

## *Gender and Science at the University of Malta*

*Professor Angela Xuereb*

In recent years, the annual intake of female students at the University of Malta has grown steadily to numbers equal to and, for the past two years, slightly higher than that of males (Fig. 1). Various factors could have contributed to this increase among which are the opening of new courses attracting a large number of females (eg. Health Care, Psychology, Arts and Communication) and the introduction of a stipend. Although the University population is now over 50% female, this figure is not reflected in the intake of science-based courses. The 1999 student intake consisted of 55% females while only 20% of that female intake joined science-based courses. It should be noted that the male intake for science courses was only 32% of the total male intake in 1999, so that there appears to be a general negative trend regarding science in general in Malta.

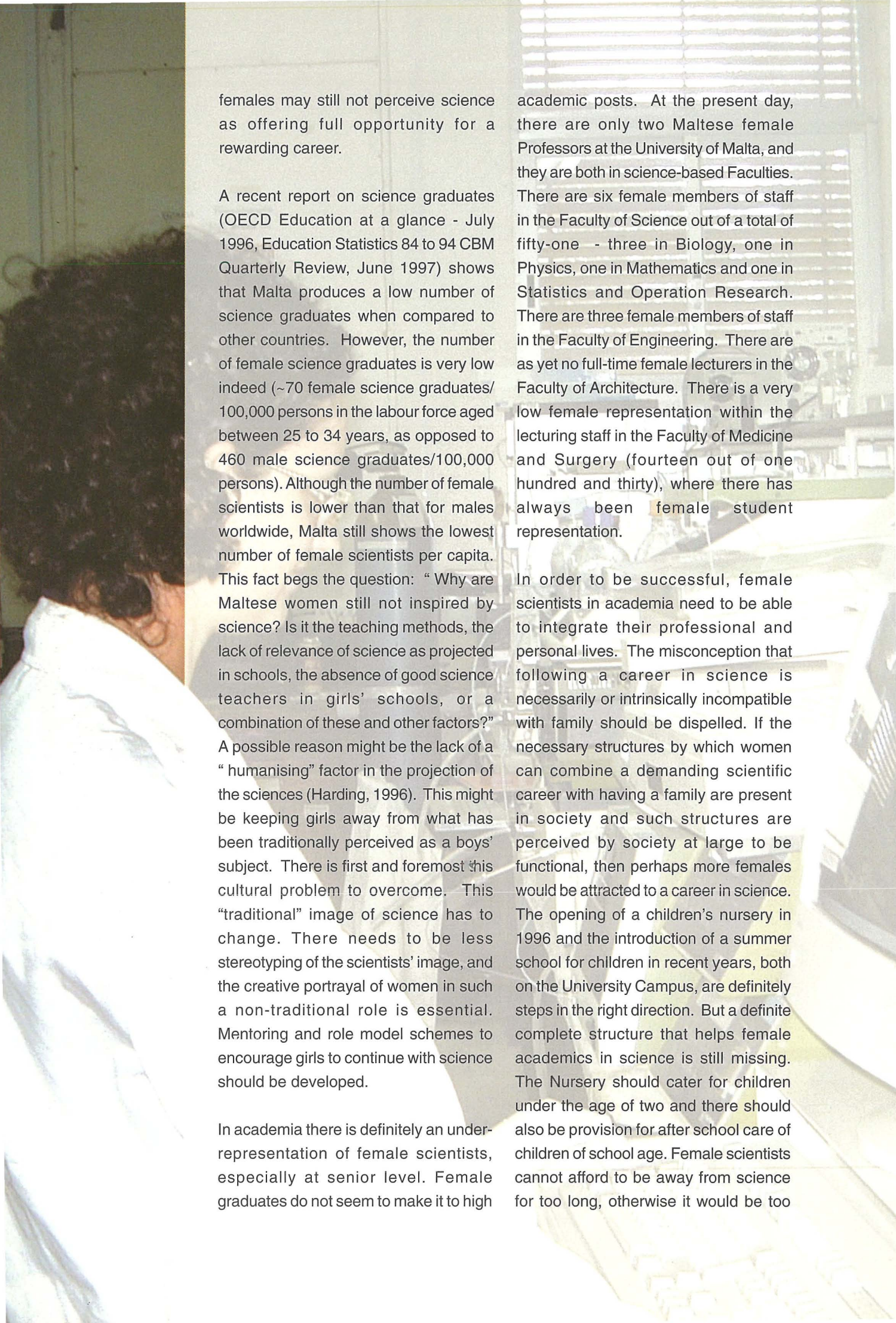
At University, females are very much under-represented in Engineering, Architecture and Information Technology (Fig. 2), but there seems to be a very slow upward trend in the number of females opting for courses in these Faculties over the past few years. In Dental Surgery, Medicine and Surgery, and B.Sc.(Hons.) the female intake has been steadily increasing to 50% of the annual intake. The B.Pharm.(Hons.) course has for some time been a female-oriented course but over the past few years has registered a decrease in the female intake as a proportion of the whole (72% of the total intake in 1995 as compared to 56% in 1999). This high representation of females, together with

