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(Occupational Health and Safety)

Thesis

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An Evaluation of the G.Dip. OHM at the
University of Ballarat 1979 - 1992

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UNIVERSITY OF BALLARAT

MASTER OF APPLIED SCIENCE IN OCCUPATIONAL HEALTH AND SAFETY

THESIS

AN EVALUATION OF THE GRADUATE DIPLOMA IN OCCUPATIONAL HAZARD MANAGEMENT AT THE UNIVERSITY OF BALLARAT 1979 - 1992

IAN SWANN

1996

(This thesis has been submitted in part fulfilment of the Master of Applied Science in Occupational Health and Safety)
Abstract

The objective of the study was to evaluate the Graduate Diploma of Occupational Hazard Management at the University of Ballarat to determine:

(i) Whether the changes in the Course have matched the needs of clients over the period 1979 - 1992;
(ii) What part of the Ballarat University College experience students found attractive and which parts repellent; and,
(iii) What the Graduate Diploma should be delivering now, to satisfy the needs of students and employers.

A questionnaire was mailed to all graduates of the Graduate Diploma.

Frequency tables and summaries were prepared for all 24 questions. Post hoc analyses of respondents comments were compiled. The major findings of the study were: that the Course had matched student needs; specific academic and non academic aspects of the Course were very highly valued by students; and there was a need to respond to some issues raised in relation to: Course aims and student aims; individual needs; employer needs and Course content. A number of recommendations were made proposing changes to Course content and presentation and professional skills development.
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Ballarat student who contributed significantly at the time of preparing the
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1 INTRODUCTION

The Graduate Diploma in Occupational Hazard Management began in 1979 and was the first Occupational Health and Safety tertiary course in Australia (Ballarat University College, 1991). It was unique in its part time structure and breadth of subjects covered (Suckling, 1981). It is conducted at the University of Ballarat (previously Ballarat College of Advanced Education; and Ballarat University College) which has been recognised for its pioneering work in occupational safety and health (Svennson, 1984).

Although the Graduate Diploma has undergone continuous review and modification, in response to changing circumstances and student and graduate feedback, the fundamental goals of the Course have remained the same:

'...to provide the knowledge and skills for health and safety professionals to be able to enter into organisations and coherently argue, justify and implement solutions based upon designing out of health and safety problems.'

(Ballarat University College, 1991, p.1)

There has not been a formal evaluation of the experiences of graduates of the Course or its application in the workplace. Earlier reviews of the Course by Suckling (1981) and Wooley (1984) indicate strong student support
and favourable comparison with overseas counterparts. There are now sufficient graduates employed, throughout industry, to provide a large enough pool of people, to form a population from which a sample may be drawn to provide data - which will allow a statistically significant evaluation of the Course. The assumptions on which the Course has been developed and presented can now be tested against the workplace experiences of graduates.

The focus is on how outcomes for graduates relate to the Course format, content and delivery i.e. how well it has met the needs of its students and, indirectly, employers, in providing the appropriate skills required to perform on the job; and the capacity of the Course to adapt to changing circumstances. These are a direct measure of how well the Course has met its stated goals. This was measured through a survey of graduates of the Course.

In recent years, there have been many health and safety courses developed at various levels, including post graduate diplomas. eg Western Australia Institute of Technology and the University of New South Wales. The Ballarat Course, however, retains some clearly distinguishing characteristics. In particular: block release, on-campus residence (also referred to as co-operative mode); the benefits (or otherwise) of which have been reviewed earlier (Wooley, 1984).

A review now, is timely, as it takes place following a period of rapid (and continuing) change in occupational health and safety in industry due to a range of forces including greater interest from professional groups, management and unions (Worksafe Australia, 1993).
Examples of changes affecting health and safety practitioners include its increasing importance as an industrial issue (Matthews, 1985), the widespread introduction of health and safety legislation eg. *The Victorian Occupational Health and Safety Act 1985*, and quality management (Lamm, 1994).

This thesis reviews the nature and practice of evaluation, particularly in regard to education, post graduate educational programs and occupational health and safety. An appropriate method of evaluation of a post graduate educational program in health and safety was developed and trialled on the Ballarat Course. Key issues were identified, the relevant literature summarised, a method of study was developed and data was collected and analysed. The term "evaluation", as used in the title and body of the thesis, refers to the process and procedures described above. The terms "Course" and "OHM Course" are interchangeable throughout, and refer to the Graduate Diploma of Occupational Hazard Management (Grad. Dip. O.H.M.) at the University of Ballarat. "Program", refers to the educational objectives and the educational experience as a whole; it refers to the Course teachings and learnings, and the personal and professional development of people that occurs during and as a consequence of the Course. The approach and attitudes instilled in the graduates are integral outcomes. The term VIOSH refers to VIOSH Australia, the Centre for Teaching and Research in Occupational Health and Safety, an educational and business unit within the School of Engineering at the University of Ballarat.
The thesis sets out the formal Aim and Objectives of the study and the study design and hypotheses. This is followed by a description of the questionnaire and its development, an analysis of data - the results of which lead to conclusions and appropriate further actions.

1.1 The nature and purposes of evaluation

Robinson, (1984) states that evaluation now forms a distinct discipline with two possible purposes: Assessment of the worth of a program or service; and to influence the decisions of funders and administrators. She puts forward three approaches:

- The experimental paradigm
- A goal attainment model
- Elucidation (non experimentally based) models.

A broader view of the purposes or reasons for program evaluation is given by Owen, (1993 p.3). They include the purpose:

"...providing information designed to assist decision making about the object being evaluated."

and the reasons:

- enlightenment, to enable program users to better understand the effects of their programs;
- accountability, to fulfil obligations to report on responsibilities by program managers;
program improvement, to allow changes related to impact or effectiveness;
program clarification and development;
and even symbolic - to give the appearance of action.

All, except the last, are relevant to the current exercise.

Owen (1993) considers that the objects of an evaluation include: planning, programs, policies, organisations, products and individuals. Educational courses are programs, which have elements of the other categories as part of them. The element which we are investigating here is the educational course as a product, seen from the viewpoint of the customers - the students, and to a lesser extent, employers and the wider community.

Owen (1993) describes five Evaluation Forms. Of these, the one most appropriate for this study is Impact Evaluation because it has the following characteristics: It has an orientation to justification; it has a settled state; it has a focus on outcomes; its timing is after the event; and the typical approaches used are objectives based and needs based.

Impact evaluation is important because it provides: knowledge of the range and extent of outcomes under review; information for accountability for funds and other resources; and guidance about what to do next.

In determining what should be the focus of an evaluation, Sredl and Rothwell, (1987 p.303) considered several hierarchical models. For example:
Subjective reaction of participants (The lowest level)
Measurement of learning acquired (Test scores)
Changes in job behaviour (Application of skills)
Results (Organisation impact)

Only the first three are appropriate to this study, as the evaluation of the Graduate Diploma is focussed on graduates.

Foyster (1992) provides a set of performance indicators to measure the performance of a complex system. Indicators are grouped according to whether they provide information on a number of factors:

- operational efficiency,
- outcome efficiency,
- effectiveness,
- social justice, and
- standards of service.

Those most relevant to this study are: outcome efficiency, in terms of whether there was an outcome for the student/client consistent with the aims of the Course; and effectiveness, based on the clients perception of whether the Course met their needs and expectations.

1.2 Selection of an evaluation technique

Kress, (1988, p76) stated there were three ways of collecting data:

- experimental technique (not feasible in this case, since it was not possible to set up a control group).
observation techniques- impractical since it would have involved visiting many workplaces, and by a survey method which appeared the most appropriate. This was confirmed by Kinnear and Taylor, (1983) who saw the survey as an appropriate tool when information needs were known and the respondent group clearly identified. Worsley (1988), commented on the ability of questionnaires to provide high external validity but raised the issue of response rates which if low could create high sampling error. Worsley (1988) had experienced response rates without follow up to be 20% to 30%. An experienced market researcher (Jamie Campbell and Associates) confirmed this expectation but predicted that factors such as personal interest of respondents in the subject and the familiarity of the respondents with the body on whose behalf the study was undertaken would probably give a response rate of around 60%.

A review of other studies and questionnaires used was undertaken, including:

Delphi surveys by Dawson and Barker, (1993) on professional training needs and Booth, (1991) on company purchasing procedures related to OHS showed that this survey technique was not suited to the large number of respondents (n. > 140 No.) expected in this study.

Studies by Long, (1988) evaluating a post graduate occupational health course at Sydney University and Farr, Patterson and Witheriff, (1991) undertaking an occupational analysis and skills audit for OHS practitioners
showed initial response rates of 70% and 37% respectively, and in meeting aims and objectives showed that the survey questionnaire was an appropriate instrument for the study.

The study cross sectional study of graduates by Long, (1988) mailed out a questionnaire survey which achieved a 70% initial response rate and the responses (n = 112 No.) succeeded in providing sufficient data similar to that required for the current study to meet its aims and objectives. The questionnaire covered five interactive variables measuring effectiveness.

. Previous and present occupation
. Rising or falling amount of occupational health activities
. Advantage of course in obtaining present job
. Reason for undertaking degree related to outcome.

This indicated that the current study would provide a sufficiently large and appropriate sample.
2 AIM & OBJECTIVES

Aim:
To evaluate if, in the opinion of graduates, the Graduate Diploma of Occupational Hazard Management is achieving its goals, and so determine necessary changes in the course.

To achieve the above Aim, the following objectives were developed:

Objectives:

(i) To evaluate whether the changes in the Graduate Diploma of Occupational Hazard Management program have matched the needs of clients over the period 1979-1991.

(ii) To determine what part of the "University of Ballarat experience" ex-students found attractive and which parts repellent.

(iii) To determine what the Graduate Diploma should be delivering now, to satisfy client needs.
3 STUDY DESIGN

3.1 Stages of Study Design

Starting with the Objectives previously developed in Section 2, the study proceeded in three stages:

(i) A literature search.

(ii) A questionnaire survey.

(iii) Analysis and interpretation of the survey data.

3.1.1 Information gathering and formulation of an Aim, Objectives and hypotheses.

Information gathering techniques consisted of a literature search, supported strongly by anecdotal information from experts in several fields, including: market research, program evaluation, education and training. The personal experience of colleagues and former students, practising as OHS professionals, was also used. See Appendix B for a list of persons consulted.

The literature search focussed initially on OHS reference systems, including CD Rom data bases. Data bases searched: The United Kingdom Health and Safety Executive (HSELINE), the United States Department of Health and Human Services National Institute for Occupational Safety and Health (NIOSH TIC) and the International Labour Organisation International Occupational Safety and Health Information Centre (CISDOC). Little material of direct relevance was found.
A wider and more local search of educational, market research, psychology, training and development, management and evaluation literature was conducted, together with a review of the designs and outcomes of other Australian studies. This led to the identification of relevant methodological issues and a decision to adopt a client focussed, market research orientated survey of Course graduates using a mail out questionnaire to gather data.

3.1.2 Application of theory to the Aim and Objectives

The aim of this study was to determine graduates' satisfaction with factors incorporated into the goals of the Graduate Diploma of Occupational Hazard Management.

To evaluate the Graduate Diploma of Occupational Hazard Management (OHM), the effectiveness of the course, from the perspective of its graduates, was measured in terms of their attitudes and reported outcomes. The adaptability of OHM to workplace change was assessed; as was the value of the block mode experience. Measurements, using a questionnaire, were also made of: learning, application of skills, and outcomes for individuals, as outlined in the Introduction.

The study had to take into account the interaction of the forces of change in the workplace and society for which the Course program must prepare graduates. The body of OHS knowledge implies that the workplace emphasis may be on: specific hazards, management systems, organisational structures, social expectations and interpersonal relationships. A test of the
value of the Course is its capacity to produce graduates who can adapt to these, while satisfying the overall Course objectives.

While the study focuses on the meeting of needs of the graduates, who were the primary source of the research data, the term, client includes other stakeholders in the program: the employer who’s needs the graduate seeks to serve; and, by extension, the wider community, which stands to benefit both from the economic success of the employer and also in a direct sense from enhanced standards of safety and improved outcomes. These other stakeholders were not the subject of this study.

An analysis of the attitudes of graduates towards relevant aspects of the program is necessary, in order to identify what educational and non educational issues are important and to understand where and how the Course is meeting or not meeting needs, in order to evaluate different parts of the program. Differentiating the needs of subgroups and individuals is also important.

An analysis of what the Course should now be delivering provides a basis for comparison with what the Course is actually delivering; and a sound theoretical basis for any changes deemed necessary by the Course management.

Application of skills learned in the Course was determined by comparing what people do in the workplace with what they have been trained to do. To some extent this affects organisational impact, particularly when related to each graduate’s position and status within the organisation.
The impact of the Course on the individual was measured more thoroughly by studying outcomes for individuals - whether the Course met their needs, whether they have been successful etc. This impact extends also to the non academic area.

A series of relevant issues were identified and potential outcomes formulated. These considerations were used for the design of the questionnaire. A pilot questionnaire was developed and tested.

The application of skills and perceptions of the value of Course learnings, by graduates, were considered crucial, in determining whether they believed the Course had properly met their learning needs. The technical content of the Course, as a measure of learning acquired was only addressed in the context of identifying gaps in content and redundant learnings (learnings not of use in a graduates' professional experiences). Which learnings were most durable, and why they have endured, was established.

3.1.3 Analysis and interpretation of results of the questionnaire survey.

All checklist responses were entered and coded into a Microsoft computer software Excel spreadsheet and frequency tables and graphical representation generated.

The data obtained led predominantly to descriptive analyses.

Count data representing categorical and scaled responses were analysed:
(a) by producing tables to enable percentages and rank ordering of data; and, 
(b) using chi squared statistical techniques for goodness of fit, or equality of 
two proportions, to test null hypotheses.

Free response data was used: either to set up a post hoc classification system 
to reflect the predominance of responses received; and to add a qualitative 
element to statistical analysis.

Each question was analysed separately, then according to predetermined cross 
tabulations with other questions where necessary. Sample responses were 
split into blocks of earlier and later years to test for changes over time for key 
indicators.

The results were then further analysed to assess the Aim and Objectives of the 
study.

3.2 Scope of the study

The population was: all graduates of the Occupational Hazard 
Management Course, who commenced the Course between 1979 and 1991, 
(N = 238 No.) and who were on the University of Ballarat mailing list. The 
sample was those who responded to the mailed out questionnaire 
(n = 156 No.). The information sought concerned general perceptions and 
facts about graduates' experiences during and since the Course, using the 
approach in Section 3.1.2. It did not seek to directly address issues such as: 
quality of delivery, or details of subject content. No control group was used.
The questionnaire sought data to determine whether the course met the perceived needs of ex students (and by implication employers and the wider community), and whether it had changed to meet these needs.

