

**NATIONAL INSTITUTE OF TECHNOLOGY  
ROURKELA**

*Minutes*

**123<sup>rd</sup> Meeting of the Senate**



**MEETING No:** 123<sup>rd</sup> Senate Meeting  
**DATE :** 16.03.2024 (Saturday)  
**TIME :** 10:00 AM  
**VENUE :** B B Auditorium

**To:** \_\_\_\_\_  
**Dept./Centre:** \_\_\_\_\_



राष्ट्रीय प्रौद्योगिकी संस्थान, राउरकेला  
NATIONAL INSTITUTE OF TECHNOLOGY, ROURKELA

Minutes of the 123<sup>rd</sup> meeting of the Senate of the Institute held on 16.03.2024  
(Saturday) at 10:00 AM in the B. B. Auditorium, N.I.T., Rourkela.

**Members / Invitees present**

1. Prof. K. Umamaheshwar Rao, Director	-	Chairman, Senate
2. Prof. R. Dhiman, Registrar	-	Secretary, Senate
3. Prof. K. Pal, BM	-	Member
4. Prof. S. Paul, BM	-	Member
5. Prof. K. C. Patra, CE	-	Member
6. Prof. K. K. Khatua, CE	-	Member
7. Prof. S. K. Sahu, CE	-	Member
8. Prof. K. C. Biswal, CE	-	Member
9. Prof. A. Sahoo, CH	-	Member
10. Prof. A. K. Turuk, CS	-	Member
11. Prof. D. P. Mohapatra, CS	-	Member
12. Prof. B. Sahoo, CS	-	Member
13. Prof. P. M. Khilar, CS	-	Member
14. Prof. B. B. Nayak, CR	-	Member
15. Prof. R. Mazumder, CR	-	Member
16. Prof. S. K. Behera, CR	-	Member
17. Prof. B. G. Mishra, CY	-	Member
18. Prof. N. Panda, CY	-	Member
19. Prof. G. Hota, CY	-	Member
20. Prof. S. Chatterjee, CY	-	Member
21. Prof. R. K. Patel, CY	-	Member
22. Prof. R. Dinda, CY	-	Member
23. Prof. D. P. Acharya, EC	-	Member
24. Prof. P. Singh, EC	-	Member
25. Prof. S. Ari, EC	-	Member
26. Prof. S. K. Behera, EC	-	Member
27. Prof. S. Meher, EC	-	Member
28. Prof. U. C. Pati, EC	-	Member
29. Prof. A. K. Panda, EE	-	Member
30. Prof. P. K. Ray, EE	-	Member
31. Prof. P. K. Sahu, EE	-	Member
32. Prof. D. Patra, EE	-	Member
33. Prof. S. Das, EE	-	Member
34. Prof. Sk. Md. Equeenuddin, ER	-	Member
35. Prof. S. Mishra, FP	-	Member
36. Prof. J. Pradhan, HS	-	Member
37. Prof. S. Mohanty, HS	-	Member
38. Prof. G. K. Panda, MA	-	Member
39. Prof. S. Chakraverty, MA	-	Member
40. Prof. K. P. Maity, ME	-	Member
41. Prof. J. Srinivas, ME	-	Member
42. Prof. R. K. Behera, ME	-	Member

43.	Prof. S. K. Panda, ME	-	Member
44.	Prof. A. Satapathy, ME	-	Member
45.	Prof. S. C. Mohanty, ME	-	Member
46.	Prof. S. K. Patel, ME	-	Member
47.	Prof. A. Basu, MM	-	Member
48.	Prof. B. C. Ray, MM	-	Member
49.	Prof. D. Chaira, MM	-	Member
50.	Prof. M. Kumar, MM	-	Member
51.	Prof. A. K. Gorai, MN	-	Member
52.	Prof. B. K. Pal, MN	-	Member
53.	Prof. H. B. Sahu, MN	-	Member
54.	Prof. H. Naik, MN	-	Member
55.	Prof. M. K. Mishra, MN	-	Member
56.	Prof. D. K. Bisoyi, PH	-	Member
57.	Prof. J. P. Kar, PH	-	Member
58.	Prof. P. N. Vishwakarma, PH	-	Member
59.	Prof. S. S. Jena, PH	-	Member
60.	Prof. P. Kumar, PH	-	Member
61.	Prof. C. K. Sahoo, SM	-	Member
62.	Prof. R. K. Panda, SM	-	Member
63.	Prof. J. Panda, HOD, ER	-	Invitee
64.	Prof. P. P. Sutar, HOD, FP	-	Invitee
65.	Prof. S. Muhuri, HOD, PA	-	Invitee
66.	Mr. A. K. Behera, AR-AC(Res&PG)	-	Invitee
67.	Mr. D. R. Das, AR-AC(UG)	-	Invitee
68.	Mr. Maramreddy Poornanand, AR-AC(E&ISC)	-	Invitee

#### **Members / Invitees absent**

69.	Prof. Amitabha Bhattacharya	-	Member
70.	Prof. Sabita Tripathy	-	Member
71.	Prof. Saroj Nayak	-	Member
72.	Prof. K. Parmanik, BM	-	Member
73.	Prof. M. Panda, CE	-	Member
74.	Prof. P. Sarkar, CE	-	Member
75.	Prof. S. P. Singh, CE	-	Member
76.	Prof. C. R. Patra, CE	-	Member
77.	Prof. M. Kundu, CH	-	Member
78.	Prof. S. Paria, CH	-	Member
79.	Prof. S. Mishra, CH	-	Member
80.	Prof. P. K. Sa, CS	-	Member
81.	Prof. S. Bhattacharya, CR	-	Member
82.	Prof. D. Sarkar, CR	-	Member
83.	Prof. R. Sarkar, CR	-	Member
84.	Prof. J. Bera, CR	-	Member
85.	Prof. S. K. Pratihari, CR	-	Member
86.	Prof. P. Dash, CY	-	Member
87.	Prof. S. Mohapatra, CY	-	Member
88.	Prof. K. K. Mohapatra, EC	-	Member
89.	Prof. K. B. Mohanty, EE	-	Member
90.	Prof. S. Maity, EE	-	Member
91.	Prof. N. Sethi, HS	-	Member
92.	Prof. Mohd R. Khan, ID	-	Member

93. Prof. S. Das, LS	-	Member
94. Prof. S. K. Bhutia, LS	-	Member
95. Prof. S. K. Patra, LS	-	Member
96. Prof. K. C. Pati, MA	-	Member
97. Prof. S. S. Mohapatra, ME	-	Member
98. Prof. D. R. K. Parhi, ME	-	Member
99. Prof. S. K. Sahoo, ME	-	Member
100. Prof. S. Murugan, ME	-	Member
101. Prof. A. K. Satapathy, ME	-	Member
102. Prof. C. K. Biswas, ME	-	Member
103. Prof. S. K. Sahoo, MM	-	Member
104. Prof. S. Jayanthu, MN	-	Member
105. Prof. D. P. Tripathy, MN	-	Member
106. Prof. B. Ganguli, PII	-	Member
107. Prof. D. Bag, SM	-	Member
108. Prof. D. P. Jena, HOD, ID	-	Invitee
109. Prof. B. Nayak, HOD, LS	-	Invitee
110. Prof. J. Mohapatra, HOD, MA	-	Invitee
111. Prof. Shigufta Hena Uzma, HOD, SM	-	Invitee
112. Mr. Konduru Ashok Ku Raju, Roll No.519BM1015	-	Student Nominee
113. Ms. Debanuti Mishra, Roll No.120ID0253	-	Student Nominee



राष्ट्रीय प्रौद्योगिकी संस्थान राउरकेला  
NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA

**123<sup>rd</sup> MEETING OF THE SENATE**

Date : 16<sup>th</sup> March 2024 (Saturday)  
Time : 10:00 am  
Venue : B. Behera Auditorium

**MINUTES**

**Senate-123[2024]-01: Welcome to the members and invitees by the Chairman, Senate.**

The chairman of the Senate welcomed all members to the group. Chairman Senate elaborated on the importance of calling an urgent meeting for the inclusion of the new course B. Tech in Artificial Intelligence from the Academic Year 2024-25.

**Senate-123[2024]-02: To confirm the minutes of 121<sup>st</sup> and 122<sup>nd</sup> Senate meetings.**

The draft minutes of the 121<sup>st</sup> and 122<sup>nd</sup> Senate meetings held on 13/12/2023 and 20/12/2023, provisionally approved by the Chairman, Senate, were circulated to all members by group email. No comments/suggestions on the correctness of the recording of the minutes have been received from any member.

**[Annexure – A1, Page No. 2 - 21]**

**Senate confirmed the minutes with some modifications as under-**

*Under point no Senate-121[2023]-08: Allocation of divisions on CGPA basis. The change in regulations shall be effected from the admission batch of 2024-25 onwards.*

*Further, the Academic regulations for all students may be to the effect that students should have a CGPA less than 5.0 (instead of 5.7 or 6.0 as applicable) for being Institute out or slow pace.*

**Senate-123[2024]-03: Report on Action Taken on the decisions of 121<sup>st</sup> and 122<sup>nd</sup> meetings of the Senate.**

The Reports on Action Taken on the decisions taken in the 121<sup>st</sup> and 122<sup>nd</sup> meeting of the Senate are given in the Annexure for information of the Senate.

**[Annexure – A2, Page No. 22 - 24]**

*Senate noted the report.*

**A. RULES, PROCEDURES, CURRICULA AND POLICY MATTERS :**

*18*

*Wudra*



**Senate-123[2024]-04: Introduction of a new B. Tech programme in Artificial Intelligence.**

A proposal has been received from the School of Computations and Technologies (CSE department) for starting a new Course 'B. Tech. in Artificial Intelligence' from the Academic year 2024-25.

The detailed proposal was presented in the Senate.

**[Annexure – A3, Page No. 25 - 49]**

*The Senate deliberated and approved the proposal in principle and recommended it to the BOG for approval. The number of seats in the above-mentioned B.Tech. course shall be 45, which shall be adjusted by withdrawing some seats from various departments. Respective HODs were consulted and HODs have given their consent for the same.*

**Senate-123[2024]-5: Any other matter with permission of the Chair.**

**1) Discussion on the non-payment of fees by the students.**

It is for everyone's information that previously, all the students used to pay their fees through SBI Collect, leading to various issues like partial payment and time taken in reconciliation, etc. Based on the constitution of the Committees for introducing the payment gateway to collect such fees, it was recommended that this process be implemented as soon as possible. Accordingly, this fee payment gateway process was introduced for the AY 2023-24. We have collected the total fee for the autumn semester, and its relevant details are placed on the table for the kind perusal of all the Senate members (annexure enclosed).

It is essential to mention that out of 5808 students, 1058 have not paid the fees till now. This number is enormous, and a necessary decision needs to be made so that students who have not paid the fee till now should pay as soon as possible. In its recent meeting, the payment gateway committee suggested a few measures, like blocking the results of such students if they are in the final year or blocking the registration of other students for the next semester. It is essential to mention that blocking of registration was introduced earlier but discontinued in between.

To maintain financial discipline and avoid losing a significant amount of money and interest due to non-payment of fees by students, a necessary decision must be taken so that all the students comply with the fee payment window and submit the same within the given time frame.



The Agenda item was placed before the Senate to peruse the matter and make an appropriate decision.

[Annexure – A4, Page No. 50 - 51]

*By looking at the gravity of the issue, the Senate deliberated this item in length and decided the following:*

1. *A communication (preferably SMS) is to be sent to all the students and their parents informing them of the outstanding dues by the Automation Cell that need to be paid with the late fine as soon as possible.*
  2. *Final-year defaulter students of AY 2023-24 who have not paid the total fee will either not be allowed to sit in the Spring end-sem examination, or their viva-voce (in the absence of Spring end-sem examination) will not be conducted.*
  3. *From AY 2024-25, pre-registration/registration of all the students who have not cleared the previous semester's dues will not be allowed.*
- 2) Nomination of Member to the Board of Governors (BOGs) from Associate/Assistant Professor Category as per NIT Act, 2007 under Clause 11(f) & Clause 12 (c).**

Consequent upon the completion of the tenure of Prof. Sabyasachi Mishra, FP, as a BOG member from the Institute on 15.03.2024, the Senate, NIT Rourkela has nominated Prof. Manmath Narayan Sahoo, Associate Professor, Department of Computer Science and Engineering for the period of two-year w.e.f. 16.03.2024 to 15.03.2026 by election.