the high female intake in the Institute of Health Care (IHC) courses (65% female intake in 1999) seems to show that, although these courses are science-based (although perhaps not as science intensive), it is the attraction of females to the health care professions which is of relevance. Females do not shy away from the sciences if relevance to daily life can actually be perceived. It is interesting to note that even at postgraduate level, since 1995, female participation in M.Sc. courses has been steadily increasing to 60% in 1998 and 1999. Perhaps we are now slowly approaching a situation where there is less gender-bias towards some science-based courses at the University of Malta.

The choice of subjects at Advanced level is determinant of one's future career. In 1995, at Advanced level, there was an under-representation of females taking Physics, Pure Mathematics and Applied Mathematics (Cauchi, 1996). By contrast, female students are invariably strongly represented in the non-science subjects, particularly languages, where up to 88% of students are female, philosophy (72%) and economics (60%). This shows that females tend to opt out of science at an early age. Sixth Form and University student choices in terms of opting for science is a reflection of what happens at secondary school level. As is happening in Malta at the moment, career choices are effectively made at the age of thirteen. It is at this stage that a special effort must be made to recruit more students, both male and female, but especially female, to the sciences. It would seem that both males and







females may still not perceive science as offering full opportunity for a rewarding career.


A recent report on science graduates (OECD Education at a glance - July 1996, Education Statistics 84 to 94 CBM Quarterly Review, June 1997) shows that Malta produces a low number of science graduates when compared to other countries. However, the number of female science graduates is very low indeed (~70 female science graduates/100,000 persons in the labour force aged between 25 to 34 years, as opposed to 460 male science graduates/100,000 persons). Although the number of female scientists is lower than that for males worldwide, Malta still shows the lowest number of female scientists per capita. This fact begs the question: "Why are Maltese women still not inspired by science? Is it the teaching methods, the lack of relevance of science as projected in schools, the absence of good science teachers in girls' schools, or a combination of these and other factors?" A possible reason might be the lack of a "humanising" factor in the projection of the sciences (Harding, 1996). This might be keeping girls away from what has been traditionally perceived as a boys' subject. There is first and foremost this cultural problem to overcome. This "traditional" image of science has to change. There needs to be less stereotyping of the scientists' image, and the creative portrayal of women in such a non-traditional role is essential. Mentoring and role model schemes to encourage girls to continue with science should be developed.

In academia there is definitely an under-representation of female scientists, especially at senior level. Female graduates do not seem to make it to high

academic posts. At the present day, there are only two Maltese female Professors at the University of Malta, and they are both in science-based Faculties. There are six female members of staff in the Faculty of Science out of a total of fifty-one - three in Biology, one in Physics, one in Mathematics and one in Statistics and Operation Research. There are three female members of staff in the Faculty of Engineering. There are as yet no full-time female lecturers in the Faculty of Architecture. There is a very low female representation within the lecturing staff in the Faculty of Medicine and Surgery (fourteen out of one hundred and thirty), where there has always been female student representation.

