

Research based course: **ATOMIC ASTROPHYSICS WITH COMPUTATIONAL WORKSHOPS:**

- Prof. Sultana N. Nahar, Astronomy, The Ohio State University, USA

- 3 sessions - lecture, computational workshop, certificate - Nov 5, 2017
- Textbook: "Atomic Astrophysics and Spectroscopy"

-By A.K. Pradhan and S.N. Nahar (Cambridge University Press, 2011)

- Computational Facility: Ohio Supercomputer Center (OSC), USA
- Venue: Dept of Physics, Jahangirnagar University, Time: TBA

SYLLABUS

Session 1, 1 hor (Nov 6, 2017): *Plasma, Atomic Structure, Atomic processes*

i) Light and Matter, Plasma Sources

ii) Atomic Structure: Hydrogenic & Non-Hydrogenic Spectra

iii) Hartee-Fock, Dirac, Breit-Pauli Approximations

iv) Atomic Process in Plasmas - Radiative Transitions, Electron-Impact Excitation

Session 2, 3 hours (Nov 6): *Computational Workshop*

Program: SUPERSTRUCTURE

Session 3, 30 mins (Nov 6): *Certificates distribution*