[Annexure – A5, Page No. 52 – 53]

*The Senate ratified the nomination.*

**The meeting ended with thanks to the Chair.**

  
(Prof. Rohan Dhiman) 21/3/2024

**Registrar & Secretary, Senate**

  
(Prof. K. Umamaheshwar Rao) 22.3.24

**Director & Chairman, Senate**

NATIONAL INSTITUTE OF TECHNOLOGY  
ROURKELA

*Minutes*

121<sup>st</sup> Meeting of the Senate



**MEETING No:** 121<sup>st</sup> Senate Meeting  
**DATE :** 13.12.2023 (Wednesday)  
**TIME :** 10:30 AM  
**VENUE :** B B Auditorium

**To:**

**Dept./Centre:** \_\_\_\_\_



राष्ट्रीय प्रौद्योगिकी संस्थान, राउरकेला  
NATIONAL INSTITUTE OF TECHNOLOGY, ROURKELA

Minutes of the 121<sup>st</sup> meeting of the Senate of the Institute held on 13.12.2023  
(Wednesday) at 10:30 AM in the B. B. Auditorium, N.I.T., Rourkela

Members / Invitees present

1. Prof. K. Umamaheshwar Rao, Director	-	Chairman, Senate
2. Prof. R. Dhiman, Registrar	-	Secretary, Senate
3. Prof. Sabita Tripathy	-	External Member
4. Prof. K. Pal, BM	-	Member
5. Prof. K. Parmanik, BM	-	Member
6. Prof. S. Paul, BM	-	Member
7. Prof. K. C. Patra, CE	-	Member
8. Prof. S. P. Singh, CE	-	Member
9. Prof. S. K. Sahu, CE	-	Member
10. Prof. A. Sahoo, CH	-	Member
11. Prof. M. Kundu, CH	-	Member
12. Prof. S. Paria, CH	-	Member
13. Prof. A. K. Turuk, CS	-	Member
14. Prof. D. P. Mohapatra, CS	-	Member
15. Prof. P. K. Sa, CS	-	Member
16. Prof. B. Sahoo, CS	-	Member
17. Prof. B. B. Nayak, CR	-	Member
18. Prof. R. Mazumder, CR	-	Member
19. Prof. S. K. Behera, CR	-	Member
20. Prof. S. K. Pratihar, CR	-	Member
21. Prof. B. G. Mishra, CY	-	Member
22. Prof. N. Panda, CY	-	Member
23. Prof. P. Dash, CY	-	Member
24. Prof. S. Mohapatra, CY	-	Member
25. Prof. G. Hota, CY	-	Member
26. Prof. S. Chatterjee, CY	-	Member
27. Prof. R. K. Patel, CY	-	Member
28. Prof. D. P. Acharya, EC	-	Member
29. Prof. S. Ari, EC	-	Member
30. Prof. S. K. Behera, EC	-	Member
31. Prof. A. K. Panda, EE	-	Member
32. Prof. P. K. Ray, EE	-	Member
33. Prof. P. K. Sahu, EE	-	Member
34. Prof. K. B. Mohanty, EE	-	Member
35. Prof. S. Das, EE	-	Member
36. Prof. Sk. Md. Equeenuddin, ER	-	Member
37. Prof. S. Mishra, FP	-	Member
38. Prof. N. Sethi, HS	-	Member
39. Prof. S. Mohanty, HS	-	Member
40. Prof. Mohd R. Khan, ID	-	Member
41. Prof. S. Das, LS	-	Member
42. Prof. S. K. Patra, LS	-	Member
43. Prof. G. K. Panda, MA	-	Member

44.	Prof. S. Chakraverty, MA	-	Member
45.	Prof. K. C. Pati, MA	-	Member
46.	Prof. K. P. Maity, ME	-	Member
47.	Prof. S. S. Mohapatra, ME	-	Member
48.	Prof. J. Srinivas, ME	-	Member
49.	Prof. R. K. Behera, ME	-	Member
50.	Prof. S. K. Panda, ME	-	Member
51.	Prof. S. Murugan, ME	-	Member
52.	Prof. S. C. Mohanty, ME	-	Member
53.	Prof. A. Basu, MM	-	Member
54.	Prof. M. Kumar, MM	-	Member
55.	Prof. S. K. Sahoo, MM	-	Member
56.	Prof. D. Chaira, MM	-	Member
57.	Prof. H. B. Sahu, MN	-	Member
58.	Prof. H. Naik, MN	-	Member
59.	Prof. B. Ganguli, PH	-	Member
60.	Prof. D. K. Bisoyi, PH	-	Member
61.	Prof. J. P. Kar, PH	-	Member
62.	Prof. P. N. Vishwakarma, PH	-	Member
63.	Prof. S. S. Jena, PH	-	Member
64.	Prof. P. Kumar, PH	-	Member
65.	Prof. C. K. Sahoo, SM	-	Member
66.	Prof. J. Panda, HOD, ER	-	Invitee
67.	Prof. P. P. Sutar, HOD, FP	-	Invitee
68.	Prof. D. P. Jena, HOD, ID	-	Invitee
69.	Prof. B. Nayak, HOD, LS	-	Invitee
70.	Prof. J. Mohapatra, HOD, MA	-	Invitee
71.	Prof. S. Muhuri, HOD, PA	-	Invitee
72.	Prof. Shigufta Hena Uzma, HOD, SM	-	Invitee
73.	Mr. A. K. Behera, AR-AC(Res&PG)	-	Invitee
74.	Mr. D. R. Das, AR-AC(UG)	-	Invitee
75.	Mr. Maramreddy Poornanand, AR-AC(E&ISC)	-	Invitee
76.	Mr. Konduru Ashok Ku Raju, Roll No.519BM1015	-	Student Nominee

#### **Members / Invitees absent**

77.	Prof. Amitabha Bhattacharya	-	External Member
78.	Prof. Saroj Nayak	-	External Member
79.	Prof. M. K. Gupta, BM	-	Member
80.	Prof. K. K. Khatua, CE	-	Member
81.	Prof. M. Panda, CE	-	Member
82.	Prof. P. Sarkar, CE	-	Member
83.	Prof. C. R. Patra, CE	-	Member
84.	Prof. K. C. Biswal, CE	-	Member
85.	Prof. S. Mishra, CIJ	-	Member
86.	Prof. P. M. Khilar, CS	-	Member
87.	Prof. S. Bhattacharya, CR	-	Member
88.	Prof. D. Sarkar, CR	-	Member
89.	Prof. R. Sarkar, CR	-	Member
90.	Prof. J. Bera, CR	-	Member
91.	Prof. R. Dinda, CY	-	Member
92.	Prof. K. K. Mohapatra, EC	-	Member
93.	Prof. P. Singh, EC	-	Member
94.	Prof. S. Meher, EC	-	Member

95.	Prof. U. C. Pati, EC	-	Member
96.	Prof. D. Patra, EE	-	Member
97.	Prof. S. Maity, EE	-	Member
98.	Prof. J. Pradhan, HS	-	Member
99.	Prof. S. K. Bhutia, LS	-	Member
100.	Prof. S. S. Ray, MA	-	Member
101.	Prof. D. R. K. Parhi, ME	-	Member
102.	Prof. S. K. Sahoo, ME	-	Member
103.	Prof. S. K. Acharya, ME	-	Member
104.	Prof. A. Satapathy, ME	-	Member
105.	Prof. A. K. Satapathy, ME	-	Member
106.	Prof. C. K. Biswas, ME	-	Member
107.	Prof. S. K. Patel, ME	-	Member
108.	Prof. B. C. Ray, MM	-	Member
109.	Prof. S. Sen, MM	-	Member
110.	Prof. A. K. Gorai, MN	-	Member
111.	Prof. B. K. Pal, MN	-	Member
112.	Prof. M. K. Mishra, MN	-	Member
113.	Prof. S. Jayanthu, MN	-	Member
114.	Prof. D. P. Tripathy, MN	-	Member
115.	Prof. D. Bag, SM	-	Member
116.	Prof. R. K. Panda, SM	-	Member
117.	Ms. Debanuti Mishra, Roll No.120ID0253	-	Student Nominee



राष्ट्रीय प्रौद्योगिकी संस्थान, राउरकेला  
NATIONAL INSTITUTE OF TECHNOLOGY, ROURKELA

**121<sup>st</sup> MEETING OF THE SENATE**

Date : 13<sup>th</sup> December 2023 (Wednesday)  
Time : 10:30 AM  
Venue : B. Behera Auditorium

**MINUTES**

**Senate-121[2023]-01: Welcome to the members and invitees by the Chairman, Senate.**

The Chairman Senate welcomed all members to the Senate.

**Senate-121[2023]-02: To confirm the minutes of 119<sup>th</sup> & 120<sup>th</sup> Senate meetings.**

The draft minutes of 119<sup>th</sup> Senate & 120<sup>th</sup> Senate meetings held on 24/05/2023 provisionally approved by the Chairman, Senate were circulated to all members by group email. No comments/suggestions on the correctness of the recording of the minutes have been received from any member.

[Annexure – A1, Page No. 12 - 22]

*Senate confirmed the minutes.*

**Senate-121[2023]-03: Report on Action Taken on the decisions of 119<sup>th</sup> & 120<sup>th</sup> meetings of the Senate.**

The Reports on Action Taken on the decisions taken in the 119<sup>th</sup> meeting of the Senate are given in the Annexure for information of the Senate.

[Annexure – A2, Page No. 22(a)]

*Senate noted the report.*

**A. RULES, PROCEDURES, CURRICULA AND POLICY MATTERS :**

**Senate-121[2023]-04: Reconsideration on Ph.D. regulation 2.2.ii and 2.2.iii regarding requirement of Mathematics at +2 and +3 Level.**

**Ph.D. regulation 2.2.ii. states that “For admission to Engineering and Science disciplines (except Life Science), a candidate should have passed Mathematics in +2 Science or Diploma.”**

- i) Prof. Amit Kumar Gorai (MN) requested for admission of Mr Arindam Baidya, a JRF in a project under him to the Ph.D. program. Previously, he was denied admission to Ph.D. due to the reason that he had not qualified in Mathematics at +2 level successfully as per the above cited Ph.D. Regulation. Prof. Gorai mentioned the following facts for considering his admission as per the regulation of West Bengal Council for Higher Secondary Education, once a candidate is awarded with pass in +2 then there is no scope of improvement examination in any appeared subjects. Hence, Mr. Baidya didn't have a scope for



improvement in Mathematics at +2 but he had cleared mathematics in B.Tech. program.  
Senate may deliberate on the case.

- ii) **Ph.D. regulation 2.2.iii. states that "Science students admitted to PhD programme in Engineering/Physics/ Mathematics must have passed Mathematics at +3 level. Students without Mathematics at +3 level may be admitted under the condition that they will have to register for 14 credits of 1000 and 2000 level Mathematics and 1000 level Computer Science courses (Theory and Practical) in addition to their normal course requirement, and secure at least C grade in each course."**

However, DRC of BM department had proposed for condoning the requirement of Mathematics at +3 level for science students admitted to Ph.D. programme in Engineering dept. DRC proposal is attached for perusal of the Senate.

[Annexure – A3, Page No. 23 - 24]

*Based on the above cases, Senate deliberated and did not approve the proposal.*

**Senate-121[2023]-05: Reconsideration on the policy of admission and conversion clause of Ph.D. students under Project Fellowship category.**

SRICCE had proposed modifications of following Ph.D. regulations as per below

**Modification In clause 3.2 on admission of Project Fellow**

- 1) Project Fellow may be permitted to join the Ph.D. program though the duration is less than 18 months under the project in which the Fellow is recruited under the condition as mentioned below at SL. No. 2.

**Modification in clause 12.6 on conversion of Project Fellow.**

- 2) The minimum duration of 18 months fellowship received from a Single Project may be modified to "the minimum duration of 18 months fellowship received from multiple research / consultancy projects in total before the date of conversion requested." Else, the candidate may be treated as "Project Scholar without Fellowship" similar to the category "Institute Scholar without Fellowship".

[Annexure – A4, Page No. 25]

*Senate did not approve the proposal.*

**Senate-121[2023]-06: Renaming of existing M.Tech. programmes and Introduction of two new M.Tech. programmes in Mechanical Engineering Dept..**

CDC recommendation and detailed proposal by DAC of ME dept. for renaming of existing M.Tech. programmes and introduction of two new M.Tech. programmes in ME dept. is put up to Senate for consideration.

