Course: Energy Resources, Economics and Environment

Course Code: noc21-hs54

Session: 2020-21

Duration: 8 Weeks

Assessment procedures: Weekly Assignment (25%) + proctored certification Exam (75%)

Curriculum of the Course:

Week 1: Energy Flow Diagram, Global Trends in Energy Use, India and World- Disaggregation by supply, end use, Energy and Environment, The Kaya Identity, Emission Factor

Week 2: Energy and Quality of Life, Energy Inequality, Energy Security, Introduction to Country Energy Balance assignment

Week 3: Energy Economics - Simple Payback Period, Time Value of Money- discount rate, Criteria for Assessing Energy Projects – (Net Present Value (NPV), Benefit/Cost Ratio (B/C), Inflation, Internal Rate of Return (IRR)

Week 4: Resources & Reserves Growth Rates in Consumption, Estimates of Duration of Fossil Fuels, McKelvey Diagram, Peak oil, Hubbert's model

Week 5: Materials used in renewable energy (Kuznet's Curve, Betting on the planet, Simon's Change), Non-Renewable Energy Economics (Hotelling's Rule)

Week 6: Preferences and Utility, Utility and Social Choice

Week 7: Public and private goods / bads, Demand curves, Externalities

Week 8: Financing Energy – Debt/ Equity- Sources of funds, innovative financing models

Week 9: Input Output Analysis

Week 10: Primary Energy Analysis, Net Energy Analysis, Examples, Energy Cost of Energy, Life Cycle Analysis of Bioenergy

Week 11: Net Energy Examples, Energy Policy

Week 12: Energy Policy Examples, Practice problems solution

List of students enrolled

S. No	Name of Student
1	Saurabh Meena
2	Tushar Soni
3	Tushar Sharma