Schedule

All lectures: 1 hr 15mts + 15mts interaction session

Professor Sanjib Mishra—15 Lectures + 6 Tutorials

Professor S. K. Singh-—2 Lectures
(Introduction to the Standard Model of Electroweak Interaction)

Professor Mohammad Sajjad Athar--- 3 Lectures
(CCQE, Inelastic and deep inelastic processes: Lagrangian, Feynman diagram, Transition matrix element, Cross section calculation)

Sanjib Mishra (SM)
S. K. Singh (SKS)
Mohammad Sajjad Athar (MSA)

12th November, 2018 (Monday)

Lecture #1 (SM) Neutrinos in Particle Physics: An introduction to the most ubiquitous and the least understood `cousin' particle that make up the Universe we live in.

Lecture #2 (SKS) Introduction to the Standard Model of Electroweak Interaction

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13th November, 2018 (Tuesday)
Lecture #3 (SM) Neutrinos in Accelerator: The status of the accelerator-neutrinos.

Lecture #4 (SKS) Introduction to the Standard Model of Electroweak

Interaction

14th November, 2018 (Wednesday)
Lecture #5 (SM) Neutrinos in Accelerator: The future of the accelerator-neutrinos.

14th November, 2018 (Wednesday)
Lecture #6 (SM) Neutrino Oscillations: Status of the neutrino-oscillation; PMNS matrix and neutrino mass hierarchy; the open questions and challenges.

15th November, 2018 (Thursday)
Tutorial on Lecture #3 & 5:

15th November, 2018 (Thursday)
Lecture #7 (SM) Neutrino Inclusive Cross-Section: A summary of the inclusive neutrino cross-section, emphasizing the dominant errors in current measurements.

15th November, 2018 (Thursday)
Lecture #8 (MSA) Neutrino-electron scattering and Neutrino-nucleon scattering

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Lecture #9 (SM) Neutrino Flux: Neutrino species; Measurements of Neutrino Flux; proposed experiments to measure the flux (Neutrino & Hadron-production experiments).

16th November, 2018 (Friday)
Tutorial on Lectures 1,3, 5 & 6:

16th November, 2018 (Friday)
Lecture #10 (SM) Exclusive Neutrino Processes-I

17th November, 2018 (Saturday)
Lecture #11 (SM) Exclusive Neutrino Processes-II

17th November, 2018 (Saturday)
Tutorial on Lecture #7:

19th November, 2018 (Monday)
Lecture #12 (SM) The status and challenges of the neutrino induced Quasi-Elastic and Resonance processes.

19th November, 2018 (Monday)
Lecture #13 (MSA) One pion production

20th November, 2018 (Tuesday)
Lecture #14 (SM) Neutrino Production of the Coherent-Mesons: The status and challenges of the neutrino induced coherent processes.

20th November, 2018 (Tuesday)
Tutorial on Lectures #9, 10 & 11

21st November, 2018 (Wednesday)
Lecture #15 (SM): How to predict the neutrino spectra the ‘far’ location and associated errors

21st November, 2018 (Wednesday)

Tutorial on Lectures #12 & 13

22nd November, 2018 (Thursday)
Lecture #16 (SM)Neutrino Energy Scale and Prediction of Neutrino Spectra at the 'Far-Detector'

22nd November, 2018 (Thursday)
Lecture #17 (SM) Search for New Physics using Neutrinos: Select topics on windows to the new physics using neutrinos.

23rd November, 2018 (Friday)

Lecture #18 (SM) Search for New Physics using Neutrinos: Select topics on windows to the new physics using neutrinos (Part-I)

Lecture #19 (MSA) Deep inelastic scattering

Tutorial on Lectures #14, 15

24th November, 2018 (Saturday)

Lecture #20 (SM) Search for New Physics using Neutrinos: Select topics on windows to the new physics using neutrinos (Part-II)

Feedback session

Concluding session