The focus and content of the questionnaire arose from the process described in 3.1.1., above. The focus was not on the technical content or on quality of delivery. The questionnaire focussed on whether necessary skills had been acquired, and whether the learning mode was appropriate. Of particular interest were such Course aspects as: the residential on campus and off campus components. An attempt was made to identify factors significant in the initial decision of students to undertake the Course. The performance criteria were the measurable outcomes of the health and safety activities of the ex-students and their influence in industry. Part of this assessment involved examination of student variables, such as: age, experience etc. and any barriers to successful completion of the Course (See Questionnaire Appendix C).

The study was client focussed in terms of meeting perceived needs rather than attaining a prescriptive set of ideals.
4  ISSUES AND TOPICS FOR INVESTIGATION

4.1 Issues

A market research approach, similar to that employed commercially for other service industries, was used.

In determining whether the Course Objectives had been met, several issues were established, from which topics were developed using the people and documents outlined in Section 3.1.1.

Many factors including the nature of the Course, its mode of delivery and individual differences of students interact to define each students' learning experience.

The following issues were developed from the literature review and anecdotal evidence:

(i) Course aims and student aims

(ii) Individual needs, taking into account
    - the characteristics of the student body.
    - the characteristics of the Course.

(iii) Employer needs.

(iv) Course content.

(v) The relevance of the Course to likely long term changes to the nature of OHS jobs and organisations was also considered.

4.2 Topics

The issues developed were examined as follows:
4.2.1 Course aims and student aims

Directly related to the Aim of the study was: whether the aims of the Course were seen to be met and whether those aims were coincident with students needs.

Perhaps the Course is seen to be meeting its aims but that those aims are not coincident with students' perceived needs in some ways. Students reasons for doing the Course could be expected to be wider than those relating directly to Course Aims.

The Course was changing over time and there may be differences in how well it met the needs of different groups of students from different times. Some way of measuring this may be desirable as well as determining attitudes of the more recent students.

The Course Objectives, set out in the Course Handbook (Appendix A), were of two kinds - educational, defining the knowledge expected of graduates; and behavioural, defining a set of abilities which allow graduates to plan and commission corporate health and safety strategies. Student attitudes towards the educational and behavioural objectives were tested by asking specific questions. A test was also applied to how well these matched their current job requirements, by finding out whether they use the required skills for a significant part of their jobs.

It would be useful to find whether employment changed after Course completion ie what avenues are opened up partly as a result of the Course.
If Course objectives were met, it could be expected that a number of graduates used the generic aspects of their learned specific skills in senior management positions in the OHS field or other positions outside.

If the skills are adaptive and strategic, then we could expect they will still be relevant to their current employment. The adaptiveness of the Course can be tested by finding whether the skills learned are still useful in a changing environment.

4.2.2. Individual needs

(a) Student characteristics

A known characteristic of the student body of the Course was the wide diversity of students' backgrounds, including diversity of: age, education, experience, location etc. (See Appendix D: VIOSH Australia student records) This raised the question of whether the students' needs were being met, in terms of the nature of training required and its mode of delivery. Nearly all of the students were part time and have a full time job and employers offer varying levels of support (S Cowley, Director VIOSH Aust., personal communication, 1993)

The following topics arose from the characteristics and concerns identified in 4.1 and discussions with VIOSH staff and past graduates (See Appendix B for list of persons consulted)

- Significant differences in response were expected between those with occupational health and safety experience and those not experienced. The two groups may value the Course differently and the less experienced fall somewhere in between.
• The student profile had changed significantly over the years, particularly in regard to: age, sex, academic background, reasons for doing the course and reasons for selecting the Ballarat course.

• A large proportion of students return to study after a break, particularly for post graduate courses. With older students, it may be for a career change; following a period out of the work force for child rearing; or simply as part of a late developing career move. These students often have special needs, eg academic transitional or study process. It was important to know what proportion of the student group this particular set comprises.

Ramsden, (1992) describes two alternative student approaches to learning - deep learning where there is an intention to understand and the student maintains the structure of the task; and shallow learning where the intention is only to complete the task requirements and its structure is distorted. Deep learning has characteristics which appear to be related to the OHM Course. There is a focus on concepts, previous knowledge is related to new knowledge, knowledge is related from different courses, theoretical ideas are related to every day experience, evidence and argument are distinguished and content is organised and structured coherently.

• It was proposed that age was a factor which broadly reflected differences in people's approaches and reasons for undertaking a course. eg the under 25 years old group was likely to represent people continuing on after an undergraduate course or returning to study after a short break. The VIOSH staff speculated that this group was likely to have less OHS experience, fewer social ties, less family pressures and to see the Course as a natural career move. The 25 -35 year old group was seen to be more likely to be people with a strong sense of career commitment, workplace experienced and as having expectations of where they were going. The oldest group, say over 35 years old, may be looking for a career change, may include people without strong academic backgrounds; have extensive experience, or are soundly entrenched in the profession and want to enhance their knowledge.
It was important to find how the relative proportions of these groups were changing with each intake into the Course, particularly if the results suggested that the potential pool of prospective students was changing eg. towards a student group with perhaps less experience of OHS but more formal OHS training or basic educational qualifications.

- Over time, prior educational qualifications should increase, particularly as the pool of highly experienced health and safety practitioners without qualifications was tapped and not renewed because less people were entering the OHS profession on the basis of experience alone.

- An increase in the numbers of females compared to males in the course was expected, as more women complete tertiary undergraduate courses and become involved in positions of responsibility. This may not be reflected numerically, if there is something about the workforce from which prospective students were drawn, which inhibited educational and managerial opportunities. On the other hand nursing, where women traditionally have been in a majority, was seen by VIOSH as a natural pool of OHS students. Nurses may be employed as Occupational Health Nurses or in the hospital area of the health industry.

(b) Individual differences

Individual differences have also been shown to be closely related to learning styles. Briggs Myers (1980), found that people can be divided into types according to combinations of personality traits. Lawrence, (1989) demonstrated how this could lead to common characteristics among occupational groups and differing preferred learning styles for individuals of different types. The implications here are that in a Course comprising people from different professional backgrounds their attitudes may be determined not only by course content but also method of presentation.
(c) Mature age students

Nearly all students were mature age (using the definition of West et al., 1980, cited in Stubbs, 1987); as one who is entering after passing through some barrier since leaving school; usually time).

Stubbs (1987) found that one problem area for mature age students was that maths and science skills suffered, temporarily, from a break in study. She also found that mature age students fared well in areas requiring experience and verbal aptitude. Another mature age trait was the difficulty in finding time not just to pass, but to excell, as a means of personal justification for studying. Personal factors were seen as a problem, particularly for women, in the face of family, marital, social and financial pressures.

Adult learning principles important to OHM course delivery were: the need of adults for self direction, the need for participation, and problem reoriented learning solely to meet needs (Knowles, cited in Stredl, 1987); and, that adults learn from each other (Laird, 1985).

(d) Course Characteristics

There were aspects of the current Course which set it apart:
The mode of study was: intensive residential periods on campus, followed by off campus assignment work (personal observation)
The residential aspect offered an experience not usually available to students. It enabled the meeting and discussion with other professionals from different work environments, and the development of supportive networks for off campus periods (personal experience).

These characteristics can have implications for the attractiveness of the Course to prospective students, provide enhanced learning experiences, or act as a barrier to course completion.

- A proportion of people did not complete the Course. Identification of barriers to completion experienced by graduates could be studied. The barriers to completion may be divided into course related and non
course related categories. The course related category was examined in terms of academic and non academic factors.

As Halloran, (1985) points out the kind of institution affects the learning with questionable quality outcomes for adults within bureaucratic structures.

- The geographical location of an educational institution was seen as a major factor in determining where full time students were drawn from. Due to the specialised nature of the OHM Course, the location of the students may be a major factor where no similar accessible alternative course existed. This factor may have changed over time, as other OHS related courses have been developed, particularly in major population centres. The Course may still appeal to those people remote from major population centres or those unable to attend classes on a weekly basis. Some industries were, by their nature, remotely located (eg mining).

- It was important to identify the non academic course aspects, known by VIOSH staff to be significant. For example, the course format and the particular circumstances of the on campus residential component were believed to be significant attractions to some students. Ratings of non academic factors would determine how they impact on the course and whether some need to be reinforced or counteracted.

- Ballarat is well known as a tourist destination. It may be perceived as a nice place to do a course of this format. It may influence some students choice of course.

4.2.3 Employer needs

A recent study on skills sought by employers of graduates (National Board of Employment Education and Training, 1992) found that after knowledge and technical skills employers sought communication, teamwork and interpersonal skills, and the ability to apply academic learning to a work environment.
• Information about employment outcomes for Course graduates could be taken as evidence of the standing of the Course with employers; and the value of the qualification and Course content as part of a person's longer term package of skills. ie. this was a measure of how well the course meets its Objective (Appendix A).

• It may be expected that students' employer industries were skewed eg. towards mining, or government agencies either by reason of geographical location, employer support etc; similarly,

• It would be useful to find whether this changed after Course completion, what avenues are opened up, partly as a result of the Course.

• It was expected that most students were associated with large organisations, both on commencement of the Course and following completion (personal observation). It would be useful to know what sized organisations value graduates of the Course and find how the appeal could be enhanced to smaller, and hence a much larger number, of organisations.

• VIOSH staff said most students received some degree of financial and/or other support and that this support was related to the type of employer. The level of support may be a major factor in undertaking or completing the course.

• OHS job content varied considerably in scope and emphasis, in different industries and organisations. Not all aspects were taught at Ballarat. If some of the aspects not taught were found to be prevalent in many OHS jobs, by implication, the employment prospects of Ballarat graduates may be impaired if they are deficient in this area. It was important to find out if this is likely.

• The relevance of the Course to employer needs can be tested by surveying student attitudes on that question. ie whether new skills were used.
If students were keen to develop careers and the Course is seen favourably by employers, it would be expected that significant numbers of people would change employment either during or immediately after completing the Course. This would also be an indicator of meeting employer needs.

4.2.4 Course content

There are significant differences between the aims of different health and safety courses, some of which provide greater emphasis on basic knowledge and specific hazards (Findlay, 1987; Pomeroy and Hanson, 1987; and Newman, 1987).

There is a clear distinction between the approach by Hale (1984) to safety training to increase the capacity of a person to act appropriately in the face of danger and Wigglesworth’s (1978) description of safety education.

Wigglesworth, (1978) stated that the objectives of safety education are to put the specialist into a position of sufficient knowledge of a broad field of technology; to be able to specify solutions to a wide variety of problems. He emphasised the need for both basic knowledge of the subject area and the need for skills in identifying the precise nature of specialised problems. Post graduate courses, in particular, placed a greater emphasis on ideas and concepts, rather than on specifics.

This approach was reflected in the Ballarat Course's aims of providing multi disciplinary frameworks from which students could gain the knowledge and skills to enable measurement of this aspect (Appendix A). Students were to be able to argue, justify and implement solutions based on designing out health and safety problems. Stevenson, (1987) however, has found that the greatest problem in teaching safety science, because of its multi disciplinary character with a wide range of starting points of students, is the level at which to pitch each subject.
The life of the Ballarat course spans a period of intense change in health and safety management in Australia. There have been changes in understanding, awareness and attitude towards health and safety in the workplace (Worksafe, 1993). This has been reflected by changes in legislation, emphasis by unions, enforcement agencies and employers. Academic developments and research have contributed to the process of understanding and education. (Worksafe, 1993)

The issue of the relevance of tertiary training to subsequent professional employment is extremely important. Speaking in a management context, Drucker, (1988 p.76) says - The result of a school is a student who has learned something and puts it to use ten years later. One long term study of professional people in Australia (Western and Williams, 1983) found the relevance of their first degree and later formal studies to be of low relevance to their present work. This emphasises the need for acquiring adaptive and enduring skills during the Graduate Diploma of OHM Course. If these skills are adaptive, enduring, and widely based, then we could expect them to be evident in successful job experiences, when tested against changing workplace management arrangements. eg. current changes in award restructuring, total quality control techniques, OHS implications of changing work practices as discussed by Myers, (1989.)

There is an increasing emphasis in the workplace on acquisition of skills. The OHM Course teaches two kinds of skill: the application of technical knowledge learned eg occupational hygiene, ergonomics; and management skills: (ideas, concepts) eg energy damage model, risk philosophy. (see Appendix A)

- During the course, students find whether what was provided, in the way of technical and managerial skills, matches their expectations.

- When students get into the workplace, they will form an attitude about whether the course provided sufficient of each kind of skill. The degree of satisfaction with skill acquired should be measured
• The adaptiveness of the course objectives can be tested by finding whether the skills learned are still useful in a changing environment.

• The relevance of the course to employer needs can be tested by surveying student attitudes on that question ie whether new skills were used.

• The effectiveness of the learning experience can be tested by finding those skills and ideas which have been retained and presumably have had the most impact and significance for students.

4.2.5 Change and the Future

The following considerations were taken into account in assessing the results of the Questionnaire and in reaching conclusions.

(a) Study Objectives relating to change:

(i) To decide whether the Course has responded to change, it is necessary to take into account: the nature of change itself; social and technical changes affecting OHS which have taken place since the Course commenced; and changes to the Course.

(ii) To determine what the Course should be offering now, not only current student and workplace needs must be met. Wigglesworth, (1987) sees curriculum development in terms of graduates reaching the zenith of their careers over fifteen years later. To ensure the Course remains relevant to the future needs of graduates involves anticipating future social and technical changes and their probable implications for OHS.

(b) The nature of change

There are various interrelated ways in which change takes place. For example the introduction of the Victorian Occupational Health and Safety Act (1995) caused almost instantaneous change in the ways in which some organisations acted (Personal observation). Others reacted slowly, or not at all. Dawson (1995), sees changes in quality management for example, as a series of small increments. A broader view, spanning greater periods of time, is the paradigm shift eg the shift from the "safe person" approach espoused by Heinrich (1931) to the contemporary "safe place" approach to OHS. The
way in which these views of change are related is explained by Jencks, (1971) after Veerhulst, (1967) using the notion of accelerating change between two levels of equilibrium. Large changes were seen as a large S-shaped envelope, comprising a series of small exponential s-curves, representing small steps of change.

(c) Anticipating the future.

Popper (1957), cited in Jencks (1971), considered the the future to be unknowable, partly because predicting the future affects the future.

Attempts to know the future have been made: by extrapolating from the past, or by identifying current trends and forces acting for change.

