

Education



introduction

The **Education Program** of IPEN aims to develop human resources through scientific training programs and to provide and disseminate scientific information in nuclear and correlated areas.

IPEN is responsible for the graduate program in the nuclear area at University of São Paulo: the Nuclear Technology Program IPEN/USP. Since its creation, in 1976, the Program was evaluated with grade A by the Federal Government Evaluation (CAPES), the highest in this classification. In 2003 CAPES changed the evaluation criteria; since then, it has been considered a program of Excellence, with grade 6. Levels 6 and 7 are granted only to those programs having internationally recognized expertise. Level 6 was maintained in the last evaluation considering the period 2010-2012. Along its 37 years the Nuclear Technology Program awarded 2,217 titles: 1,511 masters and 706 doctoral degrees. The institution is also responsible for the Professional Master Degree - Lasers in Dentistry, in partnership with the School of Dentistry from University of São Paulo.

IPEN has a Scientific Initiation Program for undergraduate students aiming to stimulate young people to enter the scientific research career. This program allows the student to have the opportunity to develop a specially assigned study under the guidance of a supervisor. CNEN and CNPq are the main funding agencies supporting this Program. The institute also offers, since 2000, undergraduate disciplines for students of University of São Paulo. A total of 33 disciplines have been approved by the University. In the period considered over 1,000 students attended the courses. There is also a Scholarship Program for graduate students, funded by CNPq, CAPES and IPEN. Scholarships funded by Fapesp and CNEN are also available on demand, according to the conditions set forth in the respective notices.

Concerning scientific information support, there is available a central specialized library, which offers, beyond traditional collections and services, a comfortable and pleasant place to study, for students and the IPEN community, nicely equipped with wireless connection and stations for research support and consult to all the information resources. The education page on the IPEN website provides information about the structure and application procedures for the graduate program on nuclear technology and the Scientific Initiation program for undergraduate students. Statistical data on all programs and the calendar of events can also be accessed. Other information like the disciplines to be offered, the advisors for the graduate program and the scholarships offered and conditions and period for submitting applications are also available.

Nuclear technology graduate program

IPEN is responsible for the graduate program in the nuclear area at University of São Paulo, the Nuclear Technology Program IPEN/USP. This Program started at 1976 and presents three concentration areas: Applications, Materials and Reactors. The Federal Government Evaluation (CAPES) granted grade 6, considering it a program of Excellence, for the period comprehending 2010-2012. IPEN has maintained this grade since 2003. Along its 37 years the program awarded 2,217 titles: 1,511 masters and 706 doctorates.

The performance during the period considered in this report is shown in Table 1.

	2011	2012	2013
Masters	99	74	87
Doctorates	36	38	56
Offered disciplines	89	85	82
Total enrollment graduate	439	440	411

Professional master degree

IPEN is also responsible for the Professional Master Degree - Lasers in Dentistry, in partnership with the School of Dentistry from University of São Paulo. This program started in 1999 and until its closure in 2012, granted 164 master degrees. The program was evaluated with the highest degree by CAPES and was considered a model program.

Undergraduate disciplines

The institute also offers, since 2000, undergraduate disciplines for students of the University of São Paulo. A total of 33 disciplines have been approved by the University (Table 2).

	2011	2012	2013
Offered disciplines	17	16	13
Enrolled students	391	363	296

Scientific initiation program

The institute has a Scientific Initiation Program for undergraduate students aiming to stimulate young people to enter the scientific research career. This program allows to the student an opportunity to get into the scientific world under the guidance of a supervisor to develop a specially assigned project. CNEN and CNPq are the main funding agencies for the Scientific Initiation Scholarship Program supporting these activities. The number of scholarships offered in the period is shown in Table 3.

Funding Agency	2008	2009	2010
CNPq	45	50	60
FAPESP	9	6	7
CNEN	25	25	25
TOTAL	79	81	92

Every year the students holding undergraduate scholarship have to present their studies in a Seminar to an audience including a committee of evaluation. Prizes and certificates are given to the best presentations.

Graduate scholarship program

There is also a Scholarship Program for graduate students, funded by CNPq, CAPES, Fapesp. Since 2006, CNEN and IPEN started a scholarship program, a very old demand from the IPEN community. The total number of scholarships awarded during the period considered is presented in Table 4.

Funding Agency	Doctor degree			Master degree		
	2011	2012	2013	2011	2012	2013
CNPq	36	41	41	24	29	29
CAPES	29	29	30	29	29	30
FAPESP	14	15	24	18	10	10
CNEN	7	13	7	16	23	9
IPEN	7	8	8	17	17	17
TOTAL	69	79	89	76	80	83

Postdoctoral program

The postdoctoral program regulating the activity at the institution was approved in 2005. During the period considered in this report, around 60 professionals were enrolled in the program and 30 were supported by postdoctoral scholarships.

Facilities and support

To accomplish all the activities mentioned above, IPEN has a Board of Education and a dedicated building, having facilities such as: one hall for events, two auditoriums (70 people approximately), two computer labs and 10 classrooms.

Concerning scientific information support, there is available a specialized central library, which offers, beyond traditional collections and services, a comfortable place for the students and the IPEN community to study, nicely equipped with wireless and stations for search support and allowing the consult to all the available information resources. There is a technical and reference information desk provided by the staff. Access to all the main electronic information resources in the country, like electronic journals provided by CAPES and USP data bases are assured and managed through collaborative arrangements. The library also manages the institutional repository with 65% of the full text records published by the IPEN scientific community.

The education page on the IPEN website provides information about the structure and the application procedures for the graduate program on nuclear technology and the Scientific Initiation program for undergraduate students. Other information like the disciplines to be offered, the advisors for the graduate program, and the scholarships offered and conditions and period for submitting applications are also available. The entire processing of documents for submission to the graduate committee is made online.