

शैक्षणिक परिषद की 02/2022-23 बैठक का कार्यवृत्त

**MINUTES OF THE 02/2022-23 MEETING OF THE
ACADEMIC COUNCIL**

01st MAY, 2023



**DEFENCE INSTITUTE OF ADVANCED TECHNOLOGY
(DEEMED TO BE UNIVERSITY UNDER SECTION 3 OF UGC ACT 1956)**

GIRINAGAR, PUNE - 411025

DEFENCE INSTITUTE OF ADVANCED TECHNOLOGY
(DEEMED TO BE UNIVERSITY), GIRINAGAR, PUNE



1/2022-23 MEETING OF THE ACADEMIC COUNCIL
10:00 HRS, MONDAY, 01st MAY 2023

Item.No.	Particulars
1	Opening remarks by the Vice-Chancellor and Chairman, Academic Council
2	Progress/Action taken report on minutes of the last Academic Council meeting
3	Confirmation of the minutes of the last Academic council meeting held on 15 th Feb 2023.
4	Reporting Items- Annexure-1
5.	AGENDA POINTS FOR DISCUSSION Introduction of New Course - M.Sc. programme in Data Science.
6	Introduction of (02) New M.Tech. programmes i.e M.Tech. in Renewable Energy and M.Tech in Green Technology
7	Presentation of Result.
8	Any other point with the permission of the chair a) Proposal for starting new Program- Integrated Ph.D. b) Exit option for Ph.D. students after completion of three years (Either by institute or student). Student may be awarded MS(by research) degree, provided student must fulfil credit and other academic requirement as per existing rules and regulations of DIAT for MS(by research)



DEFENCE INSTITUTE OF A DEFENCE INSTITUTE OF ADVANCED TECHNOLOGY
(Deemed to be University under Section 3 of UGC Act 1956)
Girinagar, Pune-411 025

DIAT/F/REG/ACAD/AC/02-2022-23

Dated 01st May 2023

**Minutes of the Meeting of Academic Council held on 01st May, 2023 at 1000 Hrs,
4th Floor Conference Room, DIAT, Pune**

The Following Members were present: -

- | | | |
|-----|--|------------------------------|
| 1. | Dr. C. P. Ramanarayanan
Vice Chancellor | Chairman |
| 2. | Dr. S. K. Singh
DHRD, DRDO HQ, New Delhi | Member
(Thru Video Conf.) |
| 3. | Prof. K. Sudhakar
Dept. of Aerospace Engg, IIT, Bombay, Powai | Member
(Thru Video Conf.) |
| 4. | Prof. Rajeev Srivastava
Dept. of Computer Science and Engg, IIT(BHU), Varanasi | Member
(Thru Video Conf.) |
| 5. | Prof. K. Balasubramanian
Dean (Academics)
HoD, Metallurgical & Materials Engg. & IQAC Director | Member |
| 6. | Prof. K. P. Ray
HoD, Dept, of Electronics Engg. | Member |
| 7. | Prof. A. Kumaraswamy
Dean (Student Affairs) &
Director, School of Robotics & HoD, Dept. of Mech Engg | Member |
| 8. | Prof. P. K. Khanna
HoD, Dept. of Applied Chemistry | Member |
| 9. | Prof. G. Raghavan
Director, School of Quantum Technology | Member |
| 10. | Prof. Sangeeta Kale
Dept. of Applied Physics, CoE | Member/ Permanent
invitee |
| 11. | Prof. S. K. Panigrahi
Dept. of Mechanical Engg., Dean (Sponsored Research) | Member |
| 12. | Prof. D. G. Thakur
Dept. of Mechanical Engg | Member |
| 13. | Prof. C. R. S. Kumar
School of Computers Engineering and Mathematical
Science | Member |
| 14. | Prof. Somanchi V.S.S.N.V.G. Murthy
School of Computers Engg and Mathematical Science | Member |

