Laurea magistrale in Ingegneria Energetica e Nucleare- Percorso tecnologie e applicazioni nucleari (2 yrs, Master of Science)

Number of students 2007-2008: **12 for Nuclear Engineering (48 for both branches)**
Language: **Italian (5 modules of 5 ECTS each in English)**
For further information:

http://didattica.polito.it/pls/portal30/gap.a_mds.espandi?p_a_acc=2006&p_id_cdl=1129&p_sdu=32&p_cds=856&p_header=&p_anno=0&p_info=&p_lang=EN

Courses Title	Duration	ECTS	Lecturers
First Year			
Complementi di centrali termoelettriche e nucleari (**Advanced nuclear and conventional power plants**)	17 Sept.-21 Dec.	5	**M. De Salve, B. Panella**
Complementi di energetica (**Advanced energetics**)	17 Sept.-21 Dec	5	**G. Del Tin**
Meccanica strutturale **(Structural Mechanics)**	17 Sept.-21 Dec	5	**A. Godio**
Termofluidodinamica computazionale **(Computational thermal fluid dynamics) in English**	17 Sept.-21 Dec	5	**R. Zanino**
Fisica dei reattori a fissione (**Nuclear reactor theory) in English**	17 Sept.-21 Dec	6	**P. Ravetto**
Protezione dalle radiazioni (**Radiation protection**) in English	17 Sept.-21 Dec	5	**M. Zucchetti**
Complementi di macchine (**Advanced fluid machines**)	18 Febr.- 31 May	5	**A. Mittica**
Metodi statistici e tecniche Monte Carlo **(Statistical and Monte Carlo methods) in English**	18 Febr.- 31 May	5	**P.Ravetto**
Regolazione e controllo degli impianti e sistemi energetici **(Control of plants and energy systems)**	18 Febr.- 31 May	5	**M. De Salve**
Impianti nucleari a fissione e ciclo del combustibile **(Nuclear fission plants and fuel cycle)**	18 Febr.- 31 May	5	**B. Panella**
Teoria del trasporto **(Transport nuclear reactor theory)**	18 Febr.- 31 May	5	**G. Coppa**
Fisica dei reattori a fusione (**Nuclear fusion reactor physics**) in English	18 Febr.- 31 May	5	**G. Coppa**
Second Year			
Localizzazione dei sistemi energetici (**Energy systems siting**) in English	17 Sept.-21 Dec	5	**E.Lavagno**
Sicurezza e analisi di rischio **(Safety and risk analysis)**	17 Sept.-21 Dec	5	**A. Carpignano**
Progetto termoidraulico degli impianti nucleari (**Nuclear power plant thermal-hydraulics**)	17 Sept.-21 Dec	5	**B. Panella**
Sicurezza degli impianti nucleari (**Nuclear power plant safety**)	17 Sept.-21 Dec	5	**C. Bertani**
Tecnologia degli impianti nucleari (**Nuclear power plant technology**)	17 Sept.-21 Dec	5	**M. De Salve**
Ingegneria dei reattori nucleari a fusione (**Nuclear fusion reactor engineering)**	17 Sept.-21 Dec	5	**R. Zanino**
Impatto ambientale dei sistemi energetici **(Environmental impact of energy systems)**	18 Febr.- 11 Apr.	5	**G. Sobrero**

Politecnico di Torino – Master of Science in Energy and Nuclear Engineering- Branch Nuclear Engineering

Attività a scelta dello studente tra (Credits assigned to modules to be chosen by the student between)		5	
Modelli e scenari per la pianificazione energetica (**Energy planning models and scenarios**)	18 Febr.- 11 Apr	5	**E. Lavagno**
Applicazioni biomediche delle radiazioni (**Radiation medical applications**)	18 Febr.- 11 Apr	5	**P.Ravetto**
Stage presso industrie o centri di ricerca **(Stage at industrial or research centres)**	July- Sept.	5	
Prova finale **(Final Test)**	At least 6 months	15- 30	

Note:

Despite of their neutral denominations, modules as "Safety and risk analysis", "Environmental impact of energy systems", "Computational thermal fluid dynamics", "Statistical and Monte Carlo methods", "Control of plants and energy systems" are oriented to nuclear technology applications.

Additional Information concerning ENEN Association

ENEN EXCHANGE COURSES (intensive courses of 5 ECTS in 7 weeks in English language, from 5 Nov. to 21 Dec. if ENEN students apply)

"Nuclear reactor theory"- P. Ravetto

"Radiation protection"- M. Zucchetti

"Nuclear fusion reactor engineering"- R.Zanino

"Computational thermal fluid dynamics"- R. Zanino or "Nuclear power plant safety"- C. Bertani

ENEN THESES (2007)
- **Development of multipoint methods for the neutron kinetics of critical and subcritical systems and implementation in a quasi-static framework**
- **Models and methods in the physics of molten-salt nuclear systems**
- **Improvements and optimization of the quasi-static scheme for nuclear reactor kinetics**
- **Wave-propagation and ray effects in multidimensional time-dependent transport calculations**
- **Theoretical- experimental study of the velocity field within the ADS windowless target**
- **Theoretical- experimental investigation on two-phase flow in helical tubes of the IRIS steam generator**