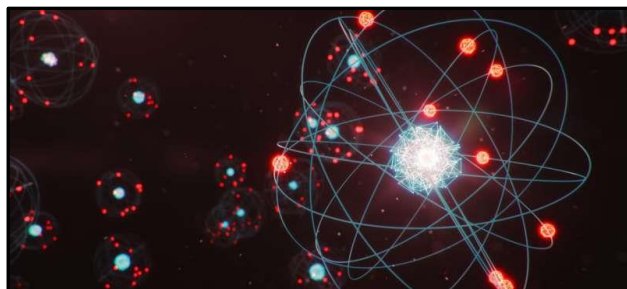


Manipal Centre for Natural Sciences  
*Centre of Excellence*

Short certificate course on

**TALYS: A Powerful Tool for Nuclear Reaction Modelling for Various Applications**



An Atom. Credit: Florida International University

**Dr. P. M. Prajapati**

Assistant Professor, Nuclear Physics Group

**Course duration:** May 30- June 3, 2022

**Format:** Interactive classes on 30<sup>th</sup> May, 1<sup>st</sup> and 3<sup>rd</sup> June 2022, from 5:30 pm to 7:00 pm together with additional reading /activities, on 31<sup>st</sup> May and 2<sup>nd</sup> June.

**Venue:** Microsoft Teams online platform.

**About the course:** Nuclear data are of fundamental importance in studies of nuclear technology such as the design of fission power plants, fusion devices and accelerators. It also requires for other advanced applications such as space, astrophysics and medical applications. TALYS is advanced nuclear-reaction modular program which simulates nuclear reactions and generate nuclear data in the energy range of 1 keV – 200 MeV. A suite of nuclear-reaction models has been implemented into a single code system, enabling us to evaluate basically all nuclear reactions beyond the resonance range. The objective of the course is to introduce nuclear reaction modelling code TALYS to the participants. During the course, participants will be exposed to the basics of nuclear reaction mechanism and will learn how to use TALYS for advanced nuclear science applications.

**Topics to be covered:** Introduction to nuclear physics, basics of nuclear structure and its properties, radioactivity, nuclear reactions, binding energy, concept of cross-section, nuclear models, importance of nuclear data, Introduction to TALYS code and its structure, TALYS installation in to Linux, IAEA-EXFOR database.

**Who can apply:** Students enrolled in an undergraduate program or higher. Lifelong learners who wish to get an overview of the field are also welcome.

**How to apply:** The number of participants is limited to 20. Use the following link for application:

[https://forms.office.com/Pages/ResponsePage.aspx?id=Qr2-Kf\\_xPUyWiAZ-NGDcH72COaxphpNi0vv\\_ajaHfpUNVg0T0IGTFNMMzBJWFNVRVjZWV0FCVkJNaNC4u](https://forms.office.com/Pages/ResponsePage.aspx?id=Qr2-Kf_xPUyWiAZ-NGDcH72COaxphpNi0vv_ajaHfpUNVg0T0IGTFNMMzBJWFNVRVjZWV0FCVkJNaNC4u)

Selected candidates will be notified through emails. **There is no registration fee.**

**Eligibility for the completion certificate:** 100% attendance and completion of all the modules in the course.

**Contact details:** MCNS office: Phone no: +91 820 2923571/2937742.

Email: [office.mcns@manipal.edu](mailto:office.mcns@manipal.edu)