In order to be successful, female scientists in academia need to be able to integrate their professional and personal lives. The misconception that following a career in science is necessarily or intrinsically incompatible with family should be dispelled. If the necessary structures by which women can combine a demanding scientific career with having a family are present in society and such structures are perceived by society at large to be functional, then perhaps more females would be attracted to a career in science. The opening of a children's nursery in 1996 and the introduction of a summer school for children in recent years, both on the University Campus, are definitely steps in the right direction. But a definite complete structure that helps female academics in science is still missing. The Nursery should cater for children under the age of two and there should also be provision for after school care of children of school age. Female scientists cannot afford to be away from science for too long, otherwise it would be too





difficult to get back into it. The University should offer refresher courses, eg. Continuing Professional Development courses, for mothers who have spent time away from science. The University should give support to female academics by way of freedom to switch from full-time to part-time while bringing up a family, and back to full-time within a reasonable period of time. The adoption of flexible working practices should also be encouraged. It should be made possible for female academics to hold a career and raise a family, and to keep sane in the process.

It is still too early to say whether the increase in the number of female students on the various science-based courses observed over the past few years, and the increased support provided by the University, will reflect itself in perhaps a corresponding increase in the number of female scientists in academia especially at senior level. Perhaps the University should establish a broader range of criteria for promotion other than the number of papers published which would encourage females who had a career break to strive for higher positions. For this reason it is important that a conscious effort be made within all sections at the University to recruit more females into decision-making roles to give female academics a voice when policy is being formulated.

Both the University and Government should sponsor initiatives aimed at attracting women to science, engineering and technology and then providing an environment that retains them. It is important to establish what changes are needed to increase female participation in science in Malta. This would involve various sections of society,

especially the Education Division, the University, the media and various Government bodies which should monitor progress in this regard and implement the required statutory changes. It is quite likely that the solutions are no different from those mentioned above, and aimed at facilitating women's participation in and return to the workplace. However, there is a distinct need to attract more students of both sexes into science, and therefore to develop a true national science policy to cater for the needs of the country across the spectrum.