15.	Prof. Prashant Kulkarni Director, School of Energy and Environment	Member
16.	Prof. Shaibal Banerjee Dept. of Applied Chemistry, Chairman PGC &	Member
17.	Dr. Manisha Nene Director, School of Computers Engineering and Mathematical Science	Member
18.	Dr. Sumati Sidharth HoD, Technology Mgmt.	Member
19.	Dr. Ajay Misra, HoD, Dept. of Aerospace Engineering	Member
20.	Dr. Suwarna Datar HoD, Dept. of Applied Physics	Member
21.	Dr. Tejashree Bhawe Assoc. Prof, Dept of Applied Physics	Member
22.	Dr. A. A. Bazil Raj Assoc. Prof, Dept of Electronics Engg.	Member
23.	Dr. Debashish Pradhan Assoc. Prof, School of Computers Engineering and Mathematical Science	Member
24.	Dr. Sunita Dhavale Asst. Prof, School of Computers Engineering and Mathematical Science	Member
25.	Dr. Vidya K. Gargote Finance Officer	Member
26.	Dr. H. S. Panda Joint Registrar (Academics)/c	Permanent Invitee
27.	Shri. Kamal Kumar Bajre Registrar	Secretary

Leave of absence was granted to the following:

1. Prof. Avinash Mahajan, Dept. of Physics, IIT Bombay, Powai, Mumbai
2. Dr. Vijay Pattar, attended the meeting on behalf of Dr. S. S. Sirurmath, University Librarian.

1. Welcome Remarks by Vice Chancellor & Chairman, Academic Council:

At the outset, the Chairman welcomed all the members of the Academic Council including the esteemed members from the other organisation Prof. K. Sudhakar, Dept. of Aerospace Engg., IIT Bombay, Prof. Rajeev Srivastava, Dept. of Computer Science and Engg., IIT(BHU) Varanasi and Dr. S. K. Singh, DHRD, DRDO Head Quarters, New Delhi. The Vice Chancellor appreciated the effort of having a local Patent Attorney from Pune which has significantly increased the filing of Patents. He further informed the Academic Council of the scheduling of Convocation on 15th May 2023.

2. Progress/Action Taken Report on Minutes of the Last Academic Council Meeting:

The Vice Chancellor commented that the progress of Institution from last Academics council meeting was phenomenal. The Registrar presented the Action Taken Report on the decisions taken in the last Academic Council Meeting held on 15th Feb 2023 as given below:

Sr. No	Para of Minutes of the AC Meeting held on 15 th Feb, 2023	Agenda Point	Status/Action
1.	5	Introduction of New Courses - (03) M.Sc programme in Applied Chemistry, and Applied Physics (M.Sc and M.Sc (Tech))	Action Completed
2	6	Discontinuation of M.Tech programs i.e. Material Science & Chemical Technology and Opto Electronics & Communications Systems (with specialization in Lasers & Electro Optics)	Action Completed
3.	7	Award of Diploma/Degree to Students/Staff officers of MILIT from DIAT(DU)	Under Process
4.	8	Proposal to offer M.Sc (IT) to officers of INS Hamla	Action Completed

3. Confirmation of the Minutes of the Last Academic Council Meeting held on 15th Feb 2023.

The minutes of meeting of the Academic Council held on 15th Feb 2023 have been circulated among all members and the comments received have been incorporated. Therefore, the minutes of Academic Council meeting held on 15th Feb. 2023 may be considered for confirmation.

4. Reporting Items:

The following reporting items were noted by the Academic Council:

- Visit of Chairman, DRDO to DIAT
- One Patent granted and six provisional patent filed since previous Academic Council meeting (15th Feb. 2023)
- Applied for AICTE EOA of all –15 M.Tech. Programme
- Registered successfully for CCMT/CCMN (M.Tech. and M.Sc. admissions)
- NIRF data was successfully loaded for Engg., and Research category
- QR code was incorporated in Degree certificates (Name of institute, Name, Reg. No., Date of birth, year of passing, Program name, CGPA)
- Six new projects sanctioned to DIAT since last Academic Council meeting
- One national and two international conferences were successfully organised
- DIAT initiated workshop on cryptography-intelligence cipher text