[Annexure – A5, Page No. 26[a-k]]

The Senate authorized Chairman Senate to decide on the above



*[Handwritten signature]*

*[Handwritten signature]*

**Senate-121[2023]-07: Introduction of a new M.Sc. programme in Mathematics Dept.**

A proposal has been received from the Department of Mathematics for starting of a new Course for 'MSc in Computational Mathematics and Data Science'. The detailed proposal is provided in the annexure.

[Annexure – A6, Page No. 27 - 30]

Senate approved the proposal in principle.

**Senate-121[2023]-08: Allocation of divisions on CGPA basis.**

To accommodate students who passed all subjects with a 'P' grade and cannot achieve the existing threshold to get a degree, a few recommendations are put forward. A student who satisfies graduation requirements as per regulations and hence qualifies for the B.Tech, B.Arch, Dual Degree B.Tech. & M.Tech, Integrated M.Sc., MSc, MBA, MA, or MTech degree, may be awarded the division as per the following proposal :

Division System	
Existing	Proposed
CGPA $\geq$ 8.00 - Honours	CGPA $\geq$ 6.50 – 1st Class
$6.50 \leq$ CGPA $<$ 8.00 - 1st Class	
$6.00 \leq$ CGPA $<$ 6.50 - 2nd Class	$5.0 \leq$ CGPA $<$ 6.50 - 2nd Class

Senate approved the proposal.

**Senate-121[2023]-09: Amendments of academic punishments under the disciplinary manual of the Institute.**

A committee was constituted to review the academic punishments under disciplinary manual of the Institute. Based on the recent scenario, the committee has recommended some modifications in punishments for the academic along with malpractice related offences. Director has approved the proposal of the committee.

[Annexure – A7, Page No. 31 - 47]

Senate referred the proposal back for revision.

**Senate-121[2023]-10: Various Academic Committees for AY 2023-24.**

The term of some of the members of various Academic Committees had expired on 30.06.2023. Appointments/Committees were nominated for different academic activities of AY 2023-24. Director as the Chairman, Senate had approved the appointments to Academic Committees.

[Annexure – A8, Page No. 48 - 50]

Senate ratified the proposal.



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**B. UNDERGRADUATE AND POSTGRADUATE STUDIES:**

**Senate-121[2023]-11: Proposal on conduction of semester examinations by individual departments for all programmes except UG programmes.**

It is proposed to decentralize the PG programmes examination and conducting the examination at the department level. However, the schedule of examination and publishing of results will be done from the Academic office.

*Senate did not consider the proposal.*

**Senate-121[2023]-12: Case of Mr. Rakesh Kumar, Roll No. 419MA2144.**

Rakesh Kumar, Roll No. 419MA2144 has completed his M.Sc. courses after a period of 4 years and secured CGPA of 5.75. As per institute rule, one has to score a CGPA of a minimum 6.00 in order to get degree certificate. Thus Mr. Rakesh shall not get his M.Sc. degree certificate. His faculty advisor has requested to consider the case as the student is a patient with severe depression.

[Annexure – A9, Page No. 51 - 52]

*The case has already been taken care as per Senate-121[2023]-08.*

**Senate-121[2023]-13: Revision of curriculum for B. Tech. and Int. MSc. Courses to allow students for 6- months internship programme**

To allow B.Tech. and Int. M.Sc courses students for 6 months internship programme following changes were implemented.

1. Changes made in Time-table of Spring Semester 2022-23 of B. Tech students in theory courses for Six Months Internship Programme for AY 2022-23.
2. Changes made in curriculum for B. Tech. and Int. M.Sc. courses in the AY 2023-24 onwards to allow students for 6-months Internship programme.

[Annexure – A10, Page No. 53 - 61]

*Senate ratified the proposal.*

**Senate-121[2023]-14: Conducting one special supplementary examination for final year and other Semester (except 2nd year) students to complete their backlogs**

The HODs and Deans meeting vide order no: NITR/RG/HODM-229/2023/M0549 dated 21st July 2023 w.r.t. minute no Vide HODM-229 (2023)-03(5), had decided one special exam to be conducted (by the Depts.) for final year and other semester (except 2nd year) students to complete their backlogs.

[Annexure – A11, Page No. 62 - 64]

*Senate ratified the proposal.*

**Senate-121[2023]-15: Removal of the pre-requisite for all design subjects from the existing curriculum of B. Arch.**

At present 2<sup>nd</sup> and 9<sup>th</sup> semester B. Arch. students have Architectural Design I and VII subjects respectively. All these design papers are pre-requisite for the subsequent design papers as per our approved curriculum. In the last five years, it has been observed that if a student fails in a design subject in a

semester, because of prerequisite and slots arrangement of central time table a student has to take only design subject or theory subjects in a semester and has to stay back in the institute for minimum one year. The DAC and DAPOC members of Dept. of Planning and Architecture have submitted proposal to remove the pre-requisite from all design subjects.

[Annexure – A12, Page No. 65]

*Senate did not approve the proposal.*

**Senate-121[2023]-16: No change of Project to subject allotment once allotted during 6th semester.**

As per the Senate decision, the final year Research Project of B. Tech students is optional and can be replaced with theory courses, one in 7th semester and one in 8th semester with total credit of theory course work not less than the total credit of Research Projects I and II. However, the option of the project work or course work shall be exercised by the student at the time of project allotment in 6th semester and shall not be allowed to change the option in 7th OR 8th semester. If any student does not want to register for the project in the final year, she/he is not required to fill the choices for project allotment.

*Senate approved the proposal.*

**Senate-121[2023]-17: Offering of lab course during winter vacation of 2023 to Mr. Ronit Panda, Roll No. 120CE0598**

Department of Civil Engineering has requested permission to offer a lab course "Surveying Field Work" during the winter vacation 2023 in order to facilitate the internship of Mr. Ronit Panda, Roll No.-120CE0598. This has been approved by the Chairman Senate.

[Annexure – A13, Page No. 66 - 67]

*Senate ratified the proposal.*

**C. RESEARCH STUDIES:**

**Senate-121[2023]-18: Enhancement of Institute fellowship**

In pursuance to the Ministry order F.No.33-2/2023-TS.III-Part[1] dated 13<sup>th</sup> September 2022, F.No.-12-2/2023-U1 dated 11<sup>th</sup> September,2023 issued by the Ministry of Education and with reference to OM No. DST/PCPM/Z-06/2022 dated 26<sup>th</sup> June 2023 issued by Department of Science and Technology, Govt. of India, the emoluments for research personnel engaged in R&D programmes shall be revised as follows w.e.f. 01.01.2023.

Designation & Qualification	Existing Emoluments (per month)	Revised Emoluments (per month)
Junior Research Fellow (JRF)	Rs. 31,000/-	Rs. 37,000/-
Senior Research Fellow (SRF)	Rs. 35,000/-	Rs. 42,000/-
Research Associate - I	Rs. 47,000/-	Rs. 58,000/-
Research Associate - II	Rs. 49,000/-	Rs. 61,000/-
Research Associate – III	Rs. 54,000/-	Rs. 67,000/-

*[Handwritten signature]*

The above enhancement of fellowship may be implemented in NIT Rourkela for eligible Ph.D. students under category "Full Time Student with Institute Fellowship" w.e.f. 01.01.2023.

[Annexure – A14, Page No. 68 - 71]

*Senate approved the proposal.*

**Senate-121[2023]-19: Waiving of semester registration fee and semester tuition fee with respect to Synopsis Seminar to Thesis Submission.**

Many Applications duly recommended by departments were received by academic office for exempting semester registration fee for Ph.D. scholars who have submitted their final Thesis within a time period from the due date of semester registration. The same has been approved by authority for several applications. Hence, it is proposed to waive the semester registration fee for Ph.D. Scholars who submit their final thesis within one month of the due date of semester registration. It is also proposed that if before the due date of semester registration, any Ph.D. student presents her/his synopsis seminar and the same is approved by the competent authority then the semester tuition fee for the upcoming registering semester/s for those Ph.D. students will be waived off. In both circumstances, the student has to register under Zero credit registration.

*Senate approved the proposal.*

**Senate-121[2023]-20: Appeal of Ph.D. Scholar for enhancement of reimbursement limit of TA, DA, registration fee for conferences, workshops, seminars, summer/winter schools, specialized trainings etc., and grant of local travel costs at the duty station.**

As per institute rule, the reimbursement limit from institute fund for registration fee is Rs. 5000/- and local travel at the duty station is not reimbursable. However, an application of Ankan Roy, Roll No.- 519LS1020 duly recommended by LS department and Ex Senate student nominee K. Ashok Kumar Raju was received by academic office for granting full registration fees for conferences, workshops etc. as there is an increase in registration fees nowadays and granting local travel fares from institute fund.

Expenditure	Limit for Institute fund	
	Existing (in Rs)	Proposed(in Rs)
Food + Accommodation	200 per day	600 per day
Local Travel at Duty station	Nil	100 per day
Registration Fee	5000	7000

*Senate approved the proposal.*

**Senate-121[2023]-21: Criteria of SCI/SCIE journal publication (equivalent journal for HS and SM for Ph.D. thesis submission.**

As per Ph.D. regulation, publication of at least one paper in any of the SCI/SCIE journals (equivalent journal for HS and SM) arising out of the work reported in the thesis as first author for student is the minimum requisite for submission of Ph.D. thesis. However, there is no mention of the type of paper published i.e. whether it is a research article/ review article/ short communication/ letter to the editor etc. and the minimum number of words for a paper.

Hence, Senate deliberated on the matter and clearly stated that the paper of the SCI/SCIE journals (equivalent journal for HS and SM) should not be a review article/ short communication/ letter to the editor.

**Senate-121[2023]-22: Change of studentship category of Mr Swagat Kumar Nayak, Roll No.-521CY3009 from “Without Fellowship” to “Institute Fellowship” category.**

Swagat Kumar Nayak, Roll No.-521CY3009 was enrolled for PhD programme as a full time student without fellowship on 19/08/2021 under the Supervision of Prof. B. G. Mishra, CY. He has qualified GATE in 2022 and fulfills eligibility for Institute fellowship. He has co-authored 3 publications and won the best poster award (second prize) in the National Conference on “Shaping the energy future: Challenges and Opportunities” hosted by the prestigious Indian Institute of Petroleum, Dehradun. Based on his research performance and above achievements, the supervisor has requested for institute fellowship for a period of at least 3 years for the student. The DRC of CY has recommended the request of the supervisor for the conversion of Mr. Nayak from “without fellowship” to “institute fellowship”.

[Annexure – A16, Page No. 73 - 74]

*The Senate did not approve the conversion.*

**Senate-121[2023]-23: Request of Ph.D. student Shaik Karimulla, Roll No.-520EE1006 to grant Paternity Leave.**

Shaik Karimulla, Roll No.- 520EE1006 was on leave from 27<sup>th</sup> June to 27<sup>th</sup> July 2023 as his newborn baby was hospitalized in ICU immediately after birth due to a medical emergency. He had requested to grant Paternity Leave for the above duration but there is no provision for paternity leave to Ph.D. students in our institute. Our Institute grants maternity leave to female Ph.D. students and the student also cited the fact that various premier institutions like IITs and NITs have implemented paternity leave policies for male students and requested for implementation of paternity leave provisions for male Ph.D. students in the Institute.

[Annexure – A17, Page No. 75 - 76]

*The Senate approved the case.*

**Senate-121[2023]-24: Change of Supervisors in respect of Ph. D and Executive Ph.D. students.**

On the recommendation of the DRC of the different departments, Director as the Chairman, Senate has approved the change of supervisors for some of the PhD students and some cases are put up to the Senate for approval. The list is given in the Annexure. The Work done in all the cases with the previous supervisor(s) will be included in the thesis of the Research student with the changed supervisor(s).

[Annexure – A18, Page No. 77 - 78]  
(a)

*The Senate ratified the proposal.*

**Senate-121[2023]-25: Inclusion of Co-Supervisors/ Caretaker Supervisors in respect of Ph.D. and Executive Ph.D. students.**

On recommendation of the DRC of the different departments, Director as the Chairman, Senate has approved the inclusion of Co-supervisors/Caretaker supervisors for some of the PhD students, and some cases are put up to Senate for approval. The list is given in the Annexure.