By identifying the future kinds of social and technical change, their effects on OHS may be inferred. These effects may be on: the organisations, their sizes and structures, management systems, kinds of workplace hazards to be faced; and the sizes and kinds of industries which may exist. These will have a direct bearing on the technical and management skills required by OHS professionals and the kind of training they now require.

For example, Mcrae, (1994) suggests a number of global forces for change: demographic, resources and environments, trade and finance, technology and government and society. He believes that up to the year 2020 we will see only a few new technologies emerge. What will be increased is the ways of using existing technology. Eckersley (1994) however, feels that there is a tendency to underestimate the impact of science and technology, because it is more difficult to foresee than other changes. Eckersley, (1994), focussing on Australia, sees the end of man as a machine as the basis for manufacturing, which will become more flexible and holistic
5 QUESTIONNAIRE DEVELOPMENT

The nature and characteristics of the study imposed some limitations and requirements to consider. These acted to help determine the methodology adopted.

5.1 Survey Design Issues

5.1.1 Formulation of Survey Design

As the consumers, of the Course, graduates were the key group whose perceptions of the Course formed the basis of the evaluation.

A questionnaire was selected as the means for gathering data for several reasons. It allowed for a controlled structure, which would yield the kind of data required for analysis; the types of content sought were known in advance (Section 4, above); it allowed for a mix of yes/no, scaled and free responses to provide a mixture of kinds of factual and attitudinal responses; and it enabled careful planning and pre testing of questions.

The questionnaire was to be mailed out and self administered. This was felt to be appropriate, given that generally the group had high levels of written comprehension and literacy. Overall, given the large numbers involved, (N > 200 no.), and their geographic spread, mailing was the only practicable and economically efficient way of administering the questionnaire. It would also have the advantage of being free of interviewer bias.

5.1.2 Sampling Issues

Sample size - The biggest concern was that there would be insufficient responses to allow proper statistical analysis, particularly since there would be no specific follow up of non responders (A general follow up request to all population members would have been too costly) There was also some uncertainty concerning the accuracy of the list of potential respondents used (S. Cowley, personal communication, 1994).
Sample bias - Sample bias was an important concern. The sample was biased by its restriction to those who completed the Course, who also received the questionnaire and who responded. While this sample bias restricts the usefulness of some of the study outcomes, it does not affect the prime aim - to test the experiences of those graduates who did respond. (Some studies have shown late responders tend to mirror non responders (Oppenheim, 1966). If non responders had been followed up, these later responses could have been analysed to give an indication of whether responders and non responders differed.)

Sample homogeneity - The study was cross sectional with the sample spread unevenly between the Intakes comprising the ten year period (larger numbers in later intakes), causing a lack of homogeneity of the population to be sampled. There was also concern that the response rate would be skewed towards later years.

5.1.3 Questionnaire Design Process

The questionnaire design process followed a model proposed by Kinnear and Taylor, (1983 .p.399)

An important aspect of the questionnaire design process followed the advice of Oppenheim, (1966) who recommended approaching the natural sequence of operations in the reverse order - decide the conclusions we want to draw; state the necessary statistics and cross tabulations needed to draw the conclusions; and, from the tabulations, infer the kinds of questions.

Each person received the same questions. A mix of open and easily coded and analysable closed questions sought categorical and scaled data. Both open and closed free response questions were included. Both factual and attitudinal responses were sought.
As recommended by Kress (1988), the questions were in a logical order for the respondents (demographic factual information first followed by Course experiences, subsequent employment experiences, then free open responses; and easy questions came first with more difficult and more personal questions in the middle).

5.2 Development of the Questionnaire

5.2.1 Question Writing

In any survey requiring attitudinal responses, there must be a concern about the objectivity of the responders. Not only are the responses purely in terms of subjective likes and dislikes, but responses are also influenced by what responders think is the aim of the survey. eg responses may be modified to please the tester. Anastasi (1976) suggests attitudes can be validated by considering whether observed outcomes are consistent with the expressed attitudes.

The content and format was based on factors revealed in the literature review and anecdotal information gained through prior experience. (see Section 4 - Issues and Topics for Investigation)

A range of kinds of questions were asked in relation to the key variables or topics of the study:
- General demographic data relating to study subjects eg age, sex, locality
- Time based data to enable trends to be established
- Objective data regarding individuals experiences with Course aspects and outcomes
- Subjective questions about the Course scaled to test subjects attitudes
- Requests for comments about specific questions and the Course overall
- Several questions requesting information about broad aspects of Course content to allow analysis of learnings

Each question was designed to elicit specific information relevant to the issues developed and their related topics in a form capable of pre-determined analysis either alone or related to another question.

5.2.2 Rationale for each question

See Appendix E, for rationale for each Question and Appendix C for a copy of the Questionnaire and covering letter

5.2.3 Tables and Statistics Required

The proposed a priori analysis of data from responses to each question and combinations of questions in the form of possible tables and cross tabulations required was then detailed as shown in Appendix F
5.2.4 Pilot Study

A draft Questionnaire, with instructions for completion and requests for additional comments, was piloted on a small group including some graduates, VIOSH staff members, OHS professionals and non OHS professionals. The responses received confirmed aspects of the Questionnaire such as time for completion. It also allowed improvements to be made in layout and content with removal of ambiguities and types of response sought. A final draft was validated on small group.

5.3 Ethical Issues

After final revision, the completed Questionnaire, together with the instructions for completion, and a covering letter from the Acting Director of VIOSH, was submitted to the University of Ballarat Ethics Committee for approval.

In the covering letter, it was explained to graduates that the source of names and addresses was from the VIOSH records, and they were reassured of confidentiality of information and anonymity. (Subsequently, a number of respondents chose to identify themselves). To ensure confidentiality, no names and addresses of the target population were made available to the researcher. The questionnaires were sent out, received and owned by the University. This ensured that any analysis or discussion of individual questionnaires, particularly free responses, did not identify any respondent.
5.4 Administering the Questionnaire

After ethics approval, the Questionnaire was mailed by the Acting Director of VIOSH, with reply paid addressed envelope, and a covering letter - see Appendix C. On advice from an experienced market researcher (Jamie Campbell and Associates), a response time of two weeks was prescribed. There was no follow up of non respondents as these could not be identified due to the anonymity of the responders.

When all responses were received, the questionnaires were given to the researcher. No names or addresses of respondents or of the target sample were given to the researcher.

5.5 Recording and Coding of Data

All questionnaires were randomised and numbered. Checklist responses were then coded onto a Microsoft Excel spreadsheet file, checked, and Summary tables produced (See Appendix G). All comments and free responses were transcribed, to a word processing file on a Question by Question basis. (See Appendix I) This preserved as much detail as possible. Certain statements, thought to be irrelevant or capable of allowing identification of individuals were omitted.
6.1 Population Sample responses

A total of 156 responses were received, representing 45% of the enrolments during the period. The response rate for questionnaires sent out was 65.3%. This response rate was considered to be good, since advice from an experienced market researcher (personal communication Jamie Campbell & Associates, 1993), was that a reasonable expectation for this kind of study was a response rate of about 60%, and that the mailing list for former graduates was of unknown reliability (personal Communication, Steve Cowley, 1994).

For the analysis of responses, combining descriptive treatments with the results of statistical tests, and a review of the non coded (or non checklist) responses, see Section 7.2. All statistical tests are set out in Appendix H - Summary of Statistical Tests. A summary of non checklist responses is set out in Appendix I - Summary of Free Responses to Questionnaire.

Several questions provided relevant personal and demographic data, some of which was not of direct use in the analysis, but which had potential to provide further insights, with more manipulation. The way in which the basic responses were recorded, allows any item of data to be related to any other item, on an individual or group basis. Some data, although not directly related to the study outcomes, has been analysed, eg. in an attempt to establish a student profile. It was included for the sake of completeness, and to provide a reference point for use with later analysis.
6.2 Raw Data

6.2.1 Coded Responses

Responses to Questions 1-16 and 19-23 were coded onto a spreadsheet (Microsoft Excel Version 3.0) See appendix J. Summary tabulations showing category totals for each question are tabulated in Appendix G

6.2.2 Free responses

All free responses have been reproduced under their Question numbers in Appendix I

Responses to Questions 15 and 16 required categorisation before providing useful quantitative information. Tables 7.20 and 7.21 in Section 7 show the responses under their post hoc categories.

Other free responses have been treated selectively under their respective Question numbers in Section 7, to provide qualitative information

6.3 Response Analysis

The responses to each question were analysed in Section 7 and interpreted in Section 8, Discussion. This analysis is presented and interpreted in Section 8. The cross tabulations proposed, (Appendix F) were
not all done. This was because analysis of the results obtained from intra question analyses in many cases provided unequivocal data sufficient for the purposes of the study, at the same time creating response numbers in categories of interest too small to allow statistical analysis. Selective cross tabulations were analysed mainly to relate students' expressed attitudes with outcomes relating to their needs. This provided a check on the validity of questions about attitudes and assisted decisions regarding the Aim and Objectives. The statistical data to the cross tabulations is presented in Appendix H.
7 ANALYSIS OF DATA

7.1 Statistical analysis

Considerable use was made of descriptive statistics

Calculation of confidence levels was done using chi squared tests of several kinds (Harvey and Snow, 1988).

Responses to Questions 14, 15 and 18 gave count data some of which was tested for goodness of fit compared to an expected probability of \( p = 0.5 \) (for the responses occurring randomly) to establish confidence levels.

In Question 11 a comparison was made between two sets of data, using a chi squared test for equality of more than two proportions.

Testing for changes over time was done by splitting the sample into two groups, before and after a selected time, representing earlier and later graduates. The periods adopted were 1979-1985 and 1986-1992. Selected cross tabulations were carried out to investigate characteristics of particular sub groups in the sample. These used a chi squared equality of two proportions.
7.2 Free response analyses

The answers to Questions 15 and 16 were free responses. These answers were analysed using the method proposed by Oppenheim, (1966). A random sample of thirty responses was taken, and each single new idea and new skill was listed, as it occurred thus creating response categories. Successive similar responses were counted, building up a table. Adjustments to category descriptions were carried out to ensure adequate responses in selected categories to provide useful data.

It was found that respondents did not discriminate clearly between "management ideas" and "technical skills". It was necessary to transfer some responses between these groups, to place each in its appropriate category. A minimum of 20 responses was required to establish each category and, where possible, smaller numbers were collapsed into groups or added to other similar categories. Some categories were similar, and could be further collapsed into larger sets, for further analysis, if required.

The maximum number of categories was kept to ten, to create a practicable list for analysis. No statistical analysis was possible, because the sample had been distorted by: allowing three responses per subject; receiving more or less than that number, and; the need to transfer some responses from one Question to the other.

Having established the categories for analysis, the rest of the responses were categorised post hoc. The Tables are set out in Section 7.2 Questions 15 and 16.
7.3 Analysis of Responses to Questions

The analyses which combined descriptive treatments, together with the results of statistical tests, and review of the non coded or free responses, are set out in Question order. Analyses of cross tabulations are included under the Question number to which they most relate. All statistical tests are set out in Appendix H - Summary of Statistical Tests. A summary of checklist data is set out in Appendix G - Summary of checklist responses to questionnaire. A summary of the non checklist responses is set out in Appendix I - Summary of free responses to questionnaire.

Question 1: In which year did you commence the Course? and;

In which year did you complete the Course?

Table 7.1 below shows the sample was fairly evenly distributed over time with each year representing at least 30% of that year's enrolments.

In 100 cases, or 64% of respondents, the Course was completed in the minimum time of two years.

Question 2: Are you Female/Male?

Table 7.1 shows females comprised 19.2% of the sample. Inspection of the table shows only 8.3% female respondents prior to 1987, compared to 29.1% post 1987.
<table>
<thead>
<tr>
<th>Year</th>
<th>Females</th>
<th>% Females</th>
<th>Males</th>
<th>Total</th>
<th>Enrolled</th>
<th>Graduated</th>
</tr>
</thead>
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<td>0</td>
<td>9</td>
<td>9</td>
<td>20</td>
<td>16</td>
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<td>11.1</td>
<td>8</td>
<td>9</td>
<td>16</td>
<td>12</td>
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<tr>
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<td>25.0</td>
<td>4</td>
<td>5</td>
<td>21</td>
<td>15</td>
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<td>9.0</td>
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<td>11</td>
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<td>0</td>
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<td>6</td>
<td>20</td>
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<tr>
<td>1985</td>
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<td>8.3</td>
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<td>10</td>
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<td>18.8</td>
<td>13</td>
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<td>1990</td>
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<td>1991</td>
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<td>25.0</td>
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</tr>
<tr>
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<td>346</td>
<td>250</td>
</tr>
</tbody>
</table>

**Question 3: Age on commencing Course**

The median group was 35 - 45 (53.1 %) with a further 37.7 % falling in the 25 - 35 age bracket. (see Table 7.2)

<table>
<thead>
<tr>
<th>Age Group (years)</th>
<th>&lt;25</th>
<th>25 -35</th>
<th>35-45</th>
<th>45-55</th>
<th>&gt;5</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of respondents in group</td>
<td>6</td>
<td>49</td>
<td>69</td>
<td>26</td>
<td>5</td>
<td>155</td>
</tr>
<tr>
<td>Percentage %</td>
<td>3.9</td>
<td>31.6</td>
<td>44.5</td>
<td>16.8</td>
<td>3.2</td>
<td>100.0</td>
</tr>
</tbody>
</table>
A point of interest is whether there was a change in the age distribution of students during the period.

Inspection of the split sample, Table 7.3 (1979-1986 Vs 1987-1992), indicated an increase in the <25 year old and 25-35 year old age groups.

<table>
<thead>
<tr>
<th>Years</th>
<th>&lt;25</th>
<th>25-35</th>
<th>35-45</th>
<th>45-55</th>
<th>&gt;55</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979-1986</td>
<td>1</td>
<td>18</td>
<td>34</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>1987-1992</td>
<td>5</td>
<td>31</td>
<td>35</td>
<td>13</td>
<td>1</td>
</tr>
</tbody>
</table>

Collapsing the table to compare the up to 35 years old group with the over 35 years old group, a chi squared test showed a significant increase at the 5% level. (See Table 7.4 below)

There has been an increase in the proportion of younger students. If this difference reflects a trend the current proportion will be even higher.

<table>
<thead>
<tr>
<th>Years</th>
<th>Up to 35</th>
<th>over 35</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979-1986</td>
<td>19</td>
<td>51</td>
<td>70</td>
</tr>
<tr>
<td>1987-1992</td>
<td>36</td>
<td>49</td>
<td>85</td>
</tr>
</tbody>
</table>
Question 4: How many years OHS experience people had prior to commencing the Course?