Agenda Points for discussion:

5. Introduction of New Programme - M.Sc program in Data Science

The newly introduced program of M.Sc. in Data Science was presented by Prof. C.R.S. Kumar, SoCE&MS. (Annexure-1)

The Academic Council after detailed discussions advised to incorporate the following:

- List of Electives should be mentioned.
- Course structure shall be in lecture, tutorial and practical. (LTP Wise)
- Courses MSDS 501 and MSDS 502 curriculum should be enhanced to advance level.

Action: Director, School of
Computer Engineering and
Mathematical Science

6. **Introduction of (02) new M.Tech. programmes i.e., M.Tech. in Renewable Energy and M.Tech. in Green Technology (Annexure-2 &3)**

The Director, School of Energy and Environment presented the proposal for introduction of M.Tech. program i.e., M.Tech. in Green Technology and finalization of syllabus for both M.Tech. in Renewable Energy and M.Tech. in Green Technology. After brief discussion, the Academic Council approved the commencement of the new programs with modifications.

The Academic Council advised to incorporate the following:

- Course structure should contain lecture, tutorial and practical structure.
- BE/B.Tech. in Chemical Engineering and Bio-technology, B.E./B.Tech. in Materials Engineering and M.Sc. in Physics should also be included in the eligibility criteria.
- Include Hydrogen Energy course in Green Technology curriculum.
- Students shall have a contact privilege about the awareness of Climate change and Global warming in the course.
- To include Technology of converting solid waste from big cities to Fuel using microwave incinerators.

Action: Director, School of Energy and Environment

7. **Presentation of Results.**

Prof. Sangeeta Kale, CoE, presented the result analysis to the Academic Council. The Academic Council approved the results for award of degree of M.Tech (2021-23) batch of 261 students, M.Sc. Food Technology (2020-22) to 04 students and for Spring 2023 (Sem IV) 23 Ph.D. students out of which 05 students have been included in anticipation that the Viva Voce Exam will be over before Convocation. The CoE further intimated that the Gold medal will be awarded as per the policy: OM no. DIAT/F/ACAD/Policy/Gen on dated 08/12/2022.

Action: CoE

8. **Additional agenda point placed on the table with the permission of the Chair:**

a) **Proposal for starting a new program- Integrated Ph.D.**

Prof. Tejashree Bhawe, DRC, put forward the proposal for starting new Integrated Ph.D. program, as per the UGC notification 2022. The Academic Council suggested circulating the proposal of Integrated Ph.D. program to all the members for their perusal and approval

Action: Chairperson, DRC

b) Exit option for Integrated Ph.D.

Exit option for Ph.D. students after completion of three years (either by institute or student). The student may be awarded MS (by research) degree, provided that he/she must fulfil credit and other academic requirements as per existing rules and regulations of DIAT. The Academic Council approved the exit option for Ph.D. students.

Action: Chairman, PGC

9. Concluding remarks by Chairman:

In the concluding remarks, the Chairman emphasized the need for subscription of more Ph.D. students and further advised that the proposal of Integrated Ph.D. programme is to be circulated to all the Academic Council members.

There being no further items for discussion, the chairman thanked all the members for their valuable suggestions and the meeting concluded with a vote of thanks to the Chair.



**(Kamal Kumar Bajre)
Registrar & Secretary, AC**

M.Sc. in Data Science

Eligibility Criteria

M. Sc. (Data Science)	Minimum Educational Qualifications: The candidate must have a qualified a bachelor's degree in any branch of Engg. / Science/BCA / B. Mathematics / B. Statistics.
	Essential subjects in Bachelor's Degree along with minimum duration: a) Mathematics for at least two years/four semesters with b) Qualifying JAM Exam Test Paper in Mathematical Statistics (M.S.) or Mathematics(MA). c) Knowledge in computer programming

Semester I:

Sl. No.	Course Code	Course Name	Contact hours / week			Credits
			L	T	P	
1.	AMMSCD501	Computational Linear Algebra	3	1	0	4
2.	AMMSCD502	Probability & Statistical Methods with R	3	0	0	3
3.	AMMSCD503	Data Science with Python	3	0	0	3
4.	CSMSCD506	Advanced Database Management Systems	3	1	0	4
5.	CSMSCD507	Artificial Intelligence	3	1	0	4
6.	AMMSCD504	Data Science with Python Lab	0	0	4	2
7.	AMMSCD505	Probability & Statistical Methods with R Lab	0	0	4	2
		TOTAL	15	03	08	22

Semester II:

Sl. No.	Course Code	Course Name	Contact hours /week			Credits
			L	T	P	
1.	AMMSCD521	Optimization Techniques	3	1	0	4
2.	AMMSCD522	Time Series Analysis & Forecasting Methods	3	1	0	4
3.	AMMSCD523	Cryptanalysis	3	1	0	4
4.	AMMSCD524	Machine Learning and Deep Learning	3	0	0	3
5.	AMMSCD525	Advanced Algorithms Through Python	3	0	0	3
6.	AMMSCD526	Advanced Algorithms Through Python Lab	0	0	4	2
7.	AMMSCD527	Machine Learning and Deep Learning Lab	0	0	4	2
		TOTAL	15	03	08	22

Semester III:

Sl. No.	Course Code	Course Name	Contact hours / week			Credits
			L	T	P	
1.	AMMSCD531	Regression Analysis and Predictive Modelling	3	1	0	4
2.	TMMSCD540	Business Economics and Financial Analysis	3	1	0	4
3.		Elective -1	3	1	0	4
4.		Elective -2	3	1	0	4
5.		Elective -3	3	1	0	4
6.		Elective -4	3	1	0	4
7.		Mini Project	08**			04
		TOTAL	18	06	08**	28

Semester IV:

Sl. No.	Course Code	Course Name	Contact hours / week		Credits
			L	T / P	
1.	AMMSCD 651	Dissertation	28**		14
		TOTAL	28		14

*Contact Hours / week: -

- ✓ Lecture – L (Theory) / Tutorial (T) mean - one contact hour is One credit
- ✓ Practical (P) (Lab session) / mean two contact hours.

List of Electives are given below:

Few of the elective courses are listed below. However, Students are allowed to choose Elective Course(s) from various programmes offering by the respective departments which are as per the DIAT PG Course of Study.

Sl. No.	Course Code	Course
1.	AMMSCD532	Multivariate Data Analysis
2.	AMMSCD533	Digital Image Processing
3.	AMMSCD534	Reinforcement Learning
4.	AMMSCD535	Data Mining Techniques
5.	CSMSCD536	Natural Language Processing
6.	CSMSCD537	Pattern Recognition
7.	CSMSCD538	Cloud Computing
8.	CSMSCD539	Computer Vision
9.	CSMSCD541	Computer Forensics
10.	CSMSCD542	IoT Analytics
11.	CSMSCD543	Distributed Databases
12.	CSMSCD544	Computer Organization and Architecture
13.	CSMSCD545	Big Data Analysis and Algorithms
14.		MOOC / NPTEL

M.Tech in Renewable Energy**Eligibility:**

BE / B.Tech. in Mechanical/ Chemical/ Civil/ Electrical/ Electronics/ Biotechnology or Full time M.Sc. in Chemistry or Physics or Environmental Science. The candidate should have 60% marks or 6.5 CGPA in the qualifying examination as indicated against the disciplines concerned and valid GATE Score Certificate. The qualification should have been obtained from a recognized (by UGC) University / Deemed University / Institution in India. The candidates in the final semester of their degree are eligible to apply. Provisional certificates in such cases & Mark sheet of final semester are required to be submitted before commencing the program.