[Annexure – A18, Page No. 77 - 78]  
(9)

*The Senate ratified the proposal.*

**Senate-121[2023]-26: Exclusion of Co-Supervisors in respect of Executive Ph.D. students.**

Dr. Bhagiratha Mishra had given his consent to discontinue as the co-supervisor of Mr. Adiraj Behera (Roll No.-919MM5076) and Mr. Aditya Shankar Routray (Roll No. 919MM5077). DRC of the MM department had recommended the above.

[Annexure – A19, Page No. 79 - 82]

*The Senate approved the proposal.*

**Senate-121[2023]-27: Extension of Studentship period in respect of Ph.D. students.**

On recommendation of the DRC of the different departments, Director as the Chairman, Senate has approved the extension of studentship for some of the PhD students and some cases are put up to the Senate for approval. The list is given in the Annexure.

[Annexure – A20, Page No. 83 - 86]

*The Senate ratified the proposal.*

**Senate-121[2023]-28: Extension of Registration Seminar Date in respect of Ph.D. students.**

On the recommendation of the DSC of the different departments, the Registration Seminar dates of a few Ph.D. students are extended. The list is given in the annexure.

[Annexure – A21, Page No. 87 - 89]

*The Senate ratified the proposal.*

**Senate-121[2023]-29: Withdrawal request of Ph.D. student Vikas Kumar Sinha, Roll No.-519EC1025**

Vikas Kumar Sinha, Roll No.-519EC1025 request for withdrawal duly recommended by EC department was submitted to Academic Office. However, the student has not completed 2 years after the Registration seminar to be eligible for withdrawal. His supervisor has cited the following facts to consider the case.

- 1) The student enrolled on 15/01/2020 and completed 3 years 10 months from enrollment and his Registration seminar was delayed due to COVID-19.
- 2) One of his papers submitted in Elsevier Biomedical Signal Processing and Control Journal (Impact Factor- 5.1) received major revision but the comments look like minor revision and it will be accepted.
- 3) The student has financial issues and to support his family after his father's retirement, he wanted to join a job. The offered job is related to hardware development which will be helpful for his Ph.D. work. This may lead to one or two more good publications which can be beneficial for our institute.

[Annexure – A22, Page No. 90 - 91]

*The student has taken back his request for Withdrawal so Senate closed the case without deliberation.*

**Senate-121[2023]-30: Case of Ph.D. student Mr. Garimella Jawahar Lal Nehru, Roll No.-521CY6020**

Mr. Garimella Jawahar Lal Nehru, Roll No.-521CY6020 was enrolled to Ph.D. on 02/09/2021 as a project scholar under the guidance of Prof. Debayan Sarkar (CY). On the recommendation of DRC CY, Prof. Rama Chandra Pradhan from Food Process Engineering was appointed as Principal Supervisor after Prof. Sarkar left the institute.

Meanwhile, The Senate vide Resolution No. Senate-117[2022]-13 dated 20/12/2022 deliberated on the recommendation of 53<sup>rd</sup> RPEC on the case and advised Dean (AC) to collect all information including project status and recommendation of DRC (CY) on the change of department and research area. DRC of CY department recommended that

1. The current research area topic of Mr. Nehru under the supervision of Prof. R. C. Pradhan (FP) is related to the project.
2. Studentship of Mr. Nehru may be transferred to FP for smooth conduction of his research work.
3. DSC may be reconstituted after taking due consent of DRC, FP.

DRC FP had also requested for DSC reconstitution considering the area of research in Food Process Engineering.

[Annexure – A23, Page No. 92 - 94]

Senate approved the request.

**Senate-121[2023]-31:Removal of student's name exiting (from the Institute) from the Supervisor's portal**

It has been found that a few PhD scholars are leaving the Institute without information and should return back the Stipend amount received during the PhD period at the Institute. However students are not responding nor returning the stipend amount due to which the names of the students could not be struck off from the Supervisor's portal. This is severely affecting the R& D work of concerned department.



*[Handwritten signatures]*

*In view of the above the Senate deliberated and it is decided that DRC of each department shall refer case to case basis and the Supervisor should not be penalized and be allowed to take new students against the above mentioned students as per his quota available.*

**Senate-121[2023]-32: Recommendation of 55<sup>th</sup> RPEC meeting on new Enrolment, Provisional Registration, and Registration of PhD, Executive Ph. D and M Tech (Res) students.**

The recommendation of 55<sup>th</sup> RPEC meeting is put up for consideration and approval of the Senate.

[Annexure-A24, Page No. 94(a-b)]

*The Senate approved the proposal.*

**D. DISCIPLINE, ENDOWMENT AND STUDENT AFFAIRS:**

**Senate-121[2023]-33: Senate Nominee to the Preliminary Screening Committee for "Distinguished Alumnus Award".**

The Board vide resolution No. BOG-22(2009)-18, dated 18.09.2009 & BOG-29(2012)-12, dated 16.03.2012 approved the presentation of "Distinguished Alumnus Award" for which the compositions of the Preliminary Screening Committee was defined as follows:

**Preliminary Screening Committee:**

1. Dean (AR) - Chairman
2. One internal member of the Board - Member
3. Two Faculty members nominated by the Senate - Member

Chairman Senate has nominated Prof. Prasanna Kumar Sahu, EE and Prof. Rabindra Kumar Behera, ME as Senate nominee.

[Annexure – A25, Page No. 95]

*The Senate ratified the nomination of the above two faculties to be the members of the Preliminary Screening Committee of the "Distinguished Alumni Award".*

**E. MISCELLANEOUS**

**Senate-121[2023]-34: List of degree recipients of UG, PG, and Research programmes for the XXI Convocation:**

The consolidated list of degree recipients of UG, PG and Research programmes who will be conferred respective degrees in the XXI Convocation of the Institute is given in the Annexure for the information and approval of the Senate. The number of students who graduated in various programmes is as under:



<u>Programme</u>	<u>No. of Students passed</u>
B. Arch	17
B. Tech	955
Dual-Degree B.Tech & M.Tech	38
Integrated M. Sc.	54
M. Tech	520
MA	21
M. Sc	168
MBA	39
M.Tech (By Research)	01
PhD	135 (as on 20.11.2023)

**Total 1948**

*Further, Research students who will be graduating on or before 31.12.2023, may also be conferred degree in XXI Convocation. The matter with approval from the Chairman, Senate has been approved in the 92<sup>nd</sup> meeting of the BoG.*

**[Annexure – A26, Page no. 96 - 142]**

*The Senate ratified the proposal.*

**Senate-121[2023]-35: List of various medal/award winners for the XXI Convocation:**

The consolidated list of various medal/award winners for the XXI convocation of the Institute is given in the Annexure for the approval of the Senate.

The selection process for the Endowment Gold Medal for Best Ph.D Thesis of 2022-23 has not been completed. Chairman, Senate may be authorized to approve the same once the selection is completed.

**[Annexure – A26, Page No. 96 - 142]**


*The Senate ratified the proposal.*

**Senate-121[2023]-36: CRASH course in Dec., 2023**


The HODs and Deans meeting vide order no: NITR/RG/HODM-229/2023/M0549 dated 21st July 2023 w.r.t. minute no Vide HODM-229 (2023)-03(1), had decided to offer a crash course in Winter break for three weeks for the first year students with F/UR grades. The already prescribed Summer course rules shall apply to the Winter Crash course.

The Senate ratified the proposal.

**Senate-121[2023]-37: Any other matter with the permission of the Chair.**

  
24/1/2024  
(Prof. Rohan Dhiman)

Registrar & Secretary, Senate

  
(Prof. K. Umamaheshwar Rao)  
Director & Chairman, Senate

**NATIONAL INSTITUTE OF TECHNOLOGY  
ROURKELA**

*Minutes*

**122<sup>nd</sup> Meeting of the Senate**



**MEETING No:** 122<sup>nd</sup> Senate Meeting  
**DATE :** 20.12.2023 (Wednesday)  
**TIME :** 10:00 AM  
**VENUE :** B B Auditorium

**To:** \_\_\_\_\_

**Dept./Centre:** \_\_\_\_\_



राष्ट्रीय प्रौद्योगिकी संस्थान, राउरकेला  
NATIONAL INSTITUTE OF TECHNOLOGY, ROURKELA

Minutes of the 122<sup>nd</sup> meeting of the Senate of the Institute held on 20.12.2023  
(Wednesday) at 10:00 AM in the B. B. Auditorium, N.I.T., Rourkela.

Members / Invitees present

1. Prof. K. Umamaheshwar Rao, Director	-	Chairman, Senate
2. Prof. R. Dhiman, Registrar	-	Secretary, Senate
3. Prof. S. Paul, BM	-	Member
4. Prof. A. Sahoo, CH	-	Member
5. Prof. A. K. Turuk, CS	-	Member
6. Prof. D. P. Mohapatra, CS	-	Member
7. Prof. P. K. Sa, CS	-	Member
8. Prof. B. Sahoo, CS	-	Member
9. Prof. B. B. Nayak, CR	-	Member
10. Prof. S. K. Pratihar, CR	-	Member
11. Prof. N. Panda, CY	-	Member
12. Prof. P. Dash, CY	-	Member
13. Prof. G. Hota, CY	-	Member
14. Prof. S. Chatterjee, CY	-	Member
15. Prof. R. Dinda, CY	-	Member
16. Prof. D. P. Acharya, EC	-	Member
17. Prof. S. Ari, EC	-	Member
18. Prof. S. K. Behera, EC	-	Member
19. Prof. P. K. Sahu, EE	-	Member
20. Prof. K. B. Mohanty, EE	-	Member
21. Prof. Sk. Md. Equeenuddin, ER	-	Member
22. Prof. S. Mishra, FP	-	Member
23. Prof. N. Sethi, HS	-	Member
24. Prof. S. K. Bhutia, LS	-	Member
25. Prof. S. K. Patra, LS	-	Member
26. Prof. S. Chakraverty, MA	-	Member
27. Prof. D. R. K. Parhi, ME	-	Member
28. Prof. J. Srinivas, ME	-	Member
29. Prof. S. K. Panda, ME	-	Member
30. Prof. R. K. Behera, ME	-	Member
31. Prof. S. K. Patel, ME	-	Member
32. Prof. B. C. Ray, MM	-	Member
33. Prof. S. K. Sahoo, MM	-	Member
34. Prof. A. K. Gorai, MN	-	Member
35. Prof. H. B. Sahu, MN	-	Member
36. Prof. M. K. Mishra, MN	-	Member
37. Prof. D. K. Bisoyi, PH	-	Member
38. Prof. J. P. Kar, PH	-	Member
39. Prof. P. N. Vishwakarma, PH	-	Member
40. Prof. S. S. Jena, PH	-	Member
41. Prof. J. Panda, HOD, ER	-	Invitee
42. Prof. P. P. Sutar, HOD, FP	-	Invitee
43. Prof. B. Nayak, HOD, LS	-	Invitee
44. Prof. J. Mohapatra, HOD, MA	-	Invitee
45. Prof. K. Karar (Paul), HOD(I/c), CE	-	Invitee
46. Prof. A. Mallik, HOD(I/c), MM	-	Invitee
47. Prof. B. Kumar, HOD(I/c), PA	-	Invitee
48. Mr. Maramreddy Poornanand, AR-AC (E & ISC)	-	Invitee

