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

CERTIFICATE COURSE



Introduction to Classical Mechanics

Week 1:Generalised coordinates, D' Alembert's Principle, Euler Lagrange equation of motion and its applications.

Week 2: Hamilton's Principle. Conservation laws.

Week 3: Small oscillations: Free Oscillations, Damped oscillations.

Week 4: Forced Oscillations, Resonance, Normal Coordinates.

Week 5:Central force problem, reduction to 1 body problem, Equation of motion and first integrals.

Week 6: Classification of orbits. Scattering in central field.

Week 7: Kinematics of rigid body motion: Degrees of freedom of rigid body, orthogonal transformations.

Week 8: Euler angles, Euler's theorem.

Week 9: Finite and infinitesimal rotations. What are tensors? Moment of inertial tensor Week 10: Principle axis transformation, Euler Equation of motion

Week 11: Torque free motion of a rigid body. Heavy symmetrical top with one point fixed.

Week 12: Hamilton equation of motion, Conservation theorems, Canonical transformations.

This certificate is computer generated and can be verified by scanning the QR code given below. This will display the certificate from the NPTEL repository, https://nptel.ac.in/noc/

Roll No: NPTEL21PH29S44022169

To SUBRAT SARAT PATRA C10 406 ,MANSAROVAR, LOK DHARA. KALYAN EAST KALYAN MAHARASHTRA - 421306 PH. NO :8655135471



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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

SUBRAT SARAT PATRA

for successfully completing the course

Introduction to Classical Mechanics

with a consolidated score of 54

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Total number of candidates certified in this course: 70

Jacemashanker

Prof. B Umashankar Chairperson, Centre for Continued Education (CCE) IIT Hyderabad

Roll No:NPTEL21PH29S44022169

Jul-Oct 2021 (12 week course) Prof. Andrew Thangaraj NPTEL, Coordinator IIT Madras





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