SEMESTER – I

Sl. No.	Course Code	Course	Contact Hours/week		Credits
			L	T	
1	SE-601	Fundamentals of Energy Studies	3	1	4
2	SE-602	Bioenergy Systems	3	1	4
3	SE-603	Hydrogen Energy	3	1	4
4	SE-604	Waste to Energy	3	1	4
5	SE-605	Solar Energy Systems	3	1	4
6	SE-606	Renewable Energy and Environmental Sustainability	3	1	4
7	PGC-601	Research Methodology and IPR	2	0	2
		Total	20	6	26

SEMESTER - II

Sl. No.	Course Code	Course	Contact Hours/Week		Credits
			L	T	
1	SE-607	Wind and Hydro Energy Systems	3	1	4
2	SE-608	Geothermal and Ocean Energy	3	1	4
3		Departmental Elective I	3	1	4
4		Departmental Elective II	3	1	4
5		Elective – III	3	1	4
6		Elective - IV	3	1	4
7	PGC-602	Audit 1 and 2	2	0	0
		Total	20	6	24

SEMESTER - III

Sr. No	Course No.	Subject	Contact Hours	Credits
			P	
1	SE-651	Dissertation (Phase-I)	28	14
		Total	28	14

SEMESTER - IV

Sr. No	Course No.	Subject	Contact Hours	Credits
			P	
1	SE-652	Dissertation (Phase –II)	28	14
		Total	28	14

M.Tech in GreenTechnology**Eligibility:**

B.E. / B.Tech. in Chemical/ Mechanical/ Civil/ Environmental Science/ B-pharmacy, Biotechnology or Full-time M.Sc. in all branches of Chemistry. The candidate should have 60% marks or 6.5 CGPA in the qualifying examination as indicated against the disciplines concerned and valid GATE Score Certificate. The qualification should have been obtained from a recognized (by UGC) University / Deemed University / Institution in India. The candidates in the final semester of their degree are eligible to apply. Provisional certificates in such cases and the Mark sheet of the final semester are required to be submitted before commencing the program.

SEMESTER – I

Sl. No.	Course Code	Course	Contact Hours/week		Credits
			L	T	
1	SE-621	Fundamentals of Green Technology	3	1	4
2	SE-622	Advanced Catalysis	3	1	4
3	SE-623	Chemical Process Design	3	1	4
4	SE-602	Bioenergy Systems	3	1	4
5	SE-604	Waste to Energy	3	1	4
6	SE-624	Safety in Industry	3	1	4
7	PGC-601	Research Methodology and IPR	2	0	2
		Total	20	6	26

SEMESTER – II

Sl. No.	Course Code	Course	Contact Hours/Week		Credits
			L	T	
1	SE-625	Alternative Fuels	3	1	4
2	SE-626	Carbon Capture and Storage	3	1	4
3		Departmental Elective I	3	1	4
4		Departmental Elective II	3	1	4
5		Elective – III	3	1	4
6		Elective - IV	3	1	4
7	PGC-602	Audit 1 and 2	2	0	0
		Total	20	6	24

SEMESTER - III

Sr. No	Course No.	Subject	Contact Hours	Credits
			P	
1	SE-651	Dissertation (Phase-I)	28	14
		Total	28	14

SEMESTER - IV

Sr. No	Course No.	Subject	Contact Hours	Credits
			P	
1	SE-652	Dissertation (Phase –II)	28	14
		Total	28	14

List of Electives

Sl. No.	Course Code	Course Name
1	SE-609	Fuel and Combustion Technology
2	SE-610	Integrated Energy System
3	SE-612	Energy Storage and Transport Systems
4	SE-613	Energy Auditing and Management
5	SE-614	Energy Modelling and Simulation
6	SE-615	Solid Waste Management
7	SE-627	Separation Science and Technology
8	SE-628	Battery and Fuel Cell Technology
9	SE-629	Chemical Reaction Engineering
10	SE-630	Nuclear Power Systems
11	SE-631	Energy Efficient Materials
12	SE-632	Green Technology Laboratory
Courses offered in DIAT		