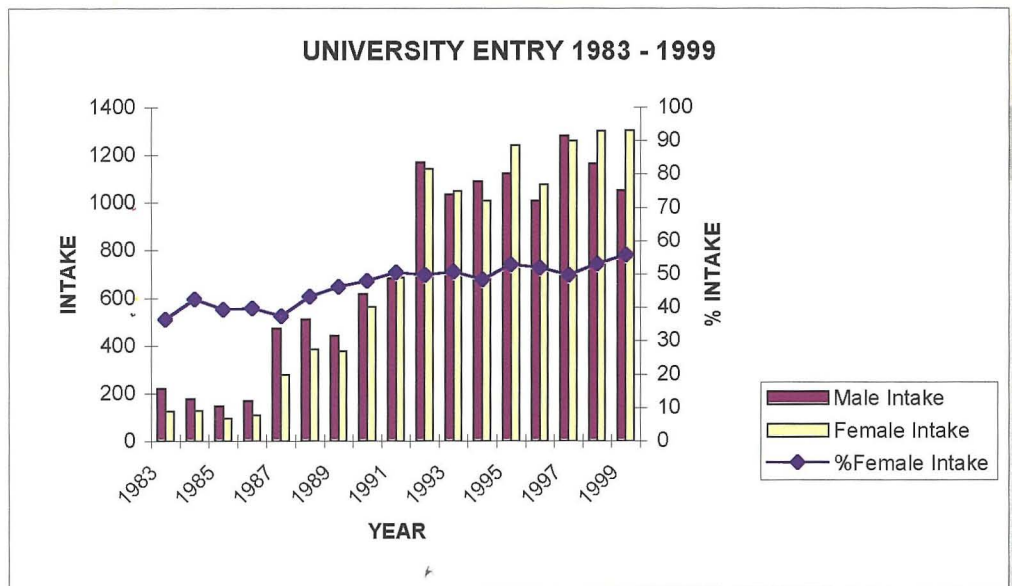
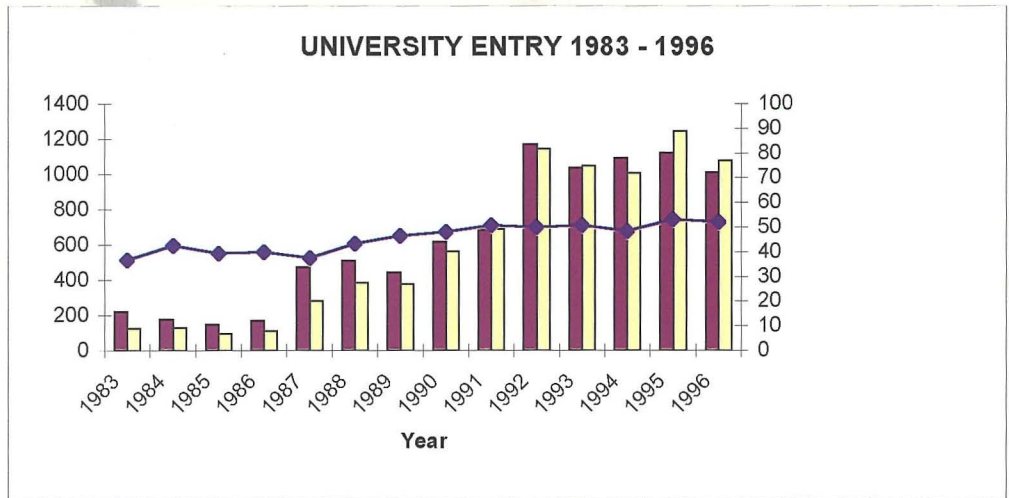
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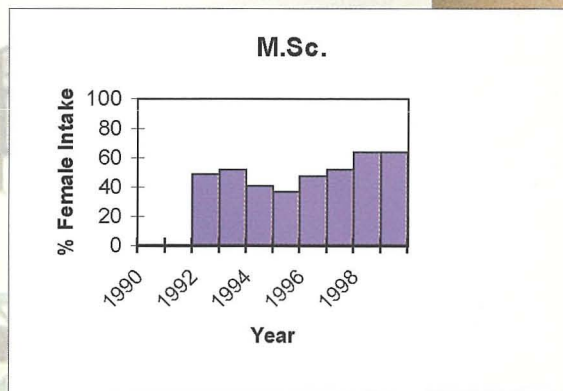
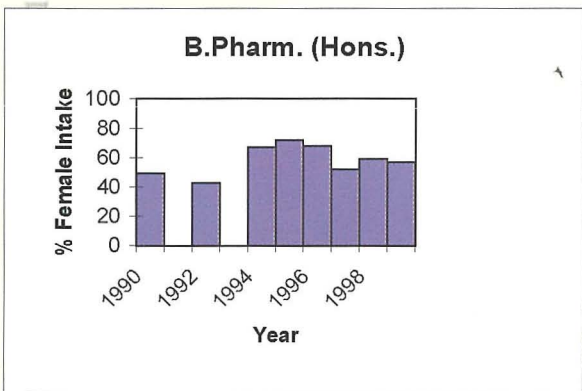
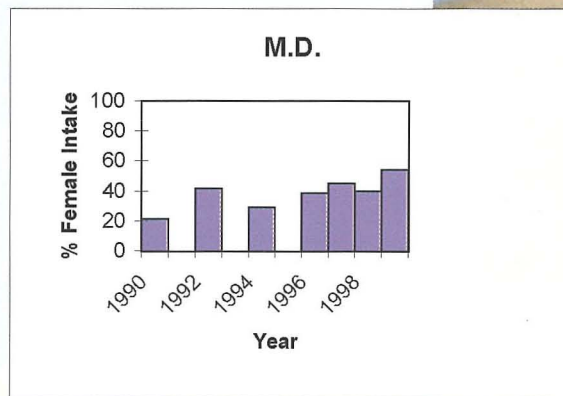
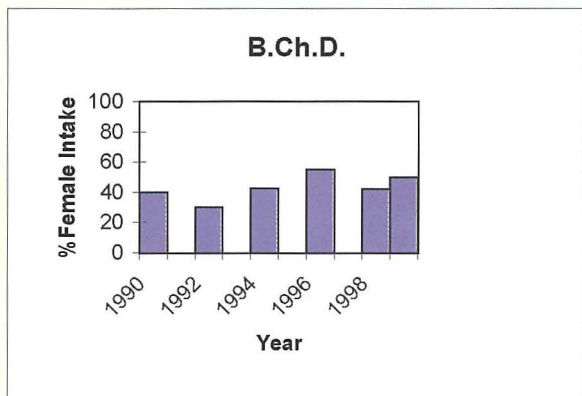
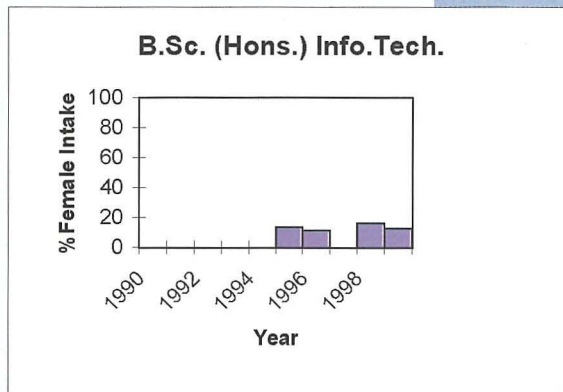
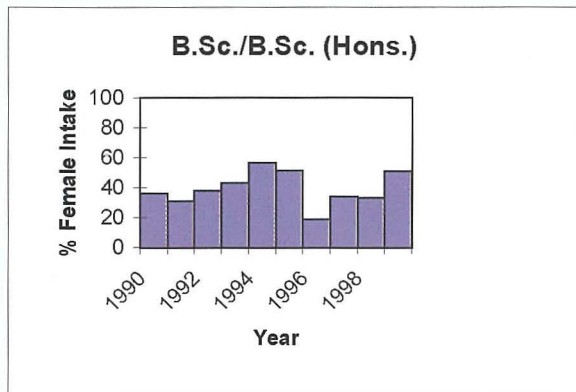
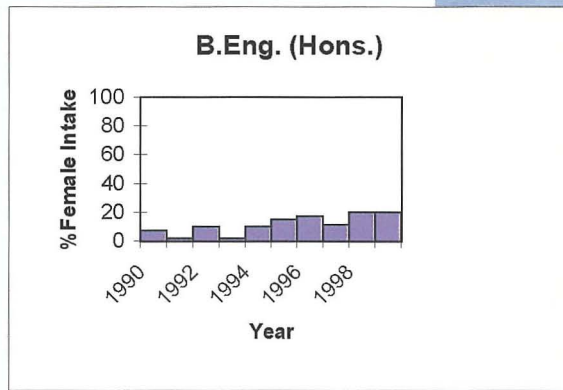
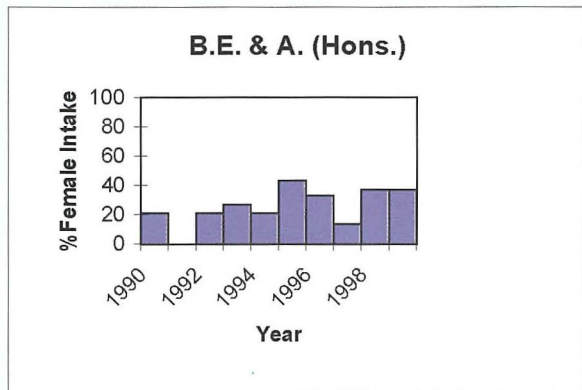
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Figure 1





**Figure 2**

Legend:

- <sup>1</sup> B.E. & A. (Hons.): Annual intake as from 1992.
- <sup>2</sup> B.Sc. changed to B.Sc. (Hons.) in 1995.
- <sup>3</sup> B.Sc. (Hons.) Information Technology started in 1995.
- <sup>4</sup> Dental Surgery: Annual intake as from 1998.
- <sup>5</sup> Medicine and Surgery: Annual intake as from 1996.
- <sup>6</sup> B.Pharm. (Hons.): Annual intake as from 1994.
- <sup>7</sup> M.Sc. includes M.Sc. in Public Health, Engineering, Agricultural Sciences, Veterinary Pharmacy and Faculty of Science.