As shown in Table 7.5, below, 85.7% of respondents had prior OHS experience. Inspection of the split sample (1979-19861 vs. 1987-1992) indicated a possible increase at the less experienced end, but a chi squared test showed this not to be statistically significant at the 10% confidence level. Collapsing the table to compare those with more and less than five years experience (see Appendix H), showed the increase in less experienced students to be significant at the 10% level.

Table 7.5 Years of Paid Experience in OHS on Commencing Course

<table>
<thead>
<tr>
<th>Years paid OHS experience</th>
<th>0</th>
<th>0-5</th>
<th>5-10</th>
<th>10-15</th>
<th>&gt;15</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Respondents</td>
<td>23</td>
<td>62</td>
<td>41</td>
<td>17</td>
<td>11</td>
<td>154</td>
</tr>
<tr>
<td>Percentage %</td>
<td>14.9</td>
<td>40.3</td>
<td>26.6</td>
<td>11.0</td>
<td>7.2</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 7.6 Comparison of distribution of prior experience between earlier and later students

<table>
<thead>
<tr>
<th></th>
<th>0 years</th>
<th>0-5 years</th>
<th>5-10 years</th>
<th>10-15 years</th>
<th>&gt;15 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979-1986</td>
<td>9</td>
<td>24</td>
<td>21</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>1987-1992</td>
<td>14</td>
<td>38</td>
<td>20</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

Question 5: Highest post secondary qualification prior to the course.

Table 7.5 shows a very wide spread of educational backgrounds.
Table 7.7  Highest Prior Post Secondary Qualification

<table>
<thead>
<tr>
<th>Highest post sec qualification</th>
<th>None</th>
<th>Trade/TAFE</th>
<th>Assoc. Dip.</th>
<th>Degree</th>
<th>Post grad</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of sample respondents</td>
<td>11</td>
<td>47</td>
<td>24</td>
<td>42</td>
<td>22</td>
<td>146</td>
</tr>
<tr>
<td>Percentage %</td>
<td>7.5</td>
<td>32.2</td>
<td>16.4</td>
<td>28.8</td>
<td>15.1</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 7.8  Comparison of previous education levels of earlier and later students

<table>
<thead>
<tr>
<th>Previous highest post secondary qualification</th>
<th>None</th>
<th>Trade/Tafe</th>
<th>Assoc. Dip.</th>
<th>Post Grad</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979-1986</td>
<td>4</td>
<td>20</td>
<td>14</td>
<td>11</td>
<td>12</td>
<td>61</td>
</tr>
<tr>
<td>1987-1992</td>
<td>7</td>
<td>21</td>
<td>13</td>
<td>28</td>
<td>10</td>
<td>79</td>
</tr>
</tbody>
</table>

Inspection of the time split sample in Table 7.8 indicates a possible shift to higher qualifications. Chi square analysis confirmed no difference at the 10 % level.

Question 6  Were students returning to study after a post secondary break, and if so, of how long?

Table 7.9 shows a predominance of people (85.4 %) returning to study after a break. Of the sample 37.6 % returned to study less than 5 years after post secondary study. Chi squared analysis of the time split sample collapsed to compare those with more or less than a five year break showed no difference at the 10 % level. (See Appendix H)
Table 7.9  Students returning to Study after a break

<table>
<thead>
<tr>
<th>Return after post sec break</th>
<th>No years</th>
<th>&lt; 5</th>
<th>5-10</th>
<th>10-15</th>
<th>15+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of sample respondents</td>
<td>22</td>
<td>57</td>
<td>25</td>
<td>22</td>
<td>25</td>
<td>151</td>
</tr>
<tr>
<td>Percentage %</td>
<td>14.6</td>
<td>37.6</td>
<td>16.6</td>
<td>14.6</td>
<td>16.6</td>
<td>100</td>
</tr>
</tbody>
</table>

**Question 7:** Where were students living at time of commencement of the Course?

The most notable feature is the large proportion of students from interstate (54.9%). The time split sample proportions (See Table 7.8) indicate a large increase in the proportion from within Victoria (from 39% in the period to 1979 up to 50% in the period to 1992), but this trend is not supported by a statistical test, at the 10% confidence level.

Table 7.10  Home Location at Commencement of Course

<table>
<thead>
<tr>
<th></th>
<th>NSW</th>
<th>NT</th>
<th>Qld</th>
<th>SA</th>
<th>Tas</th>
<th>Vic</th>
<th>WA</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage %</td>
<td>19</td>
<td>3</td>
<td>19</td>
<td>27</td>
<td>5</td>
<td>69</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Percentage %</td>
<td>12.4</td>
<td>2.0</td>
<td>12.5</td>
<td>17.7</td>
<td>3</td>
<td>45.2</td>
<td>2.6</td>
<td>4.6</td>
</tr>
</tbody>
</table>
Table 7.11  Victorian vs Non Victorian Enrolments over the Periods 1979-1986 and 1987-1991

<table>
<thead>
<tr>
<th>Period</th>
<th>Victorian</th>
<th></th>
<th>Non Victorian</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
<td>Number</td>
</tr>
<tr>
<td>1979-1986</td>
<td>27</td>
<td>39.1</td>
<td>42</td>
<td>50.0</td>
<td>69</td>
</tr>
<tr>
<td>1987-1991</td>
<td>42</td>
<td>60.9</td>
<td>42</td>
<td>50.0</td>
<td>84</td>
</tr>
<tr>
<td>Total</td>
<td>69</td>
<td>100.0</td>
<td>84</td>
<td>100.0</td>
<td>153</td>
</tr>
</tbody>
</table>

Within States most students came from Capital cities.

Table 7.12  Location within home State

<table>
<thead>
<tr>
<th></th>
<th>Capital</th>
<th>Regional</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>96</td>
<td>39</td>
<td>19</td>
</tr>
<tr>
<td>%</td>
<td>62.4 %</td>
<td>25.3 %</td>
<td>12.3 %</td>
</tr>
</tbody>
</table>

Question 8: Was there another OHS course available to you at the time?; and,
Question 9: Are alternative courses available now?

Table 7.9 shows a big increase in alternatives to the Ballarat Course. 60% had an alternative available at the time of enrolment in the OHM Course, but of the same sample, 95% have an alternative now.

Table 7.13 Availability of Alternative OHS Courses

<table>
<thead>
<tr>
<th>Then (At time of commencing OHM Course)</th>
<th>Now (1994)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>93</td>
<td>62</td>
</tr>
<tr>
<td>60.0%</td>
<td>40.0%</td>
</tr>
</tbody>
</table>

Question 10: Level of employer support received during course

A very high proportion of the sample respondents received financial assistance: 134 respondents (86%) received leave with pay; 56%, accommodation and meals; 53%, fees and charges; and 50% received travel expenses. Use of employers facilities was available to 63%; and time to complete assignments was allowed to 17% of the sample.

Of the above, cost of meals and accommodation, and travel costs (particularly for some interstate students) differentiate this type of course from part time or distance learning courses.
Many (42 No.) comments were made to in relation to this Question (See Appendix I), emphasising its importance to respondents. Students were appreciative of employer support, financial and otherwise. Five comments indicated that financial support had been crucial. Typical comments included:

S5 The bastards didn’t want to pay anything. I had to take rec leave to attend…
S96 Couldn’t have done course without employer support
S113 …financial strain immense…
S114 Fortunate to receive comprehensive employer support.
S142 …support from employer enabled me to finish in the two year period…

Table 7.14  Employer Assistance received by Respondents

<table>
<thead>
<tr>
<th>Type of assistance</th>
<th>Number receiving assistance</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leave with pay</td>
<td>134</td>
<td>85.9</td>
</tr>
<tr>
<td>Use of employer facilities</td>
<td>98</td>
<td>62.8</td>
</tr>
<tr>
<td>Accommodation and meals</td>
<td>88</td>
<td>56.4</td>
</tr>
<tr>
<td>Fees and charges</td>
<td>82</td>
<td>52.6</td>
</tr>
<tr>
<td>Travel expenses</td>
<td>78</td>
<td>50.0</td>
</tr>
<tr>
<td>Assignment time</td>
<td>27</td>
<td>17.3</td>
</tr>
<tr>
<td>No assistance</td>
<td>7</td>
<td>4.5</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>2.6</td>
</tr>
<tr>
<td>Not applicable-Self employed</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Not applicable - Unemployed</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: Respondents could give more than one response.

Question 11: Organisation size:

- (a) at commencement of course; and,
- (b) now
Table 7.11 shows a move to smaller organisations. Chi squared analysis showed this shift to be significant at the 1% confidence level.

<table>
<thead>
<tr>
<th>Table 7.15</th>
<th>Size of Employer Organisation at commencement of Course; and, currently (1994)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At start of Course</td>
<td>&lt; 50</td>
</tr>
<tr>
<td>Now (1994)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>28</td>
</tr>
</tbody>
</table>

Question 12: In which industry were you employed?

(a) at the commencement of the course; and,

(b) now

Responses indicated little change in the industry in which graduates were employed. The most notable change was the increase from 36 No. to 56 No. in the "Other" category. The free responses indicate this to be related to increases in retirement, unemployment and consultants. Small numbers in other groups do not make changes amenable to statistical analysis. The main industries where graduates were currently employed are shown in Table 7.16

<table>
<thead>
<tr>
<th>Table 7.16</th>
<th>Main employment industries</th>
</tr>
</thead>
</table>

48
<table>
<thead>
<tr>
<th>Industry</th>
<th>At commencement</th>
<th>Now (1994)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Agric, Forestry, Fishing</td>
<td>4</td>
<td>2.6</td>
</tr>
<tr>
<td>Mining</td>
<td>12</td>
<td>7.8</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>36</td>
<td>23.5</td>
</tr>
<tr>
<td>Elec, Gas &amp; Water</td>
<td>13</td>
<td>8.5</td>
</tr>
<tr>
<td>Construction</td>
<td>4</td>
<td>2.6</td>
</tr>
<tr>
<td>Trade</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Transport &amp; Storage</td>
<td>9</td>
<td>5.9</td>
</tr>
<tr>
<td>Fin &amp; Bus Services</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Public Administration</td>
<td>20</td>
<td>13.1</td>
</tr>
<tr>
<td>Community Service. (inc Health)</td>
<td>17</td>
<td>11.1</td>
</tr>
<tr>
<td>Recreation</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>36</td>
<td>23.6</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>100</td>
</tr>
</tbody>
</table>

**Question 13: Reasons for starting the Course**

Table 7.18 ranks the reasons. The highest scoring item (81%) of respondents relates to skills/knowledge acquisition. Career goals ranked second and third. Appendix J showed 111 respondents (71%) of respondents identified one or both of these items. Of items specifically related to the
Ballarat Course, the most important was that relating to the Course reputation - 98 No., or 63%, of the sample gave this as a reason for starting the Course. The block release study format scored highly, with 69 No., or 44%, nominating this as a reason. The geographic location was not a large factor, (8%) and, possibly, mainly related to satisfying the needs of those living near Ballarat.

Table 7.18  Reasons for Starting the Course

<table>
<thead>
<tr>
<th>Reason</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need for more skills/knowledge of OHS</td>
<td>127</td>
<td>81.4</td>
</tr>
<tr>
<td>Seeking a new career</td>
<td>115</td>
<td>73.7</td>
</tr>
<tr>
<td>Career advancement</td>
<td>104</td>
<td>66.7</td>
</tr>
<tr>
<td>Reputation of the Ballarat Course</td>
<td>98</td>
<td>62.8</td>
</tr>
<tr>
<td>Desire to increase job satisfaction</td>
<td>73</td>
<td>46.8</td>
</tr>
<tr>
<td>Block release study format</td>
<td>69</td>
<td>44.2</td>
</tr>
<tr>
<td>To fulfil a personal goal</td>
<td>69</td>
<td>44.2</td>
</tr>
<tr>
<td>To gain a tertiary qualification</td>
<td>59</td>
<td>37.8</td>
</tr>
<tr>
<td>Only OHS course available</td>
<td>23</td>
<td>14.7</td>
</tr>
<tr>
<td>Employer requirement</td>
<td>22</td>
<td>14.1</td>
</tr>
<tr>
<td>Geographic location of Ballarat</td>
<td>13</td>
<td>8.3</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Question 14: Did your Course provide adequate:

(a) Technical Knowledge; and,

(b) Management ideas?

The responses showed 87% of the sample believed the Course provided them with adequate technical knowledge and management ideas. Chi
squared analysis showed this result not a random event at the 0.5% confidence level.

Split sample analysis showed no difference (at 5% level) between earlier and later graduates.

Table 7.19  Adequacy of Technical Knowledge and Management Ideas provided by the Course

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical knowledge</td>
<td>134 (87.0 %)</td>
<td>20 (13.0 %)</td>
<td>156</td>
</tr>
<tr>
<td>Management ideas</td>
<td>135 (87.7 %)</td>
<td>19 (12.3 %)</td>
<td>154</td>
</tr>
</tbody>
</table>

Questions 15: Which were the three technical skills from the Course that you found most useful in your job; and,

Question 16: Which were the three management ideas from the Course that you found most useful in your job?

All responses can be found in Appendix I

Tables 7.14 and 7.15 show responses ranked in their post hoc categories. See Section 7.1.3 for a description of the method used to derive the Tables. These categories were effectively self selected by respondents and interpreted using the method described in Section 7.2. Each respondent was invited to make three responses.
The division between Question 15 responses and Question 16 responses is not always clear as there are elements of ideas in the skills and vice versa. Care with interpretation is necessary eg does less responses for "ergonomic" than for "hygiene" represent how useful students found it or was more attention paid to one or the other in the Course content?

Unallocated to categories in the management ideas list were psychology, sociology, the role of the OHS practitioner and personal development, and general comments like "all". While some responses were received in these topics, they were eliminated by the method of analysis adopted, due to either lack of numbers or irrelevance.

