classes rather than the conventional chalk-and-talk method of teaching.
- These days most students have a smartphone which is their constant companion, so using this and the ease of taking classes at sitting home is insisting they take the classes more.
- Additionally University sponsorship for the different courses offered by Coursera has made a huge impact on the students. Free learning insists they indulge in more courses through MOOCs.

500+ Hours of Online Teaching-Learning

Hyperlinked Course Pack Preparation by Teachers

'Peer Evaluation' by Students

1000+ MCQ Preparation

20+ MOOCs Certificates by Faculty Members

10/9 MOOCs Certificates by Students (MST only)

7+ Online Events (Webinar, Symposium, etc)

30+ Virtual Lab Sessions

3+ Interactive Simulation Sessions Online

4+ Online Presentation Sessions by Students

Weekly Participation by Students in SLS

Increasing Student & Faculty Engagement

II. School of Management Sciences

- Courses offered on campus

Postgraduate programs:

- MBA:

MBA in Hospital Administration

MBA in Waste Management and Social Entrepreneurship -

MBA in Innovation, Entrepreneurship, and Venture Development

Undergraduate programs:

- BBA

BBA in Business Analytics



S. B. Singh *G. B. Singh* *Chakraverty*

BBA in Hospital Administration

BBA in Travel and Tourism Management

BBA in Risk Management

Partnership programs in collaboration with three institutions offering a number of courses in Business Management, Hotel Management, Hospitality Management, etc.

- Training, Consultancy, and Project Activities
- Undertaken Management Development Programme at Braithwaite
- CSR Impact Analysis Project funded by GRSE
- Two projects funded by TIFAC
- Setting up of Community Radio Centre
- One Project to be funded by West Bengal Power Development Corporation Ltd.

Activities

- Online classes.
- Student Feedback
- Internal Assessment
- Preparation of Questions of Multiple Choice Type
- Periodic Group Meetings to monitor these activities

New Courses Planned

- BBA in Digital Marketing and other similar verticals (like e-commerce and m-commerce) – in collaboration with Cambridge Marketing College
- Partnership programs in collaboration with EDI, BSE Institute, JT Aviation Academy
- Executive MBA in association with ICWAI in purely online mode.
- Executive MBA for people working in the Hospitality industry in online mode.
- Webinar launched in association with Calcutta Management Association
- Taking some of the training courses like Management Development Programmes online.

Future Planning-1

- Stress on Entrepreneurship Essential to inculcate an entrepreneurial culture among ALL the students. They may not always venture out on their own. But would thus imbibe the spirit of innovation, self-reliance, and risk-taking. Would be of immense benefit later.
- New teaching-learning paradigm Teachers to act as facilitators/mentors rather than engaged in “completing the syllabus”. To put maximum emphasis on the use of digital learning resources



[Handwritten signatures]
Chakraverty

- Webinars should be extensively used as teaching-learning tools thereby expanding the availability of faculty resources. Students to be encouraged to earn certificates from the online courses offered by reputed Universities
- Emphasis on the development of skill sets of students and use these to set up a win-win situation for all the stakeholders in the system.

Future Planning- II

- Need to establish a viable Revenue Model. Cash is King!
- Identify the key drivers of financial success, set up a causal business model, and the service project chain, and spell out the drivers.
- Construct reliable measures for the key drivers and identify the linkages in the business model. The Action Points Cultivate a spirit of entrepreneurship and flipped/blended learning among the students.
- Make students aware of cutting-edge technologies with a strict emphasis on digital teaching-learning, analytics, and data-driven decision-making processes.
- Expose the students to project-based experiential learning.

III. School of Energy and Environmental Sciences

Academic programs

On-going programs:

- M.Tech Renewable Energy (Intake Capacity: 18)

Activities during the pandemic situation

Academic activities:

- Department of Renewable Energy has started online teaching and learning activities right from the third week of march.
- Initially online classes on different subjects for 2 nd semester M.Tech program have been conducted via zoom and assignments and quizzes have been carried out in CANVAS and now almost all the activities are performed in Myperfectce by our faculties.
- Department of Renewable Energy has been conducting several internal assessments and mock tests of all courses included in the M.Tech program via Myperfectce.
- Department of Renewable Energy has emphasized audit courses on the online platform Coursera to the M.Tech students.