### Members / Invitees absent

1.	Prof. Amitabha Bhattacharya	-	Member
2.	Prof. Sabita Tripathy	-	Member
3.	Prof. Saroj Nayak	-	Member
4.	Prof. K. Pal, BM	-	Member
5.	Prof. K. Parmanik, BM	-	Member
6.	Prof. M. K. Gupta, BM	-	Member
7.	Prof. K. C. Patra, CE	-	Member
8.	Prof. K. K. Khatua, CE	-	Member
9.	Prof. M. Panda, CE	-	Member
10.	Prof. P. Sarkar, CE	-	Member
11.	Prof. S. P. Singh, CE	-	Member
12.	Prof. S. K. Sahu, CE	-	Member
13.	Prof. C. R. Patra, CE	-	Member
14.	Prof. K. C. Biswal, CE	-	Member
15.	Prof. M. Kundu, CH	-	Member
16.	Prof. S. Paria, CH	-	Member
17.	Prof. S. Mishra, CH	-	Member
18.	Prof. P. M. Khilar, CS	-	Member
19.	Prof. R. Mazumder, CR	-	Member
20.	Prof. S. Bhattacharya, CR	-	Member
21.	Prof. D. Sarkar, CR	-	Member
22.	Prof. R. Sarkar, CR	-	Member
23.	Prof. J. Bera, CR	-	Member
24.	Prof. S. K. Behera, CR	-	Member
25.	Prof. B. G. Mishra, CY	-	Member
26.	Prof. S. Mohapatra, CY	-	Member
27.	Prof. R. K. Patel, CY	-	Member
28.	Prof. K. K. Mohapatra, EC	-	Member
29.	Prof. P. Singh, EC	-	Member
30.	Prof. S. Meher, EC	-	Member
31.	Prof. U. C. Pati, EC	-	Member
32.	Prof. A. K. Panda, EE	-	Member
33.	Prof. P. K. Ray, EE	-	Member
34.	Prof. D. Patra, EE	-	Member
35.	Prof. S. Das, EE	-	Member
36.	Prof. S. Maity, EE	-	Member
37.	Prof. J. Pradhan, HS	-	Member
38.	Prof. S. Mohanty, HS	-	Member
39.	Prof. Mohd R. Khan, ID	-	Member
40.	Prof. S. Das, LS	-	Member
41.	Prof. S. S. Ray, MA	-	Member
42.	Prof. G. K. Panda, MA	-	Member
43.	Prof. K. C. Pati, MA	-	Member
44.	Prof. K. P. Maity, ME	-	Member
45.	Prof. S. S. Mohapatra, ME	-	Member
46.	Prof. S. K. Sahoo, ME	-	Member
47.	Prof. S. K. Acharya, ME	-	Member
48.	Prof. S. Murugan, ME	-	Member
49.	Prof. A. Satapathy, ME	-	Member
50.	Prof. A. K. Satapathy, ME	-	Member
51.	Prof. C. K. Biswas, ME	-	Member
52.	Prof. S. C. Mohanty, ME	-	Member
53.	Prof. A. Basu, MM	-	Member
54.	Prof. D. Chaira, MM	-	Member
55.	Prof. M. Kumar, MM	-	Member
56.	Prof. S. Sen, MM	-	Member
57.	Prof. B. K. Pal, MN	-	Member

58.	Prof. H. Naik, MN	-	Member
59.	Prof. S. Jayanthu, MN	-	Member
60.	Prof. D. P. Tripathy, MN	-	Member
61.	Prof. B. Ganguli, PH	-	Member
62.	Prof. P. Kumar, PH	-	Member
63.	Prof. D. Bag, SM	-	Member
64.	Prof. C. K. Sahoo, SM	-	Member
65.	Prof. R. K. Panda, SM	-	Member
66.	Prof. D. P. Jena, HOD, ID	-	Invitee
67.	Prof. S. Muhuri, HOD, PA	-	Invitee
68.	Prof. Shigufta Hena Uzma, HOD, SM	-	Invitee
69.	Mr. A. K. Behera, AR-AC(Res&PG)	-	Invitee
70.	Mr. D. R. Das, AR-AC(UIG)	-	Invitee
71.	Mr. Konduru Ashok Ku Raju, Roll No.519BM1015	-	Student Nominee
72.	Ms. Debanuti Mishra, Roll No.120ID0253	-	Student Nominee



राष्ट्रीय प्रौद्योगिकी संस्थान, राउरकेला  
NATIONAL INSTITUTE OF TECHNOLOGY, ROURKELA

**122<sup>nd</sup> MEETING OF THE SENATE**

Date : 20<sup>th</sup> December 2023  
Time : 10:00 AM  
Venue : B. Behera Auditorium

**MINUTES**

**Senate-122[2023]-01: Welcome to the members and invitees by the Chairman, Senate.**

The Chairman Senate welcomed all members to the Senate.

**Senate-122[2023]-02: Publication of results of B.Arch. 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup>, 7<sup>th</sup> & 9<sup>th</sup>, B.Tech. 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup> & 7<sup>th</sup> Sem, Dual Degree 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup>, 7<sup>th</sup> & 9<sup>th</sup>, Integrated M.Sc. 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup>, 7<sup>th</sup> & 9<sup>th</sup> Sem, M.Tech. 1<sup>st</sup> & 3<sup>rd</sup> Sem, M.Sc. 1<sup>st</sup> & 3<sup>rd</sup> Sem, M.B.A. 1<sup>st</sup> & 3<sup>rd</sup> Sem, M.A. 1<sup>st</sup> & 3<sup>rd</sup> Semesters and results of Ph.D., Exec. Ph.D. and M.Tech. (Res) students for Autumn End-Semester Examination 2023-24.**

The results of B.Arch. 1st, 3rd, 5th, 7th & 9th, B.Tech. 1st, 3rd, 5th & 7th Sem, Dual Degree 1st, 3rd, 5th, 7th & 9th, Integrated M.Sc. 1st, 3rd, 5th, 7th & 9th Sem, M.Tech. 1st & 3rd Sem, M.Sc. 1st & 3rd Sem, M.B.A. 1st & 3rd Sem, M.A. 1st & 3rd Semesters and results of Ph.D., Exec. Ph.D. and M.Tech. (Res) students for Autumn End-Semester Examination 2023-24 as recommended by the UGPEC & PGPEC will be put up on the table for approval of the Senate.

**[Annexure – A1, Page No. 2 - 69 ]**

*Senate approved the results.*

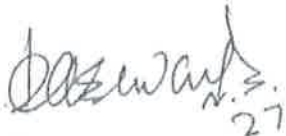
**MISCELLANEOUS**

**Senate-122[2023]-03: Any other matter with permission of the Chair.**

Nil.

*The meeting ended with thanks to the Chair.*

  
(Prof. Rohan Dhiman)  
Registrar & Secretary, Senate 26/2/2024

  
(Prof. K. Umamaheshwar Rao)  
Director & Chairman, Senate 27/2/24

## Annexure- A2

ACTION TAKEN REPORT		
Sl no of 121st Meeting	Subject	Action taken
Senate-121[2023]-02	Confirmation the minutes of 119 <sup>th</sup> and 120 <sup>th</sup> Senate meetings	Senate confirmed the Minutes
Senate-121[2023]-03	Report on Action Taken on the decisions of 119th & 120th meetings of the Senate	Noted
Senate-121[2023]-04	Reconsideration on Ph.D. regulation 2.2.ii and 2.2.iii regarding requirement of Mathematics at +2 and +3 Level	NOT Approved
Senate-121[2023]-05	Reconsideration on the policy of admission and conversion clause of Ph.D. students under Project Fellowship category	NOI Approved
Senate-121[2023]-06	Renaming of existing M.Tech. programmes and Introduction of two new M.Tech. programmes in Mechanical Engineering Dept.	Noted
Senate-121[2023]-07	Introduction of a new M.Sc. programme in Mathematics Dept.	Implemented
Senate-121[2023]-08	Allocation of divisions on CGPA basis	Implemented
Senate-121[2023]-09	Amendments of academic punishments under the disciplinary manual of the Institute	Implemented
Senate-121[2023]-10	Various Academic Committees for AY 2023-24	Implemented
Senate-121[2023]-11	Proposal on conduction of semester examinations by individual departments for all programmes except UG programmes.	Not Approved
Senate-121[2023]-12	Case of Mr. Rakesh Kumar, Roll No. 419MA2144	Implemented
Senate-121[2023]-13	Revision of curriculum for B. Tech. and Int. MSc. Courses to allow students for 6- months internship programme	Implemented
Senate-121[2023]-14	Conducting one special supplementary examination for final year and other Semester (except 2nd year) students to complete their backlogs	Implemented
Senate-121[2023]-15	Removal of the pre-requisite for all design subjects from the existing curriculum of B. Arch	Not Approved
Senate-121[2023]-16	No change of Project to subject allotment once allotted during 6th semester	Implemented
Senate-121[2023]-17	Offering of lab course during winter vacation of 2023 to Mr. Ronit Panda, Roll No.- 120CE0598	Implemented
Senate-121[2023]-18	Enhancement of Institute fellowship	Implemented
Senate-121[2023]-19	Waiving of semester registration fee and semester tuition fee with respect to Synopsis Seminar to Thesis Submission	Implemented with effect from 01.01.24

Senate-121[2023]-20	Appeal of Ph.D. Scholar for enhancement of reimbursement limit of TA, DA, registration fee for conferences, workshops, seminars, summer/winter schools, specialized trainings etc., and grant of local travel costs at the duty station	Implemented
Senate-121[2023]-21	Criteria of SCI/SCIE journal publication (equivalent journal for HS and SM for Ph.D. thesis submission)	Implemented
Senate-121[2023]-22	Change of studentship category of Mr Swagat Kumar Nayak, Roll No.-521CY3009 from "Without Fellowship" to "Institute Fellowship" category	Not Approved
Senate-121[2023]-23	Request of Ph.D. student Shaik Karimulla, Roll No.-520EE1006 to grant Paternity Leave	Implemented
Senate-121[2023]-24	Change of Supervisors in respect of Ph. D and Executive Ph.D. students	Implemented
Senate-121[2023]-25	Inclusion of Co-Supervisors/ Caretaker Supervisors in respect of Ph.D. and Executive Ph.D. stude	Implemented
Senate-121[2023]-26	Exclusion of Co-Supervisors in respect of Executive Ph.D. students	Implemented
Senate-121[2023]-27	Extension of Studentship period in respect of Ph.D. students.	Implemented
Senate-121[2023]-28	Extension of Registration Seminar Date in respect of Ph.D. students	Implemented
Senate-121[2023]-29	Withdrawal request of Ph.D. student Vikas Kumar Sinha, Roll No.-519EC1025	Not discussed
Senate-121[2023]-30	Case of Ph.D. student Mr. Garimella Jawahar Lal Nehru, Roll No.-521CY6020	Implemented
Senate-121[2023]-31	Removal of student's name exiting (from the Institute) from the Supervisor's portal	Implemented
Senate-121[2023]-32	Recommendation of 55th RPEC meeting on new Enrolment, Provisional Registration, and Registration of PhD, Executive Ph. D and M Tech (Res) students	Implemented
Senate-121[2023]-33	Senate Nominee to the Preliminary Screening Committee for "Distinguished Alumnus Award	Implemented
Senate-121[2023]-34	List of degree recipients of UG, PG, and Research programmes for the XXI Convocation	Implemented
	List of various medal/award winners for the XXI Convocation	Implemented
Senate-121[2023]-35	CRASH course in Dec., 2023	Implemented

SI no of 122nd meeting	Subject	Action taken
Senate-122[2023]-02	Publication of results of B. Arch 1st, 3rd, 5th, 7th & 09th, B.Tech 1st, 3rd, 5th & 7th Sem, Dual Degree 1st, 3rd, 5th, 7th & 09th, Integrated MSc 1st, 3rd, 5th, 7th & 09th Sem, M.Tech 1st & 3rd Sem, MSc 1st & 3rd Sem, MBA 1st & 3rd Sem, MA 1st & 3rd Semesters and results of Ph.D, Exec. Ph.D and M.Tech (Res) students for Autumn End-Semester Examination 2023-24.	Published



**NIT**  
**Rourkela**

**CURRICULUM & SYLLABUS**

of

**B.Tech.(Artificial Intelligence)**

**Department of Computer Science and Engineering**

**(2024-25)**

**Introduction:** Artificial Intelligence (AI) stands at the forefront of technological advancement, transforming industries, reshaping societies, and redefining the boundaries of what's possible. Undergraduate engineering courses in AI offer a gateway into this dynamic field, blending theory with practical application, and preparing students for a world where machines can learn, reason, and interact with humans in unprecedented ways.

The Bachelor of Technology (B.Tech) in Artificial Intelligence is a dynamic and innovative undergraduate program designed to equip students with a deep understanding of the fundamentals, technologies, and applications of Artificial Intelligence (AI). The scope of a Bachelor of Technology (B.Tech) in Artificial Intelligence is extensive and multidimensional, reflecting the pervasive impact of AI technologies across various sectors of the economy and society. This degree prepares students for a wide array of career paths, leveraging the growing integration of AI systems in everyday life and business operations. The curriculum typically encompasses fundamentals of computer science, machine learning, natural language processing, robotics, and data analytics, equipping graduates with the necessary skills to design, develop, and implement AI solutions.

In the technology and software industries, B.Tech in AI graduates are highly sought after for roles such as AI developers, machine learning engineers, and data scientists. They contribute to the development of intelligent systems that can perform tasks traditionally requiring human intelligence, such as recognizing speech, interpreting complex data, making decisions, and translating languages. These skills are in high demand by tech giants, startups, and software firms globally, offering lucrative and fulfilling career opportunities.

