

2.1. Overall Appreciation

The *undergraduate programme* of the Department is described in minute detail in Volume I of the Self-evaluation Report. The programme, as all the programmes of the Department is, from the theoretical and practical standpoint, of high standard, flexible and all-encompassing. The description of the courses in mathematics, and the recommended textbooks, indicate clearly that the student is given more than the necessary mathematical background to follow the statistics courses proper.

The courses for the undergraduate programmes are well thought out keeping in view the type of jobs statisticians are required to do in the government, private and public sectors and cover very satisfactorily all the important aspects of the current trends in statistics. The current evaluation system by the students at the end of each course is crucial and should be kept by all means.

The innovative adoption of *prerequisites* by the Department of Statistics is exemplary. Their use is essential when emphasizing the overall structure of the programme. Moreover, the specific role of each individual course within the total is greatly enhanced.

In the undergraduate programme, the Department allows its students to register each semester in the equivalent of 4 full courses per semester. This is in accordance with international standards and allows students to participate effectively in all course activities (assignments, projects, mid-term exams etc.). The average class attendance that results from this practice (15 hours/week) gives students sufficient time for such activities.

The provision for *practical training* in the National Statistical Bureau, in Business, Industry and Research Centers is extremely useful as it allows students to get practical experience in the genuine applications of statistics. The Review Team appreciated the attempts of the Department to help students in acquiring practical skills both in data handling and in the practical training. As undergraduate students hardly know in advance where they will be employed, the practicality of part of their training should help them being competitive on a job-market with rapidly changing needs and prospects. The Department wishes to promote practical training to all its students but lacks the resources.

The appointment of an individual *tutor* to every student is a well-established international practice and it is commendable that the Department has adopted it. Moreover it gives the tutors a better feeling for the shortcomings of students that come from a variety of different high school backgrounds. The students that the Team met expressed their satisfaction with the existing system.

2.2.1. At the Level of the Government

(1) The Review Team examined closely the *inflow* of high school students into the undergraduate programme. The team appreciated the attempts of the Ministry of Education to streamline the entrance regulations and to make the most of the individual qualifications of the students. For example, the decision is appreciated to give an overall final classification to each student and this based on a number of subjects. Nevertheless, it looks counterproductive to unify this classification too much. Both students and universities would benefit from an appropriate attribution of weights to the separate components that make up the final classification. The resulting system safeguards the individual preference of the incoming undergraduate while at the same time the receiving University could enforce its own standards.

(2) It looked definitely strange to the reviewers that *lecture attendance* at the undergraduate level is, by law, optional, especially when compared with the obligatory attendance, required by the Department, in the graduate programme. Given the enormous energy and financial means spent on education by the Greek Government, the Review Team wonders whether this lack of regulation can still be maintained. One of the natural outcomes of this exemption is the existence of the perpetual student who systematically postpones his graduation date and this at the expense of society. The damage done by this type of inactive students is endemic to the entire student population. Also on a European level, this deregulation is hardly defensible. Whereas the Review Team appreciates that it might be difficult to change this unfortunate situation quickly, it feels the need to bring the problem to notice together with the necessity of its solution.

(3) The Team was informed by the Head of the Department that some students (i) disagree with the use of prerequisites on the basis that it restricts their freedom of choice and (ii) find the number of courses for which they are allowed to register every semester, not sufficient. However, the students that the Team actually met, expressed their agreement with the system. Therefore, a further effort should be made by the Faculty to make all students understand that both of these practices are to their advantage. They make the studies more efficient and enhance the value of the degree. Furthermore, diplomas are more competitive internationally as the regulations are in line with international standards.

(4) As is mentioned later in the report, the team recognized that the existing and excellent logistic infrastructure, currently made available to the students by the Department, is at its limit for the current inflow of undergraduate students. A further increase in incoming students will make the whole set-up totally ineffective, while at the same time threatening the quality of the services rendered to the students. For example, it was apparent that the interaction between teachers and students is excellent. Increasing the student population (without a proportional increase in staff) will automatically lead to deterioration of the existing structure.

2.2.2. At the Level of the Department

(1) The number of standard statistics courses, taught every year in the undergraduate programme, is 33, compulsory and elective together. In addition to these courses, the Main Report gives syllabi of 15 other courses both on statistical methodology and on specific applications. While 33 standard courses spread over an eight-semester study programme is high, the remaining 15 syllabi cover subjects of contemporary interest in scientific research and in the job-market. Moreover, practically all of these subjects could be included in the postgraduate programme too.

Unfortunately, the mere lack of teaching staff makes it impossible for the Department of Statistics to regularly offer even a small subset of this list. The Ministry of Education and the University are urged to help the Department of Statistics to keep its high standards and worldwide reputation intact by providing more and competent faculty.

(2) The Review Team noticed that a number of courses, apparently similar in nature, figure on the lists of different study programmes. One way of avoiding this is to number the courses in a more or less logical order as in a *flow chart*. The first digit in a two-digit number could refer to the year or semester while the second could indicate a finer classification. This numbering could be completed with the graduate courses. Such a flow chart approach keeps the flexibility of the current system. It also simplifies a bit the role of the tutors that have to help the students in designing a logical sequence of courses. It goes without saying that all teachers have to concur on the total structure of the programme. (The Team was later informed that the Department had adopted such a scheme, but that the central administration of the University decided to use a numbering system, uniform for all Departments but not conformal to this logic).

(3) Within the existing *examination system*, decisions on passing and failing are made by the individual teachers, without any regulating supervision from within the Department. The good practice of evaluating graduate students by the entire scientific staff can be extended to undergraduate students. The Review Team suggests that an attempt should be made to extend the practice to graduating students. A genuine expression of the global appreciation at the end of the final year and this by the entire staff would be most welcome to the graduating student. The reviewers understand that the large number of undergraduate students makes an extension of such an evaluation procedure almost impossible. They nevertheless suggest that, once an improved evaluating system is fully operational in the final year, it can be gradually extended to the previous years. The presence of an external examiner is crucial and beneficial, although this practice is not exercised in Greek Universities.

(4) It is apparent that the *exercise sessions* do not require students to be active in problem solving. The Department should ponder how to turn this passive attitude into an active and vivid problem solving mentality. The Team warmly welcomes all steps that have already been taken in this direction by assigning exercises and arranging for tutorial sessions in which students can seek help and guidance in confronting the problems.

(5) The most intensive flavor of the undergraduate programme is statistics, geared towards applications in business and industry. The aspect of *stochastic modeling* appears for the first time in the courses Stochastic Modeling and Simulation (5th semester) and Stochastic Processes (6th semester). Many of the modeling aspects however are used in other courses like demography, econometrics, time series, actuarial statistics to name a few. It is desirable to interchange one of these modeling courses with one of the applied topics for which it would be a necessary prerequisite. (The Team was later informed that this year the course Stochastic Modeling and Simulation was taught in the 3rd semester on a trial basis. Also that the Department is considering offering the course on Stochastic Processes in the 4th semester, although there is some concern as to whether students will be mature enough to follow it.)