Table 7.20  Technical Skills from the Course which were found to be the most useful

<table>
<thead>
<tr>
<th>Technical skill</th>
<th>No of responses (1-3 per respondent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hygiene</td>
<td>95</td>
</tr>
<tr>
<td>Risk modelling and analysis</td>
<td>60</td>
</tr>
<tr>
<td>Presentation skills</td>
<td>55</td>
</tr>
<tr>
<td>Statistics</td>
<td>50</td>
</tr>
<tr>
<td>Legal</td>
<td>38</td>
</tr>
<tr>
<td>Risk engineering</td>
<td>25</td>
</tr>
<tr>
<td>Human factors (ergonomics)</td>
<td>24</td>
</tr>
</tbody>
</table>
7.21 Management Ideas from the Course which respondents found to be most useful

<table>
<thead>
<tr>
<th>Management idea</th>
<th>No Of Respondents (1-3 per respondent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OHS management systems</td>
<td>77</td>
</tr>
<tr>
<td>Accident causation</td>
<td>43</td>
</tr>
<tr>
<td>Hazard management</td>
<td>35</td>
</tr>
<tr>
<td>Hierarchy of controls</td>
<td>34</td>
</tr>
<tr>
<td>Sharing and networking</td>
<td>19</td>
</tr>
<tr>
<td>Consultation</td>
<td>18</td>
</tr>
<tr>
<td>Quality management</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>232</td>
</tr>
</tbody>
</table>

The responses showed a strong consensus over a wide range of topics.

"Hygiene skills" and "management systems" ideas stood out as being of the most use in their respective sections.

Table 7.17 ranks the combined Technical Skills and Management Ideas identified. It shows the relative emphasis placed on each category by
respondents. The technical skills and management ideas identified by the graduates as most useful mostly represent higher level knowledge and skills appropriate to a post graduate OHS course. They are also required to function at a senior level to achieve the influence within organisations and necessary to achieve changes. In this they are consistent with the fundamental goals of the Course and have met the needs of graduates.

Table 7.22 Rating of Technical Skills and Management Ideas by Respondents

<table>
<thead>
<tr>
<th>Technical skill or management idea</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hygiene</td>
<td>95</td>
</tr>
<tr>
<td>OHS management systems</td>
<td>77</td>
</tr>
<tr>
<td>Risk modelling and analysis</td>
<td>60</td>
</tr>
<tr>
<td>Presentation skills</td>
<td>55</td>
</tr>
<tr>
<td>Statistics</td>
<td>50</td>
</tr>
<tr>
<td>Accident causation</td>
<td>43</td>
</tr>
<tr>
<td>Legal</td>
<td>38</td>
</tr>
<tr>
<td>Hazard management</td>
<td>35</td>
</tr>
<tr>
<td>Hierarchy of controls</td>
<td>34</td>
</tr>
<tr>
<td>Risk engineering</td>
<td>25</td>
</tr>
<tr>
<td>Human factors(ergonomics)</td>
<td>24</td>
</tr>
<tr>
<td>Auditing</td>
<td>19</td>
</tr>
<tr>
<td>Sharing and networking</td>
<td>19</td>
</tr>
<tr>
<td>Consultation</td>
<td>18</td>
</tr>
<tr>
<td>Accident investigation</td>
<td>16</td>
</tr>
</tbody>
</table>
Question 17: Employer use of the new skills and ideas from the course.

While only 42.1% of employers used new graduates skills "frequently", 76.3% used the new skills to at least a "moderate amount"

It is clear from the 24 comments made to this Question, that use of skills is often often depends on the employers attitude to OHS and level of understanding of graduates potential to contribute. In this regard the part of the Courses fundamental goal which emphasises the ability to coherently argue and justify is particularly appropriate.

Typical responses included:

employer primarily interested only in protecting ..from litigation (S5)

No feedback from employer. Its really up to me...(S46)

...many ideas were way beyond the level of management at the time...(S57)

More a case of me passing on skills learned rather than employer using them (S105)

Employers were not aware of the capabilities...S(81)
Seven respondents indicated management climate for OHS had since improved.

Table 7.23  Employer Use of Graduates New Skills

<table>
<thead>
<tr>
<th>Employer use of new skills</th>
<th>None</th>
<th>Negligible</th>
<th>Moderate</th>
<th>Frequent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11</td>
<td>25</td>
<td>52</td>
<td>64</td>
<td>152</td>
</tr>
<tr>
<td>7.2 %</td>
<td>16.5 %</td>
<td>34.2 %</td>
<td>42.1 %</td>
<td>100 %</td>
<td></td>
</tr>
</tbody>
</table>

Question 18: Attitudes to Professional skills development overall
Course quality and theoretical content.

Two of these items related to general aspects of the individual. 89.6% of respondents agreed that the overall quality level was "satisfactory". 18.3% found the Course "overly theoretical and abstract". Of these 28 respondents, only 4 felt "strongly". (See Table 7.24)

Table 7.24  Professional Skills Development and Overall Quality of the Course

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Developed problem solving skills</td>
<td>31</td>
<td>86</td>
<td>18</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>(b) Sharpened analytical skills</td>
<td>42</td>
<td>92</td>
<td>10</td>
<td>9</td>
<td>1</td>
</tr>
</tbody>
</table>

56
(c) Developed team abilities  
(d) Increased confidence in unfamiliar problems  
(e) Overly theoretical and abstract  
(f) Helped in planning own work  
(g) Quality overall satisfactory  

<table>
<thead>
<tr>
<th></th>
<th>16</th>
<th>72</th>
<th>27</th>
<th>33</th>
<th>4</th>
<th>152</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40</td>
<td>85</td>
<td>18</td>
<td>8</td>
<td>2</td>
<td>153</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>24</td>
<td>11</td>
<td>92</td>
<td>22</td>
<td>153</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>76</td>
<td>27</td>
<td>34</td>
<td>5</td>
<td>154</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>93</td>
<td>7</td>
<td>8</td>
<td>1</td>
<td>154</td>
</tr>
</tbody>
</table>

Four of the items related the development of personal qualities, to the aims of the Course: 76.5% of respondents felt it had developed their "problem solving" skills; 87% believed it had sharpened their "analytical" skills; and 57.9% thought their "team" skills were improved. Increased confidence in "handling unfamiliar problems" was reported by 81.7%, while 57.1% felt it had helped in "planning" their work.

Statistical analysis showed all responses were significant at the 99% level.

When asked to assess whether the overall quality of the Course was satisfactory 138 No. out of 154 No. or 89.6% either "Agreed" or "Strongly Agreed"

When asked whether the Course was Overly theoretical and abstract, 114 out of 153 or 74.5 % either" "Disagreed " or "Strongly Disagreed

The sample was then split, chronologically, into 1979/86 and 1987/92. Statistical tests (chi square) showed there had been no significant change in the responses between the two periods: regarding whether the
Course was overly theoretical and abstract (Part e) and whether the overall quality of the Course was satisfactory (part g). It may be assumed that the attitudes of Graduates have remained the same in relation to the particular Course that they undertook, regardless of any changes in the Course.

**Question 19:** Which of the following factors gave you problems during the Course?

Table 7.25 ranks the responses

"Work commitments", "family commitments" and "off campus workload" were the most wide spread problem areas, each experienced by over 50% of students.

Approximately 20% experienced problems with Course administration.

The on campus workload was seen as a problem for 11%, while only 9.8% mentioned problems with specific subjects.

No significant changes over time were detected, using the chronological split sample approach.

Of the 37 additional comments made, 14 No. referred to statistics; 6 No. referred to work, home and family pressures.
Although Specific Subjects were identified as a problem area by only 15 people, 14 of these identified and 9 made additional comments (mostly negative) about the Statistics unit and its presentation.

Overall the comments indicated few Course related problems. No comments indicated the Course was not meeting their overall needs or its own objectives.

Table 7.25  Factors Giving Problems During the Course

<table>
<thead>
<tr>
<th>Problem factor</th>
<th>No.</th>
<th>having problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off campus workload</td>
<td>84</td>
<td>(53.8 %)</td>
</tr>
<tr>
<td>Work commitments</td>
<td>84</td>
<td>(53.8 %)</td>
</tr>
<tr>
<td>Family commitments</td>
<td>82</td>
<td>(52.6 %)</td>
</tr>
<tr>
<td>Course administration (Course information, assignment processing)</td>
<td>31</td>
<td>(19.9 %)</td>
</tr>
<tr>
<td>Financial commitments</td>
<td>22</td>
<td>(14.1 %)</td>
</tr>
<tr>
<td>On campus workload</td>
<td>17</td>
<td>(10.9 %)</td>
</tr>
<tr>
<td>Specific subjects</td>
<td>15</td>
<td>(9.5 %)</td>
</tr>
<tr>
<td>Course did not meet expectations</td>
<td>11</td>
<td>(7.1 %)</td>
</tr>
<tr>
<td>Ill health</td>
<td>8</td>
<td>(5.1 %)</td>
</tr>
<tr>
<td>Changed priorities /relevance due to employment circumstances</td>
<td>7</td>
<td>(4.5 %)</td>
</tr>
<tr>
<td>Block release mode</td>
<td>2</td>
<td>(1.3 %)</td>
</tr>
<tr>
<td>Inability to attend on campus sessions</td>
<td>2</td>
<td>(1.3 %)</td>
</tr>
</tbody>
</table>

Question 20: How do you value the following aspects of the Course?
This set of questions related to non academic aspects of the Course. Respondents were asked to rate how they valued various aspects on a four part scale. The results are shown in Table 7.26

<table>
<thead>
<tr>
<th>Non academic Course aspect</th>
<th>Very high</th>
<th>High</th>
<th>Low</th>
<th>Very low</th>
<th>Total Resp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using workplace problems in Course assignments</td>
<td>90</td>
<td>57</td>
<td>6</td>
<td>1</td>
<td>154</td>
</tr>
<tr>
<td>Working with others on campus assignments</td>
<td>68</td>
<td>66</td>
<td>18</td>
<td>2</td>
<td>154</td>
</tr>
<tr>
<td>Social aspects of on campus sessions</td>
<td>64</td>
<td>71</td>
<td>16</td>
<td>4</td>
<td>155</td>
</tr>
<tr>
<td>Requirement to attend on campus sessions</td>
<td>75</td>
<td>74</td>
<td>5</td>
<td>0</td>
<td>154</td>
</tr>
<tr>
<td>Development of a professional network</td>
<td>83</td>
<td>49</td>
<td>20</td>
<td>1</td>
<td>153</td>
</tr>
<tr>
<td>Convenience of block release mode</td>
<td>77</td>
<td>68</td>
<td>9</td>
<td>0</td>
<td>154</td>
</tr>
<tr>
<td>Interaction with other OHS practitioners on campus</td>
<td>85</td>
<td>61</td>
<td>9</td>
<td>0</td>
<td>155</td>
</tr>
<tr>
<td>Course administration</td>
<td>13</td>
<td>93</td>
<td>42</td>
<td>3</td>
<td>151</td>
</tr>
<tr>
<td>Interaction with teaching /support staff</td>
<td>42</td>
<td>86</td>
<td>26</td>
<td>0</td>
<td>154</td>
</tr>
<tr>
<td>Campus environment(Accommodation, grounds etc)</td>
<td>25</td>
<td>96</td>
<td>29</td>
<td>3</td>
<td>153</td>
</tr>
</tbody>
</table>

60
Items which were "Very High" valued were:

Using workplace problems in Course assignments
Development of a professional network
Interaction with other OHS practitioners on campus

Inspection of Table 7.26 indicates that, for all items, responses were skewed towards the "High" rather than "Low." valuing of items showing a high approval rating for these aspects of the Course. The non academic needs of students seemed to be well met.

For further analysis "High" and "Very High" responses were added, and expressed as a percentage of total responses, to give a single overall measure of attitude on each item. (See Table 7.27)

The proportion of respondents who scored items either "High" or "Very High" are tabulated below: and expressed as a percentage of all response

**Table 7.27  Ranking of non Academic Aspects of the Course**

<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirement to attend on campus sessions</td>
<td>96.8%</td>
</tr>
<tr>
<td>Using workplace problems in Course assignments</td>
<td>95.5%</td>
</tr>
<tr>
<td>Convenience of block release mode</td>
<td>94.2%</td>
</tr>
<tr>
<td>Interaction with other OHS professionals on campus</td>
<td>94.2%</td>
</tr>
<tr>
<td>Working with others on campus assignments</td>
<td>87.0%</td>
</tr>
</tbody>
</table>
Social aspects of on campus sessions  87.1%
(62.9% of these rated this Very High)
Interaction with teaching/support staff  83.1%
Campus environment  79.1%
Course administration  70%
Local environs  65.1%

Of particular interest was whether the lower scores for local environs and Course administration were statistically significant. Chi squared tests showed both to be significant at the 1% level.

Of the 14 additional comments received, 3 were of praise for the educational value and flexibility of the Buninyong Hotel and a further three complained about Statistics

Question 21: Job changes after starting the course

51.9% of respondents changed jobs between the time of starting the Course and within two years of completion. Of these, over 50% reported an improvement in one or more of: salary, status, job satisfaction or career prospects. ie about 1No.in 4 No. achieved a significant improvement in their work situation in a relatively short period. These proportions /percentages are higher if retrenchments / retirements are taken into account.(Comments indicated 6 No. in this situation)
Table 7.28  Job Changes after Starting Course

<table>
<thead>
<tr>
<th>After starting the Course did you have a change of job</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>99</td>
<td>55</td>
</tr>
<tr>
<td>%</td>
<td>64</td>
<td>36</td>
</tr>
</tbody>
</table>

If "Yes" was the first change of job:

Table 7.29  First change of job for career orientated

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>% saying Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>During the Course</td>
<td>32</td>
<td>32.3</td>
</tr>
<tr>
<td>Within one year of completing</td>
<td>30</td>
<td>30.3</td>
</tr>
<tr>
<td>Within two years of completing</td>
<td>18</td>
<td>18.2</td>
</tr>
<tr>
<td>Within three years of completing</td>
<td>7</td>
<td>7.1</td>
</tr>
<tr>
<td>&gt; three years of completing</td>
<td>13</td>
<td>13.1</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

If "Yes" did the change significantly improve your:

Table 7.30  Improved employment factors

<table>
<thead>
<tr>
<th></th>
<th>Number saying Yes</th>
<th>% saying Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td>Status</td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>67</td>
<td>67</td>
</tr>
</tbody>
</table>

63
Career prospects 56 56
Total 226

Note: more than one response was possible

Question 22: What is your current employment situation?

There were high responses for various manager categories, OHS practitioners and consultants. Although more than one response was possible out of 200 responses, 183 indicated that the role would have made use of the post graduate level of the Course.

Table 7.31 Current Position Titles of Respondents

<table>
<thead>
<tr>
<th>Title</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health and safety consultant</td>
<td>52</td>
</tr>
<tr>
<td>Middle manager</td>
<td>37</td>
</tr>
<tr>
<td>Health and safety manager</td>
<td>36</td>
</tr>
<tr>
<td>Health and Safety practitioner</td>
<td>30</td>
</tr>
<tr>
<td>Senior manager</td>
<td>28</td>
</tr>
<tr>
<td>Not currently employed</td>
<td>11</td>
</tr>
<tr>
<td>Supervisor</td>
<td>4</td>
</tr>
<tr>
<td>Health and safety representative</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>200</td>
</tr>
</tbody>
</table>
Question 23: In your current job which of the following occupy more than 10% of your time?