Furthermore, as AI continues to evolve, there is a growing need for professionals who not only understand the technical aspects but also the ethical, legal, and social implications of AI technologies. Graduates can contribute to shaping policies and frameworks that ensure the responsible use of AI, addressing concerns related to privacy, security, and the societal impact of automation and intelligent systems.

Graduates can find opportunities in almost every sector, from technology and healthcare to finance and transportation, contributing to cutting-edge advancements and solving complex challenges with AI solutions. The global demand for AI expertise is expected to continue growing, making this degree an excellent choice for those interested in being at the forefront of technological innovation. The proposed curriculum also covers all the subjects requirement for GATE examination of Computer Science and Information Technology & Data Science and Artificial Intelligence

### **Scope of B.Tech in Artificial Intelligence**

A Bachelor of Technology (B.Tech) in Artificial Intelligence (AI) offers a robust foundation in both computer science and AI-specific concepts. As of my last update in January 2022, the scope of a B.Tech in AI is quite promising and continues to grow due to the increasing demand for AI professionals across various industries. The scope of AI is vast and growing rapidly. It spans from machine learning algorithms that predict patterns and make decisions, to deep learning neural networks that analyse complex data sets. AI applications are ubiquitous, ranging from natural language processing used in voice-activated assistants, to computer vision in autonomous vehicles, and beyond. With the integration of AI into various sectors such as healthcare, finance, automotive, robotics, and entertainment, the demand for skilled AI professionals is surging globally. Pursuing a B.Tech in Artificial Intelligence can provide students with a strong foundation in AI and computer science, opening up diverse career opportunities in a rapidly growing field. However, it's essential for students to stay updated with the latest developments in AI and continuously enhance their skills to remain competitive in the job market.

### Prospective in the Present Context

- 1. Career Opportunities:** Graduates with a B.Tech in AI have a wide array of career paths available to them, including roles as AI specialists, machine learning engineers, data scientists, AI research scientists, and software developers specializing in AI. The demand for these roles is increasing as more industries seek to implement AI solutions.
- 2. Technological Advancements:** Continuous advancements in AI technologies mean that graduates will be working at the cutting edge of software development, automation, robotics, and computational intelligence. They will be contributors to innovations that may define the future of human society.
- 3. Interdisciplinary Impact:** AI's impact is not limited to technology sectors; it extends to healthcare, where AI is used for predictive analytics and personalized medicine; to finance, through algorithmic trading and fraud detection; to agriculture, with precision farming; and even to creative fields such as music and literature. This broad impact opens up diverse opportunities for graduates.
- 4. Ethical and Societal Role:** With great power comes great responsibility. B.Tech in AI programs also focus on the ethical, legal, and societal implications of AI technologies. Graduates are expected to navigate these complex issues, ensuring the development of responsible and beneficial AI systems.
- 5. Research and Innovation:** The field of AI is ripe with opportunities for research and innovation. Graduates can engage in academic research, contribute to open-source projects, or develop new AI-based startups and products. The dynamic nature of AI research offers endless possibilities for exploration and invention.
- 6. Global Demand:** The global demand for AI expertise means that graduates can find opportunities not just locally but around the world. Companies from start-ups to tech giants are in search of talent that can drive their AI initiatives, offering competitive salaries and benefits.

**Program Objectives:**

- 1. Foundational Knowledge:** To provide students with a comprehensive understanding of foundational theories, principles, and practices in artificial intelligence, including machine learning, deep learning, and symbolic AI.
- 2. Technical Skills:** To develop proficiency in designing, implementing, and evaluating AI models and algorithms to solve complex problems.
- 3. Interdisciplinary Application:** To encourage the application of AI techniques in various domains such as healthcare, robotics, finance, and natural language processing, fostering interdisciplinary innovation.
- 4. Ethical and Social Implications:** To instill an awareness of the ethical, social, and legal implications of AI technologies and the responsibility of AI practitioners in addressing these challenges.
- 5. Research and Development:** To inspire engagement in research and development activities in AI, promoting innovation and the advancement of the field.
- 6. Lifelong Learning:** To cultivate an attitude of lifelong learning and adaptability, enabling students to stay abreast of emerging AI trends and technologies.

**Program Outcomes:**

Upon successful completion of the AI engineering program, students will be able to:

- 1. Apply Knowledge:** Understand and apply knowledge of mathematics, science, and engineering to identify, formulate, and solve complex problems using AI techniques.
- 2. Design and Implementation:** Design, implement, and evaluate computer-based systems, processes, components, or programs to meet desired needs, employing modern AI tools and approaches.
- 3. Critical Thinking and Problem Solving:** Analyze a problem, and identify and define the computing requirements appropriate to its solution using AI methodologies.
- 4. Teamwork and Communication:** Function effectively as a member or leader of a team engaged in activities appropriate to AI engineering. Communicate effectively with a range of audiences about technical information.
- 5. Ethical Consideration:** Recognize professional, ethical, legal, security, and social issues and responsibilities relevant to the professional practice of AI.
- 6. Lifelong Learning:** Recognize the need for, and have the preparation and ability to engage in continuous professional development and lifelong learning.
- 7. Contemporary Issues and Societal Impact:** Understand the impact of engineering solutions in a global, economic, environmental, and societal context, especially as it pertains to AI technology.
- 8. Research and Innovation:** Engage in research and contribute to the creation of new knowledge or the development of innovative applications of AI in various sectors.

- **8 Semester B.Tech.( Artificial Intelligence), 160 credit**

Semester	1	2	3	4	5	6	7	8	
Credits	19	21	20	20	21	19	23	17	160
AI Credit	8		16	14	16	11			65

- **Honours Courses [14 Credits]**

- [1] Computing
- [2] Data Science
- [3] Cyber Security

- **Certificate Courses [8 Credits]**

- [1] Robotics & Autonomous system
- [2] Data and Information Security
- [3] Cyber Physical System
- [4] Data Analytics

## B.Tech.(AI) CURRICULUM and SYLLABUS

<b>1<sup>st</sup> Semester</b>				
<b>#</b>	<b>Basket</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
1	Applied Chemistry	CY 1001 : Electrochemistry and Conducting Polymers	3-0-0	3
2	Applied Mathematics - I	MA 1003 : Mathematics - I	3-0-0	3
3	Engineering Fundamentals	EC 1000 : Basic Electronics Engineering	3-0-0	3
4	Environment and Safety Engineering	CH 1400 : Environment and Safety Engineering	3-0-0	3
5	Communicative English	HS 1300 : Communicative English	2-0-0	2
6	Applied Science Laboratory (Chemistry)	CY 1170 : Chemistry Laboratory	0-0-3	2
7	Computer Aided Drawing and Graphics	CE 1010 : Computer Aided Drawing and Graphics	0-0-3	2
8	Extra Academic Activity - I	Extra Academic Activity – I (Physical Education / NCC / NSS / Yoga)	0-0-2	1
<b>TOTAL</b>				<b>19</b>

<b>2<sup>nd</sup> Semester</b>				
<b>#</b>	<b>Basket</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
1	Applied Physics	<b>PH 1004</b> : Electromagnetic and Quantum Physics	3-0-0	3
2	Applied Mathematics - II	MA 1004 : Mathematics - II	3-0-0	3
3	Biological Science	LS 1000 : Biology	2-0-0	2
4	Engineering Fundamentals	EE 1000 : Basic Electrical Engineering	3-0-0	3
5	Engineering Fundamentals	CE 1100 : Engineering Mechanics	3-0-0	3
6	Programming for Problem Solving	CS 1010 : Programming for Problem Solving	1-0-2	2
7	Applied Science Laboratory (Physics)	PH 1070 : Physics Laboratory	0-0-3	2
8	Workshop Practice	ME 1000 : Workshop Practice	0-0-3	2
9	Value Education and Ethics	EA 1270 : Value Education and Ethics	1-0-0	1
<b>TOTAL</b>				<b>21</b>

## B.Tech.(AI) CURRICULUM and SYLLABUS

3 <sup>rd</sup> Semester				
#	Basket	Course Title	L-T-P	Credit
1	Stream based core	Data Structures (CS2012)	3-0-0	3
2	Stream based core	Computer Organization & Architecture(CS2002)	3-0-0	3
3	Applied Mathematics III	Introduction to Probability and Statistics (MA2003)	3-0-0	3
4	Introduction to AI & ML/Data Science/IoT	Introduction to AI & ML(CS2010)	2-0-0	2
5	Introduction to AI & ML/Data Science/IoT	Python Programming for AI Laboratory(CS2090)	0-0-2	1
6	Humanities & Social Sciences Electives		2-0-0	2
7	Stream Based Laboratory	Data Structures Laboratory(CS2075)	0-0-3	2
8	Stream Based Laboratory	Computer Organization Laboratory(CS2074)	0-0-3	2
9	Engineering Fundamentals Laboratory	Basic Electrical Engineering Laboratory (EE2700)	0-0-2	1
10	Value Added Course		1-0-0	1
			<b>TOTAL</b>	<b>20</b>

4 <sup>th</sup> Semester				
#	Basket	Course Title	L-T-P	Credit
1	Stream based core	Data Science (CS6315)	3-0-0	3
2	Stream based core	Design and Analysis of Algorithm(CS2006)	3-0-0	3
3	Stream based core	Database Engineering(CS2008)	3-0-0	3
4	Technology in Society		0-0-3	2
5	Humanities & Social Sciences Electives		2-0-0	2
6	Stream Based Laboratory	Data Science Laboratory (CS6385)	0-0-2	1
7	Stream Based Laboratory	Design and Analysis of Algorithm Laboratory(CS2076)	0-0-3	2
8	Stream Based Laboratory	Database Engineering Laboratory(CS2072)	0-0-3	2
9	Language Laboratory		0-0-2	1
10	Value Added Course		1-0-0	1
			<b>TOTAL</b>	<b>20</b>

## B.Tech.(AI) CURRICULUM and SYLLABUS

5 <sup>th</sup> Semester				
#	Basket	Course Title	L-T-P	Credit
1	Stream based core	Natural language Processing (CS6314)	3-0-0	3
2	Stream based core	Deep Learning (CS6510)	3-0-0	3
3	Stream /Cluster based Electives	Optimization Methods in Machine Learning (CS6610)	3-0-0	3
4		Linear Algebra & Random Process(CS6108)	3-0-0	3
5	Electives (Multidisciplinary / Interdisciplinary / Transdisciplinary courses)	Operating Systems (CS3009)	3-0-0	3
6	Advance Skill Development		0-0-3	2
7	Stream Based Lab.	Natural Language Processing Laboratory(CS6379)	0-0-3	2
8	Stream Based Lab.	Deep Learning Laboratory (CS6511)	0-0-3	2
<b>TOTAL</b>				<b>21</b>

6 <sup>th</sup> Semester				
#	Basket	Course Title	L-T-P	Credit
1	Stream based core	Computer Architecture for Machine Learning (CS6697)	3-0-0	3
2	Stream / Cluster based Electives	Robotics and Industrial Automation (CS6512)	3-0-0	3
3		Quantum Computing (CS6520)	3-0-0	3
4	Electives (Multidisciplinary / Interdisciplinary / Transdisciplinary courses)	Software Engineering(CS3004)	3-0-0	3
5	Product Development		0-0-2	1
6	Stream Based Lab.	GPU Programming Laboratory (CS6531)	0-0-3	2
7	Stream Based Lab.	AI Applications Laboratory (CS6514)	0-0-3	2
8	Stream Based Lab.	Time Series Analysis Laboratory(CS6621)	0-0-2	1
9	Value Added Course		1-0-0	1
<b>TOTAL</b>				<b>19</b>

## B.Tech.(AI) CURRICULUM and SYLLABUS

7 <sup>th</sup> Semester				
#	Basket	Course Title	L-T-P	Credit
1	Electives (Department specific/Interdisciplinary/ Transdisciplinary courses)/	<b>To be selected from Stream /Cluster based Elective basket</b>	3-0-0	3
	Online courses [NPTEL]			
2	Electives (Department specific/Interdisciplinary/ Transdisciplinary courses)/	<b>To be selected from Stream /Cluster based Elective basket</b>	3-0-0	3
	Online courses [NPTEL]			
3	Electives (Department specific/Interdisciplinary/ Transdisciplinary courses)/	<b>To be selected from Stream /Cluster based Elective basket</b>	3-0-0	3
	Online courses [NPTEL]			
4	Capstone Project /Industry Internship/ Start-up Experience		0-0-0	4
5	Special Topics by Industry Experts		1-0-0	1
6	Summer Industrial/ Research Experience/ Engineering Project in Community Service (EPICS)		0-0-3	2
7	Seminar & Technical Writing		0-0-2	1
8	Elective Labs (Stream/Interdisciplinary)	<b>To be selected from Elective Laboratory Basket: : Table 2</b>	0-0-3	2
9	Elective Labs (Stream/Interdisciplinary)		0-0-3	2
10	Elective Labs (Stream/Interdisciplinary)		0-0-3	2
<b>TOTAL</b>				<b>23</b>

