

**B. K. BIRLA COLLEGE OF ARTS, SCIENCE AND COMMERCE (AUTONOMOUS),
KALYAN**

CERTIFICATE COURSE



Experimental Biotechnology-Online

Week 1: Basics of Laboratory Research: Good Lab Practices, Concept of buffering and Preparation of Solutions and Reagents

Week 2: Electrophoresis (Part 1): Basic Concept of Electrophoresis, performance of electrophoresis and its applications

Week 3: Electrophoresis: Horizontal Gel electrophoresis, discussion about scientific questions and related experiments to solve them utilizing electrophoresis

Week 4: Chromatography (Part I): Analytical techniques in purification of biomolecules; Column chromatography, HPLC.

Week 5: Chromatography (Part II) : Analytical techniques in purification of biomolecules; Column chromatography, HPLC.

Week 6: Chromatography (Part III) : Discussion about scientific questions and related experiments to solve them utilizing chromatography

Week 7: Immunology Techniques: Immunological tools, Antibody Generation and Purification, ELISA, Radial Immuno-diffusion, Western blotting and Immuno-precipitation.

Week 8: Cell Biology Techniques (Part 1): Basics of cell-culture, isolation of cells from tissue and fractionation.

Week 9: Cell Biology Techniques (Part 2): Immuno-localization, cell sorting, and discussion about scientific questions and related experiments to solve them utilizing cell biology techniques.

Week 10: Molecular Biology (Part 1): Primer designing, Polymerase chain reaction, Different variants of PCR and their applications.

Week 11: Molecular Biology (Part 2) Blotting Techniques, DNA and protein sequencing techniques and their applications

Week 12: Summary and Conclusions

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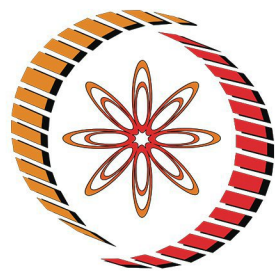
Roll No: NPTEL21BT36S34020773

To
DIVYA DEEPAK MAHADIK
ROOM NO. 783, BUILDING NO. 22
KOPRI COLONY, THANE (EAST), 400603
THANE
MAHARASHTRA - 400603
PH. NO :919892735668

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate



No. of credits recommended by NPTEL:3
An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to
DIVYA DEEPAK MAHADIK
for successfully completing the course


Experimental Biotechnology

with a consolidated score of **50** %

Online Assignments	19.81/25	Proctored Exam	30/75
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Total number of candidates certified in this course: **371**

Jul-Oct 2021
(12 week course)


Prof. Hemant B Kaushik
Head, Center for Educational Technology
NPTEL Coordinator, IIT Guwahati



Indian Institute of Technology Guwahati



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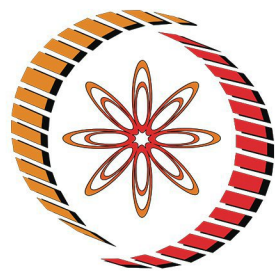
Roll No: NPTEL21BT36S44021332

To
PATIL PURVA SHARAD
A/208, SANDHYA COMPLEX, KONGAON
NR AJIT PETROL PUMP, TAL-BHIWANDI
BHIWANDI
MAHARASHTRA - 421311
PH. NO :9273888750

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate



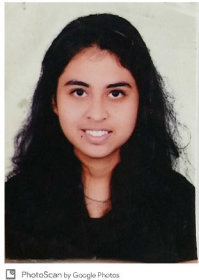
No. of credits recommended by NPTEL:3
An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to

PATIL PURVA SHARAD

for successfully completing the course


Experimental Biotechnology

with a consolidated score of **64** %

Online Assignments	20.6/25	Proctored Exam	43.5/75
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Jul-Oct 2021
(12 week course)


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NPTEL Coordinator, IIT Guwahati



Indian Institute of Technology Guwahati



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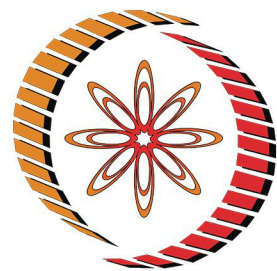
Roll No: NPTEL21BT36S34020187

To
SAYALI PRADEEP DALVI
403/A-5 DEV DAR CHS
LOKUDYAN COMPLEX, KALYAN WEST
KALYAN
MAHARASHTRA - 421301
PH. NO :918356022883

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate



No. of credits recommended by NPTEL:3
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NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to
SAYALI PRADEEP DALVI
for successfully completing the course


Experimental Biotechnology

with a consolidated score of **53** %

Online Assignments	20.28/25	Proctored Exam	32.25/75
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Total number of candidates certified in this course: **371**

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NPTEL Coordinator, IIT Guwahati



Indian Institute of Technology Guwahati



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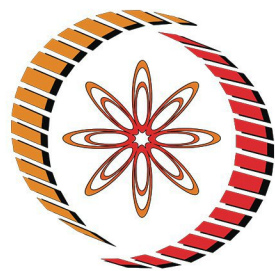
Roll No: NPTEL21BT36S44021988

To
SUPRIYA KANOUIYA
CHANDRAMUKHI
B-/3045
KALYAN
MAHARASHTRA - 421301
PH. NO :8454992078

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate



No. of credits recommended by NPTEL:3
An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to
SUPRIYA KANOUIYA
for successfully completing the course




Experimental Biotechnology

with a consolidated score of **82** %

Online Assignments	21.38/25	Proctored Exam	60.75/75
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Total number of candidates certified in this course: **371**

Jul-Oct 2021
(12 week course)


Prof. Hemant B Kaushik
Head, Center for Educational Technology
NPTEL Coordinator, IIT Guwahati



Indian Institute of Technology Guwahati



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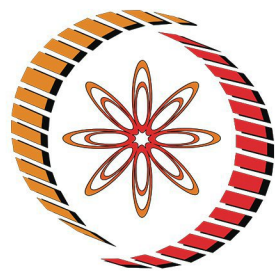
Roll No: NPTEL21BT36S33430108

To
SUSHMITA SINGHO
1/4 MAHATRE COLONY, KHADEGOLWALI ROAD
KALYAN EAST, NEAR VITTHALMANDIR
VITTHALWADI
MAHARASHTRA - 421306
PH. NO :8767543109

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate



No. of credits recommended by NPTEL:3
An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to
SUSHMITA SINGHO
for successfully completing the course

Experimental Biotechnology

with a consolidated score of **56** %

Online Assignments	19.35/25	Proctored Exam	36.75/75
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Total number of candidates certified in this course: **371**

Jul-Oct 2021
(12 week course)


Prof. Hemant B Kaushik
Head, Center for Educational Technology
NPTEL Coordinator, IIT Guwahati



Indian Institute of Technology Guwahati