There were 710 No. responses received from 156 No. subjects. These responses gave an indication of the range of activities performed by graduates. The high score for strategies reflects a strong managerial approach to OHS problems consistent with the Course goals and one of the main educational objectives of the Course (See Appendix A). The emphasis on legal aspects is also a defined educational Course objective. Hazard identification and hazard and risk control are high scoring items which form part of the Courses Behavioural objectives. These responses confirm that the Course is meeting its own objectives, and therefore its goals.

Table 7.32 Major Work Activities of Respondents

<table>
<thead>
<tr>
<th>Work Activity</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation of OHS strategies</td>
<td>116</td>
<td>74.4</td>
</tr>
<tr>
<td>Advising senior managers on legal aspects of OHS</td>
<td>101</td>
<td>64.7</td>
</tr>
<tr>
<td>Hazard control</td>
<td>91</td>
<td>58.3</td>
</tr>
<tr>
<td>Risk control</td>
<td>88</td>
<td>56.4</td>
</tr>
<tr>
<td>Hazard identification</td>
<td>87</td>
<td>55.8</td>
</tr>
<tr>
<td>Arguing the case for OHM with senior managers</td>
<td>69</td>
<td>44.2</td>
</tr>
<tr>
<td>Risk prediction</td>
<td>57</td>
<td>36.5</td>
</tr>
<tr>
<td>Risk estimation</td>
<td>54</td>
<td>34.6</td>
</tr>
<tr>
<td>Hazard prediction</td>
<td>47</td>
<td>30.1</td>
</tr>
</tbody>
</table>

Question 24 (a) Which functions of OHS positions do you personally use at least monthly in your job?
The importance of these responses was to identify skills required that are not part of the Course (or were not when respondents did the course). It does not represent the amount of time spent on each area. Table 7.26 below sets out, in descending order, the numbers and percentages of respondents using these functions at least monthly.

Table 7.33 OHS Functions Used at least monthly by Respondents

<table>
<thead>
<tr>
<th>OHS Function</th>
<th>No</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training in OHS</td>
<td>123</td>
<td>78.8%</td>
</tr>
<tr>
<td>Risk management</td>
<td>113</td>
<td>72.4%</td>
</tr>
<tr>
<td>Emergency procedures</td>
<td>89</td>
<td>57.1%</td>
</tr>
<tr>
<td>Loss control</td>
<td>80</td>
<td>51.3%</td>
</tr>
<tr>
<td>Environmental issues</td>
<td>73</td>
<td>46.8%</td>
</tr>
<tr>
<td>Workers compensation</td>
<td>69</td>
<td>44.2%</td>
</tr>
<tr>
<td>Disaster control/planning</td>
<td>64</td>
<td>41.0%</td>
</tr>
<tr>
<td>Injury management</td>
<td>64</td>
<td>41.0%</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>55</td>
<td>35.3%</td>
</tr>
<tr>
<td>Health promotion</td>
<td>49</td>
<td>31.4%</td>
</tr>
<tr>
<td>Disease prevention</td>
<td>43</td>
<td>27.6%</td>
</tr>
<tr>
<td>Security</td>
<td>28</td>
<td>17.9%</td>
</tr>
<tr>
<td>Other insurance</td>
<td>25</td>
<td>16.0%</td>
</tr>
<tr>
<td>Welfare</td>
<td>21</td>
<td>13.5%</td>
</tr>
</tbody>
</table>

Inspection of the Table shows that all functions other than "Security," "Other Insurance" and "Welfare" are used regularly by more than 25% of respondents to this Question.
"Training", "Risk Management" and "Emergency procedures" stand out as the highest scorers. It should be noted that there is some overlap between these categories and possibly some difficulties with terminology in defining "loss" and "risk".

"Other insurance" has previously been presented in the Course as "risk management".

"Loss control" is added as this is an important area. "Risk management", (whatever it means), is a high scorer.

"OHS training" stands out as the most frequently undertaken, and possibly due to its nature, one of the most time consuming parts of contemporary OHS work.

"Compensation" and "rehabilitation", which are functionally related, form a large response category.

"Emergency procedures" and "Disaster control/planning" together rate highly.

"Environmental" issues were relatively high as a single item.

**Question 24  (b) Further comments**

A large response was received (54 No. out of 156 No. or 34.6%) Generally they reflected the responses and comments to previous questions.
Some of the most informative comments did not necessarily reflect widely held views. These included:

...too much ability (opportunity) to plagiarise - some students relied on this (repetitive assignments, group work) S3

...one of the most beneficial aspects is the network and the doors that it opens...S4

...unique in that it provides an opportunity for workplace based assignments S11

...there was an orientation and tendency to assume (students)are OHS (practitioners); increasingly we are also in government OHS authorities, employer associations or in unions...This diversity should be acknowledged and educational needs addressed -also-

...Ballarat has an entrenched social culture which can be alienating to those who aren’t into that scene....Might help to acknowledge this to students S36

...the most valuable aspect of the Course was living for three weeks every semester with approx 40 other OHS professionals
You can get educational qualifications anywhere but you would be pushed to recreate the environment that is created during the on campus sessions S65
As a trade union official I found the course useful as it enables me to understand how management should tackle OHS S127

Supportive comments were made about the lecturing staff. (this subject was not canvassed in the Questionnaire).

Staff spared no effort to educate and please S113, Q19

...pleased with flexibility of key Course people (deadlines) S7 Q19

...problems met well handled by BCAE S49 Q19

...significant value with direct contact with lecturers S20

...learned an incredible amount from staff and members who shared experience and knowledge as a peer group S99 Q16

Students were encouraged to challenge in a professional manner the thoughts and philosophies of the Course presenters. Consequently I learned more. S84

The above comments give an impression that students were in a supportive, unconventional learning environment; and as adult learners were strongly interacting with each other and staff, for mutual benefits. The nature of the interactions described are highly consistent with developing the skills required to fulfil the Courses overall aims.
Suggestions were also included in relation to a need to improve statistics presentation: a lack of training in presentation skills, and in relation to management subjects (lack of experience of lecturers). At the same time, statistics and acquisition of management skills was regarded as important.

In relation to Course content: Quality, Rehabilitation, Claims management, Training skills and Environmental topics were mentioned as additional topics needed.

Overall emphasis on management frameworks was emphasised with a broader risk management or total loss control approach favoured by some.

7.3 Analysis of Cross Tabulations

Q2 X Q18 Female /Male Vs Attitude to team skills development

It was seen in Section 4.2.3 that social skills were highly valued by employers of graduates. Of the professional skills canvassed in Q18 one of the lower scores was for whether they thought the Course had developed their team skills. 50 out of 92 respondents, or 54.3% thought it had. Raw scores showed that of this group, females were proportionately higher represented. (66.6%) A chi squared test showed no difference at the 5% level.
Q4 X Q18  Prior educational level Vs Whether Course was considered overly theoretical and abstract

It was thought that the theoretical and abstract element of the Course may not be as attractive to those with a lower prior educational level. A comparison between those with Associate Diploma and above and others showed a significant difference at the 10% level.

Q6 XQ 19  Post secondary education gap Vs Off campus workload problem

It was thought, from the literature review that any problems would be only short term on returning to study. Statistical analysis showed no difference at the 5% level between those having an education gap of up to five years and those with a gap of more than five years.

Reasons for undertaking the Course vs Outcomes

Graduates were asked to identify which factors influenced them to undertake the Course. Several of these factors were compared with outcomes to establish whether their needs were met.

Q13 X Q14  Attitudes towards skills acquisition as a reason for undertaking the Course were compared to whether the Course provided adequate skills. Of 126 respondents who sought skills, 100 or 79.4%, also felt adequate skills were provided. A chi squared test showed that those who specifically sought skills were more satisfied with skills provided than others (5% confidence level).
Q13 X Q19  When Course reputation was given as a reason for doing the Course, no difference was found between this group and others at the 5% confidence level in relation to whether the Course provided satisfactory skills.

Q 13 X Q 21  Those who sought career advancement were no more likely to change jobs for an increase in salary status or job satisfaction than those who did not specifically seek career advancement. (Ho accepted at 5% )
8 DISCUSSION

8.1 Aim and Objectives

8.1.1 Aim of the Study

The Aim of the study was to evaluate if, in the opinion of graduates, the Graduate Diploma of Occupational Hazard Management is achieving its goals, and so determine necessary changes in the Course.

8.1.2 Objectives of the Study

Three Objectives arose from the Aim of the study. These are reiterated in Sections 8.2.1., 8.2.2., and 8.2.3., where each is evaluated in relation to the evidence found in the analysis of data carried out in Section 7. The outcomes of this evaluation form the basis of the Conclusions - Section 9 and Recommendations - Section.10.

8.2 Evaluation of Objectives

8.2.1 Evaluation of Objective (i)

Objective (i) was: To evaluate whether the changes in the OHM Course have matched the needs of clients over the period 1979-1991.
Section 7.3 showed that there has been a change over the study period in student characteristics. There were more females; more younger students; more students with less prior OHS experience. After graduation they are likely to change to a smaller employer. When the change in the student characteristics is set against the earlier mentioned workplace changes, it is clear that the Course has been adaptable. Strong evidence of continuing to meet its own goals and student needs as summarised below in Table 8.1

Table 8.1  Summary of Graduates Responses Relating to Clients needs

- **(a)** A high proportion (89%), believed the overall quality of the Course was adequate. (See Q.18, Section 7). Only 11 No. or 7.1% said the Course did not meet their expectations (See Q 19, Sec 7.3).

- **(b)** Higher level skills identified by graduates as useful, are those appropriate to Course goals (See Questions 15 & 16, Section 7.3)

- **(c)** A high proportion (87%), believed that adequate technical knowledge and management ideas have been provided (See Q.14, Section 7.3)

- **(d)** Evidence that graduates are in jobs at a level where they are contributing to OHS as practitioners or managers and can make use of the postgraduate level of training provided (See Q.22. Section 7.3).

- **(e)** High rankings for professional development skills, in particular problem solving and analytical (See Q18, Section 7.3)

- **(f)** High rankings for Course format related items. Use of workplace problems in assignments, on campus interaction, network development (See Q 20, Section 7.3).

- **(g)** Evidence that Course learning has been effective in terms of retained concepts related to Course priorities (See Q.15 and Q16, Section 7.3).

- **(h)** Evidence that the on campus learning environment contributes to Course aims (See Q24, Section 7.3).
(i) Strong evidence that professional development needs are being met (See Q.18, Section 7.3).

(j) Positive outcomes for graduates - money, status, and job satisfaction, perceived career opportunities (See Q.21, Section 7.3).

(l) Wide employer use of new skills and indications that graduates are involved in OHS change consistent with Course overall aims (See Q.17, Section 7.3).

(m) Major work activities closely matched to Course educational and behavioural objectives (See Q.23, Section 7.3).

The sample were tested to see if the Course was meeting the needs of some sub groups better than others on selected relevant items.

In comparing reasons given for doing the Course with outcomes, it was found that: those who nominated skills acquisition were more likely than others, to be satisfied with the skills provided; those who gave Course reputation as a reason did not differ from others; and those who nominated career reasons were no more likely to experience a positive change within three years of Course completion.

There was no gender difference in relation to attitudes to the important item of teamwork development.

Those with Trade/TAFE prior educational backgrounds did not differ from those with higher level qualifications in their view of the theoretical and abstract component of the Course.
8.2.2 Evaluation of Objective (ii)

Objective (ii) To determine what part of the Ballarat University college experience ex students found attractive and which parts repellent.

(a) Attractive Characteristics

Table 8.2 ranks Course elements most highly valued by respondents. Some Course characteristics which were identified by respondents (See Q.13, Section 7)) as being attractive and at least partially responsible for their choice of course were: The reputation of the Ballarat Course (63%), and the block release study format (44%).

Of the 31 comments appended to Question 8, 8 No. referred to the benefit of the block release mode and 5 No. to the reputation or quality of the Course.

<table>
<thead>
<tr>
<th>Table 8.2 Course Elements Highly Ranked by Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional skills development (See Q.18, Section 7)</td>
</tr>
<tr>
<td>Work related projects (See Q.20, Section 7)</td>
</tr>
<tr>
<td>Block release mode(See Q.20, Section 7)</td>
</tr>
<tr>
<td>Networking opportunity (See Q.20, Section 7)</td>
</tr>
<tr>
<td>Working with others on-campus. (See Q.20 Sectioin 7)</td>
</tr>
</tbody>
</table>
Contact on campus with other OHS professionals (See Q.20, Section 7)

(b) Repellent Characteristics

Respondents identified several factors as giving them problems during the Course. The major three-off campus workload, work commitments and family commitments. In Question 19, Section 7.3 Course administration was regarded as a problem factor by 31 or 19.9% of respondents. However, 70% of respondents ranked Course administration highly, or very highly (See Question 20, Section 7.3)

Two Course areas caused some respondents considerable concern in content and delivery:

Statistics - Although in response to Questions 15 and 16 a large proportion of graduates (32%) had found statistics to be one of the most useful skills obtained from the OHM Course, the Statistics unit was also identified in Question 19 as the only Subject causing a problem to more than one student (14 No.). A total of 25 respondents either expressed difficulty with the subject or commented negatively about either its usefulness or presentation.

Perhaps statistics as an academic discipline is a subject which students find universally difficult to grasp, particularly as a post graduate course which includes students with varying levels of previous learning. On examination, it was found that whereas 50% of people who expressed negative comment or difficulty had a highest previous academic level of
TAFE or Associate Diploma training, this group actually represented 40% of all students. i.e. a lower prior educational standard does not appear to be a dominant factor. The problem could relate to a lack of ability or confidence in basic mathematics but this is not borne out by evidence of difficulties with other subjects requiring high numeracy skills.

Comments received can be summarised in three areas:

- Relevance - the relationship between what was taught and what students found to be useful in the workplace was tenuous. More emphasis could be placed on practical applications
- Workload - the proportion of statistics in the course was excessive in time and content
- Presentation of the unit could be improved by better course materials and slower presentation of concepts on campus

These areas of comment when taken together with problems with statistics for unspecified reasons, generally reduce to problems of time and content. There appears to be several approaches which would help resolve these problems.

Firstly, the course aims of the statistics units could be re-examined to check whether they could or should match graduates perceived needs. Graduates have shown that they value highly, practical statistical skills which can be applied in OHS workplaces. Any changes should reflect this.
Secondly, problems for staff and students arising from the need to absorb too much too quickly during in campus sessions would be alleviated by providing students with more detailed, self teaching, programmed learning materials before the lecture series.