Activities during this pandemic situation



B. B. Panigrahi

Gourang Chakravorty

- Guest faculties of the department are also involved in online teaching learning via different digital platforms.
- All the lab experiments included in the 2nd semester have been performed in Virtual labs available with MHRD and Amrita University.
- Department of Renewable Energy always encourages students to learn different design software on renewable energy like PVSol, Homer Software, AutoCAD, Matlab etc.
- Students of M.Tech in Renewable Energy are involved in several online courses on IoT, Artificial Intelligence, and Entrepreneurship development apart from their semester subjects.
- Faculties are constantly interacting and monitoring the students online learning progress as well as continuously guiding for psychological and moral boosting in this pandemic situation.
- So far, more than 90% of the syllabus of all papers(both theoretical and practical) in the current semester has been completed successfully.

Immediate measures undertaken

- MCQ questions for the end-semester examination are already prepared and under moderation.
- All the students have successfully attended online mock tests and internal assessments without any difficulty. So there will be no problem in conducting the end-semester examination on the online mode by the University.

Organization of Webinars/Online Symposiums

- Department of Renewable Energy is going to organize shortly an online student symposium on the theme “Prospective Areas of Renewable Energy Harvesting to Meet Future Energy Demand”.
- Department of Renewable Energy & Department of Environmental Science are jointly planning to organize webinars on different topics like entrepreneurship development, policies and regulation relating to Energy and Environment, and waste effluent treatment.

Action Plans

- Tie up with different online platforms to provide the best teaching-learning facility for the proposed programs.
- Collaboration with different academic & research institutes, government bodies, and companies for the successful implementation of new courses and strengthening of the exchange program.



B. B. Paria

G. B. Paria

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- Giving more emphasis to the use of free simulation and design software for practical classes.
- Buying of lab equipment and simulation software on resuming normal academic activity.
- Departments are ready to start the new academic session on and from September 2020.

IV. School of Computational Science

Plans during the Pandemic

- 75% of the syllabus is complete till 19.5.2020
- Online platforms used Zoom, Google Meet, and Myperfectice.
- LMS used for assignment submission Canvas and Myperfectice.
- Online video lectures developed by CSE and IT faculty members and uploaded to YouTube channels.
- Students submitted scanned written copies for the internal exam.
- Student attendance is approx. 90% of Project and practical exams in June 2020 scheduled

Online Lab classes

- Vlab, Amazon AWS
- Google Cloud Platform
- Matlab Virtual Lab and Simulink
- Raspberry Pi 4 and Arduino Uno kit. NS2 /NS3

Online internship:

- TCS INNOVATION LAB,
- Internshala, Eduskills
- COGNIZANT TECHNOLOGY SOLUTIONS.

Online exam

School is ready to complete the online exam during June /July 2020.

MCQ FORMAT (2*20 +1*30=70)

Future planned webinars, seminars, and conferences

- Experts from India and abroad on cloud computing / IoT/ geospatial computing/AI/ Research methodology.
- Google Developer circle, India
- Matlab
- CSI Kolkata Chapter MAKAUT Student Branch



B. B. Paria *Subal Choudhury* *Chakravorty*

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- IEEE 5G Summit, App Design Contest
- Online Springer International Conference on Advanced Computing “ICAC 2020” in Dec 2020 in a Virtual Mode with nominal registration fee of Rs. 1000/- and free for in-house students.

V. School of Biological Science

- Emphasize keeping physical distance but maintaining social relations under stress-less and not in a mentally challenged condition
- To use “online” provision [D-L-P]
- Interact more with the students through Online Teaching
- Online university libraries especially e-books
- Other interactions like one-day simple/informal interaction
- Using My Perfectise platform Repository of online lectures according to subject domain Available 24x7 for the students (read-only mode)
- Repository of online question bank according to the subject domain
- Available 24x7 for the students (read-only mode)
- Online Mock tests and regular exam
- Special emphasis on data sharing and courses related to Job Orientation

Ask students to play a key role on some occasions:

- Computer-based lab with a dedicated server from the university end
- Online examination
- Giving a healthy and friendly environment
- Interaction with eminent persons through Webinar

VI. IQAC

Activities:

- Online Self-Appraisal System
- Self Appraisal Report
- Updated faculty information as per Govt. CAS format
- Daily Task Monitoring
- Classes are taken - Task assignment and monitoring
- Online Learning through Coursera and other Platforms Technology Development in respective subject domain
 - Students: Research Scholars: Faculty Members: Administrative Development Officers:
 - Certification on 30 courses(approximately)
 - Staff Development: Course on ‘Write Professional Emails in Business English’, ‘Financial Markets Firm Level Economics: Consumer and Producer Behavior’



B. B. Datta *Chakraverty*

- Encouraging Entrepreneurial Activities by Students
 - Proposals invited from students for Startup and Entrepreneurship Activities
 - Proposals from M.Tech Students:
 - Automated Trolley for Medicine & Essential Items Delivery in hospitals Food Delivery App (ongoing business activity)
 - Online Portal for Catering to Research Data Requirements for Projects at different locations
 - Proposals from B.Tech Students:
 - Strategizing and Initiating Crowdfunding for Social Work (ongoing NGO activity)
 - Online Book Renting Facility Online Educational Consultant
 - Internship from Home
- Internship Projects have been listed for internal students and for affiliated colleges
- Topics on Artificial Intelligence, Data Security, and Image Processing has been uploaded
- Mapping of Theory and Practical Courses with Online Courses and Virtual Labs
- Courses in Theory of Computer Science & IT have been mapped with MOOC offered online
- Practical courses in Computer Science & IT have been mapped with Virtual Labs online (including wet labs such as Chemistry)
- Encourage Digital Pedagogy amongst Faculty Members during the lockdown
- The demonstration was given to encourage real-time teaching through videoconferencing tools such as CISCO-WEBEX, ZOOM, etc. Activities Planned(Academic)
- Focus on the Generation of e-content by members of faculty(department-wise) Development of in-house virtual labs for ongoing courses
- Focus on the Development of Online Courses and Certification by the University
- Webinars and Online Faculty Development Programme for the training of Faculty members
- Workshop for Training of faculty members on Online Teaching-Learning Tools and Technologies for different Departments
- Design of an integrated Online Student Feedback Mechanism Digital Library for Teachers and Students in each Department Online Grievance Redressal System for Stakeholders

VIII. Venture, Entrepreneurship, Development & Innovation Cell (VEDIC)

Present Status

- EOI already worked out for Hand Sanitizer Project
- Nine Proposals were received from different entrepreneurs
- Implementation is in the process



B. B. Panigrahy *Chalmers*

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- Meeting to take place with the Entrepreneur's Approval of the projects as per guidelines
- An amount of Rupees 50000 received from FSME

Future Planning:

- Exploring avenues of Funds and their sources for Students and Entrepreneurs
- MUDRA Bank and start-up schemes and WBFC New Government Policy for Startup
- Proposal to Ministry of defense for training. MDP /Webinar and other activities
- VEDIC – Networking Tie up with NEN (National Entrepreneurship Network)
- Federation of Small Medium Industries Hooghly Traders Association Confederation of West Bengal Traders Association Welfare society of Jalan Complex EDII Ahmadabad
- Women entrepreneurs and associations at the micro level Tie up with other agencies

Entrapedia

- Motivation for Entrepreneurship or “ Idea Generation”
- E- Talk & Workshop on – Setting Startup in Ed-Tech Mentoring Session “Hangout with Successful Start-ups” “How to plan for Start-up and legal and Ethical Steps Business Model Canvas (BMC) Social Innovations and Social Entrepreneurship How to develop a business plan for entrepreneurial finance


Observations made by the Expert Members of the Audit Committee


For each program in each Department of all Schools, it was generally observed that the recommendations are to be implemented immediately by the Heads of Departments and any difficulty in execution is to be brought to the notice of the Competent Authority.

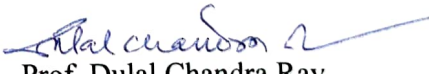
Recommendations:

- Need for Improvement in Faculty Student Ratio
- State of art Labs and Smart Classrooms to be examined by the respective Departments
- Orient Faculty and Students toward Outcome-based Education.
- Introduction of more Industry oriented courses

Signatures of Expert Members of the Audit Committee:


Prof. B. B. Paira,
Former Professor, Calcutta University


Prof. Gour Banerjee,
Principal, The Heritage Academy, Kolkata


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Former Professor, IIST-Sibpur


Dr. Somdatta Chakravorty,
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Date: 19th May & 20th May, 2020



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