



Anzio: Paradiso sul mare



Anzio: the old harbour



SAPIENZA
UNIVERSITÀ DI ROMA



School of Engineering



CAESAR



Medaglia d'Oro al Merito Civile

Summer School of Thermodynamics

University of Roma
“La Sapienza”

Anzio, June 21 - July 3, 2010

The brochure, the application form and the Fact-sheet about the CIRCUS Summer School – 2010 can be downloaded at

www.turbomachinery.it

For further information contact the Summer School Director,

enrico.sciubba@uniroma1.it

or the Events Manager

claudio.larosa@uniroma1.it

A high-profile Course for excellent international students

The 2010 Engineering Summer School of the University of Roma 1 La Sapienza (UDR1) offers credit courses, with lectures held entirely in English, for both Graduate Students and for eligible Senior year Undergraduates in Mechanical Engineering and related Natural Science or Physics programs. Foreign students from the EU and from UDR1 partner universities outside EU are invited to come to Roma for a 2 weeks period during which they will attend the UDR1 Summer courses. Erasmus exchange students may also participate, and are eligible for full credit.

The CIRCUS Summer School offers:

- Thoroughly edited academic and scientific course contents, available on CD
- High-quality teaching, certified according to EU standards
- Full accessibility of the international Teaching body, consisting of world-renowned international Instructors
- A compact format that combines high efficiency and intensive contact hours with a flexible and student-friendly schedule
- General information about UDR1 and its rich didactic curricula
- Introduction to relevant Italian sponsoring Agencies, Industries and Consulting Firms
- Welcome party for all participants
- Social events in an international, relaxed and notoriously friendly atmosphere

Upon completion of the course requirements, the student is awarded a certificate and ascribed 6 ECTS study credits, which may be transferred to the students current study program.

The costs for the students are 300 € for tuition and 400 € for accommodation (double occupancy rooms). Course material, computer facilities, etc. are included in the tuition fee.

Each student should be prepared to cover her/his own living expenses (meals, transportation, extras) of approximately 300 €. A number of scholarships to cover lodging and food costs is available.

In addition to the Lectures, three Panels are offered in 2010:

June 26, 9.00-11.00: Panel 1 (Beretta & Gaggioli; Moderator: Moran): *Entropy: its meaning and calculation*

July 2, 9.00-11.30: Panel 2 (Bialecki & Heperkan; Moderator: Hanjalic): *Advances in HT*

July 2, 11.30-13.30: Panel 3 (Verda & Sciubba; Moderator: Gaggioli): *Exergy, economic cost and resource cost*

Note: the Panels are actually “debates”. Two participants take turns to defend their respective thesis, within the frame defined by the Panel title. All other attendees may ask questions, but not present their own thesis. The moderator poses questions and “streamlines” the debate.

There will be no final exam: a certificate of participation will be issued to students who attend ALL of the courses

Final Schedule

Instructor	Affiliation	Course id	Course Title	Contact hours
Michael J. Moran	Ohio State U., Columbus, Ohio, US	501	<i>Principles of Thermodynamics</i>	7
Richard A. Gaggioli	Marquette U., Milwaukee, WI, US	502	<i>Principles of Exergy Analysis</i>	7
Hasan Heperkan	Yildiz University, Istanbul, Turkey	503	<i>Principles of Heat and Mass Transfer</i>	7
Vittorio Verda	Polytechnic U. of Torino, Italy	504	<i>Principles of Thermo-Economics</i>	7
Kemal Hanjalic	Delft U. of Technology, the Netherlands	506	<i>Introduction to Computational Fluidynamics and Turbulence Modeling</i>	7
Gian Paolo Beretta	University of Brescia, Italy	507	<i>Entropy and Entropy Production in Non-Equilibrium Systems</i>	7
Michael Von Spakovsky	Virginia Tech, VA, USA	508	<i>Generalization of thermodynamics to microscopic systems: equilibrium and non-equilibrium considerations</i>	7
Ryszard Bialecki	Polytechnika Slaska, Gliwice, Poland	509	<i>Principles of Numerical Heat Transfer</i>	7
Enrico Sciubba	UDR1, Roma	510	<i>Entropy generation in fluid flow</i>	7

	June 21, Mo	June 22, Tu	June 23, We	June 24, Th	June 25, Fr	June 26, Sa*
9.00 12.30	501	501	510	508	507	Panel on Entropy
12.30 13.30	Lunch break					
14.00 17.30	502	502	510	508	507	

	June 28, Mo	June 29, Tu	June 30, We	July 1, Th	July 2, Fr	July 3, Sa
9.00 12.30	503	509	506	504	9.00: Panel on HT	tutoring
12.30 13.30	Lunch break				11.30: Panel on Ex cost	Lunch break
14.00 17.30	503	509	506	504		tutoring
19.30					Closing ceremony & Dinner	