

ANALYTICAL MECHANICS FOR RELATIVITY AND QUANTUM MECHANICS

O. D. Johns

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Possible Course Syllabus for a Fifteen Week Semester at the Introductory Level

Week 1	Ch.1, App.A	Basic Dynamics
Week 2	Ch.2	Lagrangian Mechanics
Week 3	Ch.2&3	Lagrangian Mechanics & Constraints
Week 4	Ch.3	Lagrangian Theory of Constraints
Week 5	Ch.4	Hamiltonian Mechanics
Week 6	Ch.4	Canonical Transformations
Week 7	Ch.5	Calculus of Variations
Week 8	Ch.6&7	Hamilton's Principle / Linear Operators
Week 9	Ch.7	Linear Operators and Dyadics
Week 10	Ch.8	Kinematics of Rotation
Week 11	Ch.8&9	Rotational Kinematics & Dynamics
Week 12	Ch.9	Rotational Dynamics
Week 13	Ch.10	Small Vibrations
Week 14	Ch.11	Central Force Motion
Week 15	Ch. 11&12	Central Force Motion / Scattering

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Possible Course Syllabus for a Fifteen Week Semester with Classical and Quantum Emphasis

Week 1	Ch.1, App.A	Basic Dynamics
Week 2	Ch.2	Lagrangian Mechanics
Week 3	Ch.3	Lagrangian Constraints
Week 4	Ch.4	Hamiltonian Mechanics
Week 5	Ch.5 & 6	Variations & Hamilton's Principle
Week 6	Ch.7	Linear Operators
Week 7	Ch.8	Kinematics of Rotation
Week 8	Ch.9	Rotational Dynamics
Week 9	Ch.10	Small Vibrations
Week 10	Ch.11 & 12	Central Force Motion and Scattering
Week 11	Ch.13	Extended Lagrangian Theory
Week 12	Ch.14 & 15	Extended Hamiltonian Theory, Noether's Theorem
Week 13	Ch.19	Canonical Transformations
Week 14	Ch.20	Generating Functions
Week 15	Ch.21& 22	Hamilton-Jacobi Theory, Angle-Action Variables

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Possible Course Syllabus for a Fifteen Week Semester with Relativity Emphasis

Week 1	Ch.1, App.A	Basic Dynamics
Week 2	Ch.2	Lagrangian Mechanics
Week 3	Ch.4	Hamiltonian Mechanics
Week 4	Ch.5 & 6	Variations & Hamilton's Principle
Week 5	Ch.7	Linear Operators
Week 6	Ch.8	Kinematics of Rotation
Week 7	Ch.9	Rotational Dynamics
Week 8	Ch.11 & 12	Central Force Motion and Scattering
Week 9	Ch.13	Extended Lagrangian Theory
Week 10	Ch.14 & 15	Extended Hamiltonian Theory, Noether's Theorem
Week 11	Ch.16 & 17	Relativistic Kinematics
Week 12	Ch.18	Relativistic Mechanics
Week 13	Ch.19	Canonical Transformations
Week 14	Ch.20	Generating Functions
Week 15	Ch.21 & 22	Hamilton-Jacobi Theory, Angle-Action Variables