Thirdly, a review of Course content in terms of graduates' needs may enable some content to be eliminated or else reduced to a conceptual or descriptive level rather than being developed to the level of an analytical skill. This would reduce the actual work load and together with other actions suggested alter perceptions regarding whether time devoted to statistics was excessive.

Management - The other key subject area of concern was management. It was clearly considered to be important, with 87.7% of respondents able to identify management ideas as key things they learned from the Course. In questions 19 and 24, nine respondents made negative comments mostly of a general nature. While respondents appear to have been satisfied with their skills in the systems approach to managing hazards the broader aspects such as risk management (including insurance) and total loss control and the broader managerial functions appear to be of concern. Specifically the lack of experienced lecturers was mentioned by several. A problem may have partly been the lack of a clearly defined structure and content for what was taught. To some extent this appears to have been addressed in the 1992 Course re accreditation proposal (BUC,1990)
8.2.3 Evaluation of Objective (iii) What should the Course be delivering now?

As the Course is meeting its goals it should maintain its strengths and change only those things that need improving or have been identified as gaps in meeting the needs of students.

In Question 14 it was found that a large majority were satisfied with the both the technical skills and management ideas provided. The present mix should be maintained. Question 18, indicated high levels of satisfaction with professional skills development opportunities, but although 89.6% of respondents agreed the overall Course quality was satisfactory, only 29.2% strongly agreed, suggesting room for improvement. Most of the problem factors identified by respondents are personal or inherent in the Course (workloads) (See Question 19, Section 7.3). It is particularly important to continue work based projects to maintain employer support, which is crucial to students (See Analysis of Q 10).

In Question 22 (Section 7.3) in regard to position titles 52 No. or 33.3 % saw themselves as consultants. It is the author’s personal observation that there is a defined body of knowledge relating the skills of the consultant to the level of OHS sophistication of clients. Some of these skills should be made available to students.

Question 24 (a) examined a range of functions used at least monthly by respondents. Some gaps in what the the Course offered in the past which would now affect at least 25% of respondents are shown in Table 8.3
Table 8.3  OHS functions used by respondents but not always taught

<table>
<thead>
<tr>
<th>OHS Function</th>
<th>No</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training in OHS</td>
<td>123</td>
<td>78.8 %</td>
</tr>
<tr>
<td>Risk management</td>
<td>113</td>
<td>72.4 %</td>
</tr>
<tr>
<td>Emergency procedures</td>
<td>89</td>
<td>57.1 %</td>
</tr>
<tr>
<td>Loss control</td>
<td>80</td>
<td>51.3 %</td>
</tr>
<tr>
<td>Environmental issues</td>
<td>73</td>
<td>46.8 %</td>
</tr>
<tr>
<td>Workers compensation</td>
<td>69</td>
<td>44.2 %</td>
</tr>
<tr>
<td>Disaster control/planning</td>
<td>64</td>
<td>41.0 %</td>
</tr>
<tr>
<td>Injury management</td>
<td>64</td>
<td>41.0 %</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>55</td>
<td>35.3 %</td>
</tr>
<tr>
<td>Health promotion</td>
<td>49</td>
<td>31.4 %</td>
</tr>
<tr>
<td>Disease prevention</td>
<td>43</td>
<td>27.6 %</td>
</tr>
</tbody>
</table>

8.3 Evaluation of Aim

(i) Evaluating the Aim

On the basis of the evaluation of the Objectives, it is clear that a large proportion of graduates believe that it is achieving its goals. (See 8.2 above)

The Course has matched the needs of a high proportion of its graduates in the provision of appropriate knowledge and skills which were
seen to be effectively applied in the workplace by graduates, most of whom had experienced related personal and material rewards.

Most aspects of the "University of Ballarat experience" were seen to be attractive. Repellent parts of the experience where experienced by a large proportion of graduates related to personal and family aspects beyond the direct influence of the Course administration. Some problem areas encountered by smaller but important numbers were identified.

Necessary changes to the Course were determined. These were minor in relation to the Courses overall content and delivery but important in the numbers of people and the strength of feeling. They consisted of incorporation of the items identified in Table 8.3 together with consulting skills.

Areas where respondents felt less need for skills were sociology and psychology.

8.4 Change

In Section 8.3.1 it was shown that the Course had changed over the period to meet graduates' needs. The ability of the Course to continue to be changed in response to changing graduate needs is important. In Section 4.5 it was seen that although the rate of change in most areas increases exponentially, major paradigm shifts seem to occur as the result of successive small increasing increments. Future technological changes, and therefore the related changes in hazards are expected to be slow and the present practice of Course
modifications in response to graduates needs every few years with Course re accreditation is satisfactory. Emerging issues and changing management fashions, however should be closely monitored.

8.5 Limitations of the Study

After analysis of the demographic and personal data, it became evident that, while some measures showed large numbers close to some sort of median (eg Age Group distribution with a median of 45% aged 35-45), it was not possible to provide a profile of a "typical OHM student". The spread of other characteristics showed it was more likely that several kinds of typical student existed; each defined by different clusters of characteristics and interrelated circumstances eg the correlation between age and experience etc. Some sort of factor analysis technique could reveal this from the data obtained but was beyond the scope of the study.

More recent students were over represented in the sample, largely because of increasing enrolments ie the distribution is not rectangular, as would be ideal for a linear study. This however made the data more amenable to some trend analysis, if required. Since the study looks at whether the Course has changed to meet the needs of Graduates, homogeneity in the sample is not the issue, only the perceptions, outcomes and responses of individuals.

We know a lot about the students who enrolled and why; virtually nothing about those who did not enrol or those who did not complete. Some barriers have been identified eg lack of employer support.
Employer views on the Course in terms of their experiences of Course participants as students or graduates were not canvassed but very important to a more complete evaluation of the Course.

In determining the applicability of the study, it is important to be aware of several factors relating to sample bias:

- the population from which the sample was drawn was self selecting - only those attracted to the Course made application for entry; others may have rejected it as an alternative due to factors considered by those in the study to be attractive;
- factors in the Course student selection process may favour students with a particular set of views;
- Course non completers and non responders to the questionnaire may represent different but valid viewpoints.
A higher response rate may have been expected from those who were well disposed towards the Course.

9 Conclusions and Recommendations

9.1 Conclusions

This project has evaluated the Graduate Diploma in Occupational Hazard Management course at the University of Ballarat in order to find out how well it has met the needs of its graduates, from its inception in 1979, to 1992.

The research involved determining appropriate issues and topics to evaluate the Course. These were identified by a literature review, covering areas of evaluation of social and educational programs, market research techniques including market research studies, similar studies related to occupational health and safety, workplace and societal change and trends and predictions. Information was also obtained through discussions with VIOSH staff, a professional market researcher and other OHS practitioners.

Using a market research approach, and the indicators from the literature review, and discussions with others, a questionnaire was developed. The questionnaire was mailed out to all known graduates. The data sought was both factual and attitudinal. It included: demographic and personal details; information related to graduates' perceptions about educational and non educational aspects of their experiences of the course; and also information about post course work related outcomes. Information on current
employment activities was sought, to relate to Course Objectives and teachings, as they currently relate to the workplace.

Data gathered was from a sample of a single population of 156 respondents from graduates of the Course and did not allow the use of inferential statistical methods based on distributions. The use of descriptive statistics was supported by non parametric statistical analysis, generally using chi squared goodness of fit methods for equality of proportions or comparison between time periods by a split sample method.

The data received included many free responses, which had been invited or specifically sought, either as additional comments to questions; as an overall comment at the end of the questionnaire; or as specific information sought in particular categories. Free responses were used either as additional information to assist analysis of coded responses, or to add a qualitative element, to provide insights, gather useful information; or used to develop a data set capable of further analysis.

The outcome was that the data obtained from the questionnaire, gave results which when further analysed led to conclusions about the Aim and Objectives of the study recommendations for actions concerning the Course and further research which would extend knowledge about the Course.

9.1.1 Whether Course has met Graduates needs

Part (i) of the Objectives was to Determine whether the Course has continued to meet the needs of graduates during the period 1979 - 1992
The results showed - widespread support for the quality of the Course both in terms of graduates perceptions of what they had received, and in terms of outcomes of jobs. Further it was found that the level of support had been maintained over the period -there was little evidence of change over time in graduates attitudes on a number of key indicators.

9.1.2 The parts of the Course found to be attractive and repellent.

Part (b) of the Objectives was to determine which parts of the Course students found attractive and which parts they found repellent.

Aspects of the Course which students found attractive were:

- hygiene and OHS management systems,
- development of professional skills and competencies,
- Course reputation
- block release mode,
- work based assignments,
- on campus requirement,
- networking,
- working with others on campus assignments, and
- staff: support, interaction with, and commitment.

Aspects of the Course which students found repellent were:

- off campus work and domestic pressures, and
- presentation of the management and statistics units.
9.1.3 What the Course should be offering now.

Part (c) of the Objectives was to determine which things the Course should be offering now.-

It is acknowledged that there will be a limit to the things that can be fitted into a course and therefore prioritisation is important; but that is beyond the concerns of this study.

Generally Course offerings were found to be of four kinds:

(i) Items which have stood the test of time, and should be retained or reinforced

(ii) Items which were no longer relevant

(iii) Gaps which were identified

(iv) Trends

Conclusions drawn from the Discussion, Section 8 which combined answers to specific Questions with free responses indicated by their breadth and depth, particularly in relation to their workplace activities, that the Course could be interpreted more from an employers viewpoint with an over all risk management approach and a more holistic approach to OHS hazards.

A review of graduates' current workplace activities identified a majority of activities which already form a significant part of the Course, are highly valued and on which an emphasis must be maintained. These were in the areas: of higher level theoretical and analytical skills; management systems; and practical technical skills in occupational hygiene which could be directly applied in the workplace.
Also based on graduates' current employment activities a number of specific skill areas were identified as requiring inclusion or increased emphasis. These were:

- consulting skills
- training skills
- management skills
- rehabilitation; injury and claims management and workers compensation
- a risk management/ total loss control focus
- emergency procedures, disaster control / planning
- quality and environmental issues
- health promotion, disease prevention

Areas where some graduates felt less need for skills were:

- sociology and psychology
9.2 RECOMMENDATIONS

Based on this study:

Some highly valued curriculum aspects should be maintained.....

- technical skills - environmental measurement, statistical analysis, information research
- analytical research skills, conceptual frameworks
- management ideas and processes

Some highly valued non-course content aspects should be retained and nurtured.....

- work based assignments
- working with others - on campus assignments, networking

Some gaps in Course content should be filled.....

- Health promotion as a concept would provide a wider view of disease prevention and a more holistic background for health and hygiene topics
- Rehabilitation and injury management should be included
- Claims management and compensation should be included
- Planning and execution of emergency and disaster control plans should be included
Professional development should be enhanced.....

- The management of consultants and contractors should be included
- Consultancy skills should be included to facilitate graduates working as internal or external consultants
- Training skills should be taught, sufficient to enable graduates to design evaluate and implement training programs at all organisational levels
- Presentation skills should be taught to enhance training activities and assist communication with management

Two Course delivery problems should be fixed.....

Statistics

- The use and need for statistical analysis in OHS workplace practice should be defined.
- The unit should be clearly divided into a set of practical OHS applications in which graduates know they should be proficient; and a secondary set of concepts and techniques related to fuller understanding of the potential for statistics in OHS, including research.
- Appropriate learning materials should be developed to enable students to teach themselves at their own pace. These should be made available to students well before the on-campus lectures.
Management

- The current approach to management subjects in a total loss control approach with in an organisational framework should continue to be emphasised. Particular emphasis should be placed on ensuring these subjects are taught by people with appropriate industrial experience.

- Further research is needed into the effects of the changes to the management subjects which commenced in 1991.

and VIOSH should.....

- Follow up Course non completers to determine reasons.

- Build into its management system a descriptive model of the future of OHS, based on known trends and forces of change, for the purposes of monitoring and discussion, of Course changes.

- Promote the concept of the Course as a package emphasising the "total experience" rather than just an educational product or service.
9.3 Further Research

During the study it became clear that a fuller evaluation of the Course would be possible if further research were undertaken in several areas:

- Little is known about Course "non completers" (30%) and reasons for non completion, particularly where these are linked to content and delivery or prior misunderstanding of how the Course would relate to individual circumstances, either personal or professional.

- Little is known about the perceptions of individual employers or managers within organisations towards the Course based on their expectations of and experiences with graduates.

- The data obtained from the questionnaire survey in this study could be further analysed. e.g. to segment the sample into subgroups such as geographical location or educational background in relation to characteristics related to student or graduate needs or to identify changes over time.

- The relationship between organisational structures and the role of OHS practitioners appears from this study to be important, particularly regarding their influence on management decision making and systems; and also career paths.


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Eckersley R., and Jeans K., 1984 Challenge to Change - Australia in 2020, CSIRO Australia


Laird D 1985 Approaches to Training and Development Reading, Ma Addison -Wesley


Lawrence G. 1989. People types and tiger stripes - A practical guide to learning styles. Centre for Applications of Psychological Type, Inc. Gainsville, Florida


Mathews J. 1985 Health and Safety at Work Pluto Press, Sydney


Appendix A

Grad. Dip. OHM, Course information. Extract from Course Handbook
0 INTRODUCTION

The Graduate Diploma in Occupational Hazard Management was first offered in 1979, and was the first Occupational Health and Safety tertiary course in Australia. Since that time, it has continued to attract students at a national level, despite a dramatic growth in related courses in the tertiary sector Australia-wide. The calibre of graduates has resulted in the course establishing considerable national credibility and recognition; maintaining its reputation as the leading course in its field.

In 1988 the first students successfully completed the course work component of the Master of Applied Science in Occupational Health and Safety and were admitted to the research component of the program.

By refining their skills in research methodology, Masters students are able to further their postgraduate studies and contribute to the growing body of contemporary Australian health and safety knowledge.

Modern research emphasises the need to design work places and systems to be healthy and safe rather than attempt to educate people to use or operate inadequate facilities in a safe manner. This course attempts to provide the knowledge and skills for health and safety specialists to be able to enter into organisations and coherently argue, justify and implement solutions based upon the designing out of health and safety problems.

The course is designed to attract students from the following groups:

(a) Engineering, science, business studies and other graduates with developing responsibilities for health and safety in the workplace;

(b) Health and safety practitioners with suitable academic backgrounds.