8 <sup>th</sup> Semester				
#	Basket	Course Title	L-T-P	Credit
1	Electives (Department specific/Interdisciplinary/ Transdisciplinary courses)	To be selected from Stream /Cluster based Elective basket	3-0-0	3
	Online courses	To be selected from Elective Laboratory Basket: : Table 1		
2	Electives (Department specific/Interdisciplinary/ Transdisciplinary courses)	To be selected from Stream /Cluster based Elective basket	3-0-0	3
	Online courses	To be selected from Elective Laboratory Basket: : Table 1		
3	Electives (Department specific/Interdisciplinary/ Transdisciplinary courses)	To be selected from Stream /Cluster based Elective basket	3-0-0	3
	Online courses	To be selected from Elective Laboratory Basket: : Table 1		
5	Capstone Project /Industry Internship/ Start-up Experience		3-0-0	6
6	Comprehensive Viva - Voce		0-0-0	2
			<b>TOTAL</b>	<b>17</b>

**Table 1: Online Elective Courses**

Online Elective Courses				
#	Basket	Course Title	Duration	Credit
1	NPTEL	Computer Networks Theory of Computation Fundamental of Cryptography Randomized Algorithm Parallel Algorithm Secure Computation Ethical Hacking Reinforcement Learning Introduction to IOT Compiler Design, Advanced Computer Architecture Block chain Architecture design and use cases Object Oriented System Development using UML, Java and Patterns	12 Weeks	3

**Table 2: Elective Laboratory Courses**

Elective Laboratory				
#	Basket	Course Title	L-T-P	Credit
1	Elective Laboratory	Network Simulation Laboratory(CS6375) Cryptography Laboratory(CS6371) Computer Vision Laboratory (CS4374) IOT Laboratory (CS6380) Soft Computing Laboratory (CS6475) Information Retrieval Laboratory (CS4376) Compiler Design Laboratory (CS3075) Machine Translation Laboratory (CS6651) Sentiment Analysis Laboratory (CS6652) CPU &GPU Simulator Laboratory (CS6653) Block chain Laboratory (CS6632) Network Security Protocol Laboratory (CS4278)	0-0-3	3

<b>Artificial Intelligence [Stream Based Core Courses]</b>				
<b>Sl. No</b>	<b>Code</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
1	CS2012	Data Structures	3-0-0	3
2	CS2002	Computer Architecture and Organization	3-0-0	3
3	CS3005	Data Science	3-0-0	3
4	CS2006	Design and Analysis of Algorithms	3-0-0	3
5	CS2008	Database Engineering	3-0-0	3
6	CS6314	Natural language Processing	3-0-0	3
7	CS6510	Deep Learning	3-0-0	3
8	CS6697	Computer Architecture for Machine Learning	3-0-0	3
9	CS2075	Data Structures Laboratory	0-0-3	2
10	CS2074	Computer Organization Laboratory	0-0-3	2
11	CS6385	Data Science Laboratory	0-0-3	2
12	CS2076	Design and Analysis of Algorithm Laboratory	0-0-3	2
13	CS2072	Database Engineering Laboratory	0-0-3	2
14	CS6379	Natural Language Processing Laboratory	0-0-3	2
15	CS6511	Deep Learning Laboratory	0-0-3	2
16	CS6531	GPU Programming Laboratory	0-0-3	2
17	CS6621	Time Series Analysis Laboratory	0-0-2	1
<b>Total Credit (Stream Based Core Courses)</b>				<b>41</b>

<b>Artificial Intelligence [Stream Based Elective]</b>				
<b>Sl. No</b>	<b>Code</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
1	CS4064	AI in Healthcare	3-0-0	3
2	CS4065	Machine Learning for Non-Programmers	3-0-0	3
3	CS4066	Programming for Machine Learning	3-0-0	3
4	CS4067	Principles of Soft Computing	3-0-0	3
5	CS6601	Predictive Analysis	3-0-0	3
6	CS6312	Data Warehousing and Mining	3-0-0	3
7	CS6602	Time Series Analysis	3-0-0	3
8	CS6603	Graph Analytics for Big Data	3-0-0	3
9	CS6619	Intelligent Data Management	3-0-0	3
10	CS6604	Big Data: Tools and Techniques	3-0-0	3
11	CS4328	Information Retrieval	3-0-0	3
12	CS6512	Robotics and Industrial Automation	3-0-0	3
13	CS6430	Recommender Systems	3-0-0	3
14	CS6475	Soft Computing Laboratory	0-0-3	2
15	CS4376	Information Retrieval Laboratory	0-0-3	2
16	CS3075	Compiler Design Laboratory	0-0-3	2
17	CS6513	Robot Motion and Planning Laboratory	0-0-3	2
18	CS6625	Dialogue Systems and Chatbots	2-0-0	2
19	CS6626	Programming for Language Technologies	2-0-0	2
20	CS6627	Deep Learning for NLP	2-0-0	2
21	CS6620	Big Data Analytics Laboratory	0-0-3	2
22	CS6374	Data Mining Laboratory	0-0-3	2
23	CS6622	Data Visualisation Laboratory	0-0-2	1
24	CS6623	Excel Analytics Laboratory	0-0-2	1
25	CS6624	Data Analytics Tools and Software Laboratory	0-0-2	1
26	CS6651	Machine Translation Laboratory	0-0-2	1
27	CS6652	Sentiment Analysis Laboratory	0-0-2	1
28	CS6697	Computer Architecture for Machine Learning	3-0-0	3
29	CS6514	AI Applications Laboratory	0-0-3	2

<b>Artificial Intelligence [Cluster Based Elective]</b>				
<b>Sl. No</b>	<b>Code</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
1	CS2003	Discrete Mathematics	3-0-0	3
2	CS2004	Formal Languages and Automata	3-0-0	3
3	CS2007	Digital Logic and Circuit Design	3-0-0	3
5	CS3001	Data Communication	3-0-0	3
6	CS3003	Object Oriented System Design	3-0-0	3
7	CS3004	Soft Computing	3-0-0	3
8	CS3004	Software Engineering	3-0-0	3
9	CS3006	Distributed System	3-0-0	3
10	CS3007	Compiler Design	3-0-0	3
11	CS3009	Operating Systems	3-0-0	3
12	CS3101	Principle of Programming Language	3-0-0	3
13	CS3101	Principle of Programming Language	3-0-0	3
14	CS3102	System Analysis and Design	3-0-0	3
15	CS3103	Real Time Systems	3-0-0	3
16	CS3303	Computer Vision	3-0-0	3
17	CS3304	Computer Graphics	3-0-0	3
18	CS3305	Digital Signal Processing	3-0-0	3
19	CS3307	Information Theory and Coding	3-0-0	3
20	CS4109	Advanced Database	3-0-0	3
21	CS6612	Advanced Topics in Natural Language Processing	3-0-0	3
22	CS3007	Compiler Design	3-0-0	3
23	CS6615	Advanced Topics in Compiler Design	3-0-0	3
24	CS6618	Complex Networks	3-0-0	3
25	CS4430	Distributed Operating Systems	3-0-0	3

<b>Artificial Intelligence [Cluster Based Elective]</b>				
<b>Sl. No</b>	<b>Code</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
26	CS4433	Embedded Systems	3-0-0	3
27	CS6128	Cloud Computing	3-0-0	3
28	CS6129	Introduction To High Performance Computing	3-0-0	3
29	CS6150	Principles of Mobile computing	3-0-0	3
30	CS6113	Distributed Computing	3-0-0	3
31	CS6119	Parallel and Distributed Computing	3-0-0	
32	CS6221	Blockchain and Cryptocurrency	3-0-0	3
33	CS6403	Software Architecture	3-0-0	3
34	CS6404	Software Testing	3-0-0	3
35	CS6415	Bioinformatics	3-0-0	3
36	CS6429	Foundations of Computer Security	3-0-0	3
37	CS6504	Performance Analysis of Computing	3-0-0	3
38	CS6520	Quantum Computing	3-0-0	3
39	CS6530	GPU Architecture and Programming	3-0-0	3
40	CS6610	Optimization Methods in Machine	3-0-0	3
41	CS6628	Cloud and Edge Computing	3-0-0	3
42	CS6630	Edge Computing and IoT	3-0-0	3
43	CS6376	Cryptography Laboratory	0-0-3	2
44	CS6631	Intrusion Detection System Laboratory	0-0-3	2
45	CS3015	Object Oriented Programming using Java	0-0-3	2
46	CS3072	Data communication and Computer Networks Laboratory	0-0-3	2
47	CS3071	Operating Systems Laboratory	0-0-3	2
48	CS3074	Software Engineering Laboratory	0-0-3	2
49	CS2073	Digital System Design Laboratory	0-0-3	2
50	CS3075	Compiler Design Laboratory	0-0-3	2
51	CS6632	Block chain Laboratory	0-0-2	1
52	CS6634	Cybersecurity and Data Privacy	0-0-2	1
53	CS6635	Network Security Protocol Laboratory	0-0-2	1

<b>Artificial Intelligence</b>				
<b>[Interdisciplinary/Transdisciplinary courses]</b>				
<b>Sl. No</b>	<b>Code</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
1	CS1010	Programming for Problem Solving	0-0-3	2
2	CS1002	Programming Fundamentals	2-0-0	2
3	CS2011	Introduction to AI and ML	2-0-0	2
4	CS2061	Data Structure Applications and Algorithms	3-0-0	3
5	CS2062	Database Management Systems	3-0-0	3
6	CS3061	Computer Architecture	3-0-0	3
7	CS3062	Principles of Operating Systems	3-0-0	3
8	CS3063	Object Oriented System Design	3-0-0	3
9	CS3064	Foundations of Data Science	3-0-0	3
10	CS4061	Fundamentals of Software Engineering	3-0-0	3
11	CS4062	Fundamentals of Computer Networks	3-0-0	3
16	CS4212	Cryptographic Foundation	3-0-0	3
17	CS4213	Cybersecurity for Cyber Physical Systems	3-0-0	3
18	CS4214	Data Acquisition and Signal Processing	3-0-0	3
19	CS2081	Data Structure and Algorithms Laboratory	0-0-3	2
20	CS2082	Database Management Systems Laboratory	0-0-3	2
21	CS2083	Hands-On with Operating Systems	0-0-3	2
22	CS2084	Object-Oriented Design & Development Lab	0-0-3	2
23	CS2092	AI and ML Laboratory	0-0-2	1
23	CS2090	Python Programming for AI Laboratory	0-0-2	1
24	CS2091	Python Programming for ML Laboratory	0-0-2	1
25	CS2093	Data Pre-processing Laboratory	0-0-2	1
26	CS2094	Text Analysis and NLP Laboratory	0-0-2	1
27	CS2095	IoT Prototyping Laboratory	0-0-2	1
28	CS2096	Cybersecurity for Cyber Physical Systems Laboratory	0-0-2	1
29	CS2097	Basic Quantum Computing Programming	0-0-2	1
30	CS2098	Industrial IoT	0-0-2	1
31	CS2099	IoT Data analytics	0-0-2	1
32	CS4107	Optimization Techniques	3-0-0	3
33	CS3015	Object Oriented Programming using Java	3-0-0	3

<b>Honours</b>				
<b>Computing Honours Basket</b>				
<b>Sl. No</b>	<b>Code</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
1	CS6115	Advanced Computer Architecture	3-0-0	3
2	CS6130	Distributed Operating Systems	3-0-0	3
3	CS6520	Quantum Computing	3-0-0	3
4	CS6628	Cloud and Edge Computing	3-0-0	3
5	CS4433	Embedded Systems	3-0-0	3
6	CS3002	Computer Networks	3-0-0	3
7	CS6654	Embedded Systems laboratory	0-0-3	2
8	CS6655	Quantum computing laboratory	0-0-3	2
9	CS6172	Network Simulation laboratory	0-0-3	2
10	CS6696	Honours Project	0-0-2	1
<b>14 credit courses to be completed for Computing(Honours)</b>				

