



Università di Catania

Announcement and Invitation

The Department of Biological, Geological and Environmental Sciences, University of Catania, is hosting Professor Alfred Micallef from the Department of Geosciences, University of Malta, for the period 15 September - 15 October 2025.

During his stay, Professor Micallef will deliver a short intensive course entitled, *Earth's Energy Balance Modelling and Global Warming*. The course is open to all those affiliated to the University of Catania, but it is primarily intended for undergraduate and beginning postgraduate students that are new to atmospheric science, and who would like to enrich and widen their knowledge in the geosciences. A comprehensive set of lecture notes will be provided to all attendees. Students will be assessed via a test of 75-minute duration, at the end of the course.

The set of lectures (14 hours in total), to be delivered in person, will cover the following topics:

- revision of the relevant physics, as it relates to thermal radiation, e.g., radiation law of Kirchhoff, Planck's law, Stefan-Boltzmann's law and Wien's displacement law (and how the latter two are obtained from Planck's law);
- relevant thermodynamics will be explained/revised to ensure comprehensibility;
- global energy budget and its implications will be discussed in detail;
- concepts of positive and negative feedback will be introduced and employed in the understanding of the relevant mechanisms, e.g., atmospheric water vapour feedback mechanism (including the mathematical formulation);
- horizontal variations in insolation will be discussed qualitatively

The lectures will be delivered in English and held at Palazzo Ramondetta, Corso Italia 57, Catania, as per the following schedule:

Monday, 29 September 13:00-15:00 Aula G.Ponte

Tuesday, 30 September 13:00-15:00 Aula G.Ponte

Wednesday, 1 October 13:00-15:00 Aula A

Thursday, 2 October 13:00-15:00 Aula A

Friday, 3 October 13:00-17:00 Aula G.Ponte

Monday, 6 October 13:00-15:00 Aula G.Ponte

Attendees are free to ask questions during and after the lectures. Professor Micallef (alfred.micallef@um.edu.mt) will be available for consultation/tutorials at most times while in Catania.

Source of Funding: University of Catania