<b>Honours</b>				
<b>Data Science Honours Basket</b>				
<b>Sl. No</b>	<b>Code</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
1	CS6601	Predictive Analysis	3-0-0	3
2	CS6602	Time Series Analysis	3-0-0	3
3	CS6603	Graph Analytics for Big Data	3-0-0	3
4	CS6610	Optimization Methods In Machine Learning	3-0-0	3
5	CS6657	Quantitative Finance	3-0-0	3
6	CS6606	AI in Health Care	3-0-0	3
7	CS6620	Big Data Analytics Laboratory	0-0-3	2
8	CS6621	Time Series Analysis Laboratory	0-0-3	2
9	CS6622	Data Visualisation Laboratory	0-0-3	2
10	CS6696	Honours Project	0-0-2	1
<b>14 credit courses to be completed for Data Science(Honours)</b>				

<b>Honours</b>				
<b>Cyber Security Honours Basket</b>				
<b>Sl. No</b>	<b>Code</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
1	CS6659	Number Theory and Cryptography	3-0-0	3
2	CS6217	Biometric Security	3-0-0	3
3	CS6660	Quantum Cryptography	3-0-0	3
4	CS6221	Block chain & Crypto Currency Technology	3-0-0	3
5	CS6570	Cybersecurity	3-0-0	3
6	CS6661	Cloud Security and Privacy	3-0-0	3
7	CS6376	Cryptography Laboratory	0-0-3	2
8	CS6631	IDS Laboratory	0-0-3	2
9	CS6632	Block chain Laboratory	0-0-2	2
10	CS6696	Honours Project	0-0-2	1
<b>14 credit courses to be completed for Cyber Security(Honours)</b>				

**Certificate Course [Human Computer Interface and Robotics] (8 Credits)**

<b>Human Computer Interface and Robotics</b>				
<b>Sl. No.</b>	<b>Code</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
1	CS6605	Brain Machine Interfaces	3-0-0	3
2	CS6663	Movement Sciences Laboratory	0-0-3	2
3	CS6664	Movement Science and Disorders	3-0-0	3
4	CS6665	Theoretical and Computational Neurosciences	3-0-0	3
5	CS6666	Robotics Programming	3-0-0	3
6	CS6512	Robotics and Industrial Automation	3-0-0	3
7	CS6667	Robot Dynamics and Control	3-0-0	3
8	CS6668	Mathematical Foundation of Robotics	3-0-0	3
9	CS6669	Humanoid Robotics	3-0-0	3
10	CS6513	Robot Motion and Planning Laboratory	0-0-3	2
11	CS6670	Computational Intelligence Laboratory	0-0-3	2
12	CS6671	Reinforcement Learning and Optimal Control for Robotics Laboratory	0-0-3	2
<b>8 credit courses to be completed for Certificate Course on Human Computer Interface and Robotics</b>				

**Certificate Course [Data and Information Security] (8 Credits)**

<b>Data and Information Security</b>				
<b>Sl. No</b>	<b>Code</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
1	CS6659	Number Theory and Cryptography	3-0-0	3
2	CS6429	Foundations of Computer Security	3-0-0	3
3	CS6217	Biometric Security	3-0-0	3
4	CS6660	Quantum Cryptography	3-0-0	3
5	CS6672	System and Network Security	3-0-0	3
6	CS6221	Block chain Technology & Cryptocurrency	3-0-0	3
7	CS6673	Cyber security and Data Privacy	3-0-0	3
8	CS6674	OS and Database Security	3-0-0	3
9	CS6661	Cloud Security and Privacy	3-0-0	3
10	CS6675	Artificial Intelligence in Cybersecurity	3-0-0	3
11	CS6373	Cryptography Laboratory	0-0-3	2
12	CS6631	IDS Laboratory	0-0-3	2
<b>8 credit courses to be completed for Certificate Course on Data and Information Security</b>				

**Certificate Course [Cyber Physical System] (8 Credits)**

<b>Cyber Physical System</b>				
<b>Sl. No</b>	<b>Code</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
1	CS6316	Internet of Things (IoT) Technologies	3-0-0	3
2	CS6676	Cyber-Physical Systems	3-0-0	3
3	CS4433	Embedded System Design	3-0-0	3
4	CS6414	Real-Time Systems	3-0-0	3
5	CS6677	Networked Control Systems	3-0-0	3
6	CS6114	Wireless Sensor Networks	3-0-0	3
7	CS6678	Machine Learning for CPS	3-0-0	3
8	CS4213	Cybersecurity for CPS	0-0-3	3
9	CS4214	Data Acquisition and Signal Processing	0-0-3	3
10	CS6380	Internet of Things (IoT) Technologies Laboratory	0-0-3	2
11	CS6654	Embedded Systems Programming Laboratory	0-0-3	2
12	CS6679	Real-Time Operating Systems (RTOS) Laboratory	0-0-3	2
<b>8 credit courses to be completed for Certificate Course on Cyber Physical System</b>				

**Certificate Course [Data Analytics] (8 Credits)**

<b>Data Analytics</b>				
<b>Sl. No</b>	<b>Code</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credit</b>
1	CS6601	Predictive Analysis	3-0-0	3
2	CS6680	Data Mining	3-0-0	3
3	CS6602	Time Series Analysis	3-0-0	3
4	CS6603	Graph Analytics for Big Data	3-0-0	3
5	CS6315	Data Science	3-0-0	3
6	CS6619	Intelligent Data Management	3-0-0	3
7	CS6604	Big Data Analytics	3-0-0	3
8	CS6385	Data Science Laboratory	0-0-3	2
9	CS6620	Big Data Analytics Laboratory	0-0-3	2
10	CS6374	Data Mining Laboratory	0-0-3	2
11	CS6621	Time Series Analysis Laboratory	0-0-2	1
12	CS6624	Data Analytics Tools and Software Laboratory	0-0-2	1

**8 credit courses to be completed for Certificate Course on Data Analytics**


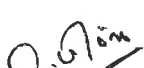




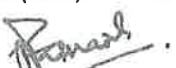
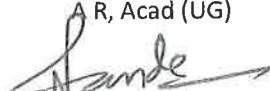
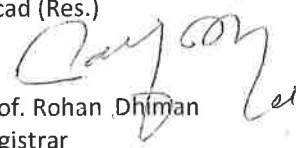
	Students	Amount (in Rs.)
Fee paid	4750	29,62,70,251.50
Fee not paid	1058	14,00,72,659.94
<b>Total</b>	<b>5808</b>	<b>43,63,42,911.44</b>

Programme	Total students	Fee paid	Fee not paid		
			Final Year	Others	Fellowship
(A)	(B)	(C)	(D)	(E)	(F)
B. Arch.	81	66	09	06	-
B. Tech.	3203	2786	228	189	-
B. Tech. M. Tech. Dual Degree	198	164	10	24	-
Executive Ph. D.	280	151	-	129	-
Integrated M. Sc.	316	281	07	28	-
M. Sc.	184	170	14	-	-
M. Tech.	524	385	139	-	107
M. Tech. (Res.)	02	01	01	-	-
MA	10	06	04	-	-
MBA	48	40	08	-	-
Ph. D.	962	700	-	262	69
<b>Total</b>	<b>5808</b>	<b>4750</b>	<b>420</b>	<b>638</b>	<b>176</b>

Date:13-03-2024

The following points need to be taken into consideration for finalization of reconciliation process of Autumn - 2023 semester fee collection and also opening of Spring 2023-24 semester fee payment portal.

- Rs 1000/- extra amount was collected from 70 nos. of students towards late fee, which needs to be adjusted in Spring 2023-24 semester fee portal (Annexure- I).
- 3 Nos of students deposited their semester fee in the bank account but the same have not been reflected in any of the capturing portal like HDFC MIS/CC Avenue/NITRIS. This needs to be adjusted manually in NITRIS or refunded back to the students directly by crediting their bank A/c (Annexure- II).
- 3 Nos of student settlement amount is not matching with the challan amount nor the amount reflected in the NITRIS. This needs to be adjusted manually in the NITRIS Portal (Annexure- III).
- 3 Nos of Chargeback case have wrongly been updated as successful by CC Avenue/HDFC which needs to be corrected in the connected portal (Annexure- IV).
- 13 Nos of students mess dues and establishment fee collected directly by the Chief Warden Office without using the payment gateway .This needs to be adjusted in the Autumn 2023-24/Spring 2023-24 fee payment portal (Annexure- V).
- From Autumn 2024 the collection for the bifurcated amount of the CW Office shall be done separately in their dedicated account. This will ease the process of the collection and reconciliation.
- The total number of students not paid the semester fee is 1058 against 5808 number of students demand generated towards Autumn 2023-24.The detail programme wise statistics of the students who have not paid the semester fee is enclosed herewith in (Annexure VI) .
- For those students who have not yet paid the outstanding semester fees including Autumn 2023-24, a suitable decision may be taken in the Senate either to withheld their result or debaring from next registration. Assistant Registrar (Academic) may be requested to take this proposal in the forthcoming senate after approval of Competent Authority.

 Deepak Sahoo Sr. Supdt.(F&A)	 A K Swain A R (F&A)	 U K Biswal D R (F&A)	 Dipti R. Das A R, Acad (UG)	 A K Behera A R, Acad (Res.)
 M R Pattnayak Sr. Scientific Officer	 T K Pattanaik Sr. Scientific Officer	 Prof. Niranjan Panda Chief Warden	 Prof. Rohan Dhiman Registrar	

Placed for Kind approval of Director.

  
Director



राष्ट्रीय प्रौद्योगिकी संस्थान, राउरकेला  
National Institute of Technology, Rourkela

Annexure - A5,

No. NITR/DN/2021/M/0056

Dt. 12/03/2024

Sub: Election Result of Faculty for BOG member (Assistant / Associate Professor Category)

Date of Election : 26/02/2024

Number of Votes Casted : 90 + 2 = 92

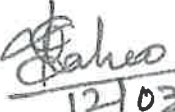
Number of Votes Invalid : 03

Number of Votes Valid : 87 + 2 = 89

Name of the candidates	Department	EC No	No of Votes Casted		
			Internal	External	Total
Prof. Ananta Charan Pradhan	PH	1141151	28	0	28
Prof. Devidas S. Nimaje	MN	1990743	04	1	05
Prof. Manoj Kumar Moharana	ME	1121031	10	0	10
Prof. Manmath Narayan Sahoo	CS	1090915	30	1	31
Prof. Swapan Kumar Karak	MM	1110955	15	0	15

As per the voting statistics Prof. Manmath Narayan Sahoo (Associate Professor) is hereby declared to be winner in this election for **Senate Nominee to BOG (Assistant / Associate Professor Category)**, 2024-2026.

Submitted for your kind approval before notification of result.

  
12/03/2024  
Prof. C. K. Sahoo  
Returning Officer

To

Director &amp; Chairman (Senate)

  
12/3/24



राष्ट्रीय प्रौद्योगिकी संस्थान राउरकेला  
National Institute of Technology Rourkela

No. NITR/RG/2024/M/0207

Date: 15.03.2024

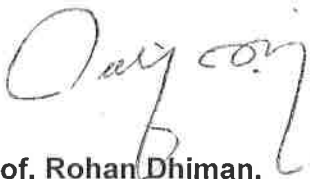
**CIRCULAR**

**Subject: Nomination of the Board of Governors (BOGs) Member (Associate/Assistant Professor Category) as per NIT Act, 2007 under Clause 11(f) & Clause 12 (c).**

Consequent upon the completion of tenure of Prof. Sabyasachi Mishra, FP, BOG member from the Institute on 15.03.2024, the Senate, NIT Rourkela has nominated the following faculty member of the BOGs for two years under Clause 11(f) and 12 (c) of the NIT Act, 2007 from the Associate/Assistant Professor Category:

Sl. No.	Name	Designation	Department	Period of Nomination to the BOG	
				From	To
1.	Prof. Manmath Narayan Sahoo EC: 1090915 Tel.: 0661-2462364 (O) Email: sahoom@nitrkl.ac.in	Associate Professor	Computer Science and Engineering	16.03.2024	15.03.2026

This is issued with the approval of the Director and Chairman, Senate.

  
Prof. Rohan Dhiman, 15/3/2024  
Registrar & Secretary, BOGs

**Copy to:**

1. Prof. Manmath Narayan Sahoo, CSE
2. Prof. Sabyasachi Mishra, FP
3. Dean (FW)
4. All employees by a group mail
5. Secretary to the Director