The course attempts to provide the robust multi disciplinary frameworks on which future knowledge and experience in health and safety can be built; it does not attempt to provide comprehensive detailed coverage of all aspects of the broad subject of health and safety. The course attempts to produce self-directed learners who have the academic frameworks and skills to tackle new issues in health and safety as and when they arise.

Over the years since the course was first introduced, the profile of health and safety within organisations has undergone considerable change. With increasing recognition of the need to control the occupational accident and ill-health problem, there have been a number of changes which have impacted upon the course.
The shift away from the former external regulatory style of legislation has led all States and Territories to introduce Occupational Health and Safety statutes which emphasise internal organisational responsibility for management of health and safety.

This, combined with growing recognition of the status of the profession, has resulted in an ever-increasing number of health and safety positions being created at senior organisational management levels in both the public and private sectors, with parallel development within union, employer and consultancy organisations and the state based regulatory authorities.

Due to this strengthening of the profile of health and safety in the workplace, there has also been a corresponding expansion in the related body of accumulated research and experience, particularly from the organisational management perspective.

The course continues to be refined and restructured to accommodate the implications of on-going change, in terms of both the currency of the content and the level of targeted educational outcomes.

2.0 V.I.O.S.H.

The Victorian Institute of Occupational Safety and Health (VIOSH) was established in 1984 under the Directorship of Dr. Dennis Else, who is now the Dean of the Division of Engineering and Science. VIOSH is affiliated with the Division of Engineering and Science and has a full-time staff of six.

The overall objectives of VIOSH are:

(i) to make a significant contribution to the prevention of occupational injuries and occupational diseases in Australia and the rest of the world;

(ii) to produce the most effective Health and Safety Practitioners/Managers/Inspectors of any of the courses in Australia;

(iii) to act locally, within the State and nationally as a source of expertise on the strategic cost-effective control of occupational risks.

VIOSH has a number of major functions which include co-ordinating accredited tertiary courses; conducting short courses; research; and providing information and specialist advice.

2.1 Staff

Steve Cowley Acting Director and Course Administrator, M. App. Sc. (OHS).
2.2 Research and Consultancy Activities

The research and consultancy activities of VIOSH have a practical orientation towards solving occupational health and safety problems. VIOSH's philosophy is that great benefits can be derived from "closing the gap" between what is already known and what gets applied widely in the community. Rather than continually pushing back the "frontiers of knowledge", research should now be directed toward applying the existing knowledge to the workplace and in this way helping to prevent occupational illness and accidents.

Many of VIOSH's projects have been concerned with developing, implementing and monitoring occupational health and safety educational programs for specialists and non-specialists. The primary on-going research activity of VIOSH, the "SHARE Program", is concerned with building a databank of cost-effective solutions to occupational health and safety problems. The SHARE databank ensures that solutions, once found, can be applied widely throughout the community.

VIOSH has undertaken research projects with funding from organisations such as the Victorian Department of Labour, the National Occupational Health and Safety Commission, the Victorian Occupational Health and Safety Commission, the ACTU, the Department of Employment and Industrial Relations and the Victorian TAFE Board.

The consultancy activities of VIOSH have primarily focused on providing occupational health and safety management auditing and advisory services for many high-profile organisations across a diverse range of industry groups.

2.3 Accredited Tertiary Courses

In addition to the Graduate Diploma in Occupational Hazard Management and the Master of Applied Science in Occupational Health and Safety courses, VIOSH provides input to a wide range of other undergraduate and postgraduate courses at Ballarat University College.
2.4 Short Courses

In addition to the six month certificate course in Occupational Health and Safety, VIOSH also conducts short courses for various organisations and enterprises on contract. Short courses dealing with general aspects of occupational health and safety have been held for the Royal Australian Air Force and Navy, Australian Airlines, Qantas, Ansett Airlines, Australia Post, the Victorian Department of Labour, the Australian Council of Trade Unions and the Institute of Personnel Management Australia.

Seminars dealing with specific occupational health and safety issues are also co-ordinated by VIOSH.

2.5 Information Resources

VIOSH has one of the most comprehensive collections of occupational health and safety information anywhere in Australia. The College has experienced staff who have been responding to health and safety queries and supporting health and safety researchers for many years. The College’s main library also holds a comprehensive range of occupational health and safety texts and journals.

VIOSH’s Information Centre has emphasised the collection of “ready to use” information, in other words, material with an immediate practical application. This type of material, often in the form of “soft copy” publications from government departments, industry associations, unions etc., is seldom held by conventional libraries. Materials of this nature have been collected from overseas, particularly New Zealand, Britain, Scandinavia, Canada and the U.S.A.

Apart from holding books and papers, VIOSH also has a computer information retrieval base and uses compact disk facilities. VIOSH can access the major occupational health and safety databases from the United Kingdom, Canada, U.S.A. and the International Labour Organisation on CD ROM. A number of chemicals databases are also held on compact disk. VIOSH also has a comprehensive microfiche library which contains upwards of 85,000 pages of health and safety information, or 3,500 documents on microfiche.

VIOSH provides a “Current Contents” service which draws together the contents pages of periodicals and journals. The Current Contents is a convenient way of scanning occupational health and safety material as it is published. It is produced every two months and is circulated widely to current and past students and to other interested subscribers.

2.6 Advisory Function

Members of VIOSH sit on various governmental and industrial committees and advisory boards, and the Division’s Dean, Dr. Dennis Else, is a member of the Victorian Occupational Health and Safety Commission.
VIOSH actively supports complimentary developments at other educational institutions and provides input to a broad range of health and safety programs, at both secondary and tertiary level.

3.0 COURSE OBJECTIVES

Educational Objectives

Upon successful completion of the course, graduates should be able to demonstrate a sound knowledge of:

1. The means of predicting, identifying, assessing and controlling occupational hazards.

2. The means of predicting, estimating and controlling occupational risk, and influences on risk acceptance.

3. The legal, social, organisational and academic environment within which the occupational health and safety specialist operates.

4. The management skills appropriate for the satisfactory initiation, operation and evaluation of corporate strategies to integrate proactive occupational health and safety management into mainstream business operation.

Behavioural Objectives

Upon successful completion of the course, graduates should be able to plan and commission corporate health and safety strategies utilising their ability to:

1. Successfully argue the benefit of effective occupational health and safety management as a corporate objective.

2. Initiate, implement and evaluate comprehensive, integrated health and safety programs.

3. Access, organise, evaluate and utilise information and data relating to occupational health and safety.

4. Predict, define and solve problems arising from the complex connections and interactions in human-machine-environmental systems.

5. Co-ordinate internal and external resources and agencies involved in occupational health and safety management within an organisation.

6. Predict likely technical and organisational sources of failure of control strategies.
The Masters degree incorporates the following additional objectives:

**Educational**

1. Information retrieval methods and sources in health and safety.
2. The role and use of microcomputers in health and safety management and research.
3. Research methods appropriate to the multi disciplinary subject of health and safety.

**Behavioural**

1. Utilise software packages for word processing, spread-sheet analysis, database management, project planning, communications, desk-top publishing.
2. Generate research hypotheses and produce research proposals.
3. Successfully apply research methods to tackle an approved research project.

**4.0 ADMISSION REQUIREMENTS**

**Graduate Diploma Occupational Hazard Management**

Minimum requirements for direct entry are:

1. A first degree, with appropriate major studies;

   OR

2. A diploma or equivalent award with appropriate major studies plus at least two years appropriate experience;

   OR

3. At least three years health and/or safety management experience at an appropriate level and demonstrable ability to benefit from the course.

**Masters of Applied Science (OHS)**

Minimum requirements for direct entry are:

1. First degree, with appropriate major studies.
Appendix B

List of persons consulted
Appendix B

List of persons consulted

C Booth, Australian Antarctic Division, Kingston, Tas.

J Campbell, Evansdale Rd Hawthorn

S. Cowley, VIOSH, Australia

R Elvins, Acacia St Blackburn, Vic.

J Knowles, VIOSH Australia
Appendix C

Questionnaire and covering letter.
8th November, 1994

Dear Colleague

I am writing to request your co-operation in the completion of the attached questionnaire survey about student experiences of the Graduate Diploma in Occupational Hazard Management Course.

The results will be used by one of our Master of Applied Science (OHS) students, who is reviewing the course as a part of a research project.

The outcomes of the project will assist us in our program of course development and continuous improvement of our services to students and graduates.

Review, evaluation and improvement are essential to the course and the maintenance of its reputation and hence the credibility of your qualification.

I will be grateful if you will take the time now to complete the questionnaire and return it to me in the reply-paid envelope enclosed.

Your name and address has been obtained from our records and has not, and will not, be made available to the research student nor any person outside of the University. Because you are not required to identify yourself on the questionnaire, anonymity is assured. All individual responses will be treated as confidential.

Thank you for your participation and on-going support of your Graduate Diploma OHM course.

Regards

STEVE COWLEY
Director
Graduate Diploma of Occupational Hazard Management;
Graduate Questionnaire

This questionnaire seeks information about the history and background of Graduate Diploma(OHM) graduates and their experiences during and after the course. The results will be used as a part of a MAppSc(OHS) project and used in the process of continuous improvement of the course.

Information provided will be anonymous. Individual responses will be treated as confidential. Only summary information will be published and this will be made available to participants.

Testing of this questionnaire during a pilot survey has shown that it takes approximately 20 minutes to complete.

Space has been provided at the end of the questionnaire for any qualifying remarks or additional comments you wish to make.

Return the completed questionnaire using the envelope provided. Please return it as soon as possible, but not later than Friday the 25th of November 1994.

Thank you for your assistance.

Please answer the questions by ticking (✓) the appropriate box or by supplying the information requested.

If you do not find the answers that exactly describe your situation, select those answers that are closest and/or provide specific comment where indicated.

Question 1
In which year did you commence the course? In which year did you complete the course?

1980

1981

Question 2
Are you
Female?  ☐
Male?  ✓

Question 3
Which age group were you in when you started the course?

Under 25 years  ☐
25 to 35 years  ☐
35 to 45 years  ✓
45 to 55 years  ☐
Over 55 years  ☐
Question 4
How many years of paid OHS experience did you have at commencement of the course? (Exclude nursing, first aid and health & safety representative duties)

None
Up to 5 years ✓
5 to 10 years
10 to 15 years
Over 15 years

Question 5
What was your highest post secondary qualification prior to the course?

None
Trade or TAFE certificate ✓
Assoc. Dip.
Degree
Post Grad.
Other (Please specify)

Question 6
Were you returning to formal study after a break from post secondary study of...

No years
Up to 5 years
5 to 10 years
10 to 15 years ✓
Over 15 years ✓

Question 7
Where were you living at the time of commencement of the course? (Please tick two of the four boxes on one line only)

<table>
<thead>
<tr>
<th>State/Territory</th>
<th>Capital City</th>
<th>or</th>
<th>Regional City</th>
<th>or</th>
<th>Rural Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qld</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other (please specify)
Question 8
Was there another OHS course available to you at the time?

Yes [✓]
No [ ]

Comment

CERTIFICATE LEVEL IN S.A.

Question 9
Are alternative Courses available now?

Yes [✓]
No [ ]

Question 10
What employer support did you receive when doing the course? (Tick as many as you wish)

Not relevant - unemployed (go to question 13) [ ]
Not relevant - self employed [ ]
Leave with pay to attend on-campus sessions [✓]
Time to complete assignments during working hours [ ]
Use of employer’s facilities or resources [✓]
Payment of fees/HECS charges [✓]
Payment of accommodation & meals expenses [✓]
Payment of travelling expenses [✓]
None [ ]
Other (Please specify) [ ]

Comment


Question 11
(a) What was the size of the organisation you worked for when you commenced the Course?

Less than 50 employees [ ]
50 to 100 employees [ ]
100 to 500 employees [ ]
500 to 1000 employees [ ]
Over 1000 employees [✓]

(b) What is the size of the organisation you work for now?

Less than 50 employees [✓]
50 to 100 employees [ ]
100 to 500 employees [ ]
500 to 1000 employees [ ]
Over 1000 employees [ ]
Question 12
(a) In which industry were you employed at the commencement of the Course?
- Agriculture, Forestry, Fishing
- Mining
- Manufacturing
- Electricity, Gas and Water
- Construction
- Trade
- Transport and Storage
- Finance and Business Services
- Public Administration
- Community Services (inc health)
- Recreation

(b) In which industry are you now employed?
- Agriculture, Forestry, Fishing
- Mining
- Manufacturing
- Electricity, Gas and Water
- Construction
- Trade
- Transport and Storage
- Finance and Business Services
- Public Administration
- Community Services (inc health)
- Recreation

a) Other (Please specify)  

b) Other (Please specify)  

Question 13
Which of the following reasons influenced you to start the course? (Tick as many as you wish)

- Career advancement  
- Seeking a new career
- Employer requirement
- Desire to increase job satisfaction
- Need for more skills and or knowledge of OHS
- Reputation of the Ballarat Course
- Block release study format
- The geographical location of Ballarat
- It was the only OHS course available to me
- To gain a tertiary qualification
- To fulfil a personal goal

Other, please specify  

Comment

Question 14
In your opinion, did the course provide adequate...

(a) Technical knowledge?  
- Yes  
- No

(b) OHS Management ideas?  
- Yes  
- No
Question 15
What were the three technical skills from the course that you have found most useful in your job?

1. Safety Engineering

2. Law

3. Safety Concepts

Question 16
What were the three key ideas from the course that you have found most useful in your job?

1. Accident Causation

2. Safety Management

3. Statistics

Question 17
To what degree did your employer(s) use the new skills and new ideas you gained during the Course? (Please tick one box)

- Not at all
- Negligible use
- Moderate use
- Frequent use

Comment

______________________________
Question 18
To what extent do you agree with the following statements?
(Please circle one number for each statement)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Course developed my problem solving skills.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The Course sharpened my analytical skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The Course helped me develop my ability as a team member</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>As a result of the Course I feel more confident about tackling unfamiliar problems</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The Course was overly theoretical and abstract</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The Course helped me to develop my ability to plan my own work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Overall I was satisfied with the quality of the Course</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Question 19
Which, if any, of the following factors gave you problems during the course?
(You may tick more than one)

- Work commitments
- Family commitments
- Financial commitments
- On-campus Course workload
- Off-campus Course workload
- Inability to attend on campus sessions
- Course did not meet expectations
- Changed priorities due to employment circumstances (became less relevant)
- Block release mode
- Course administration (e.g. course information, assignment processing, etc.)
- Ill-health

Specific subjects (Specify)________________________________________

Comment__________________________________________
### Question 20
How do you value the following aspects of the course?  
*Circle one number on each line*

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Very high Value</th>
<th>High Value</th>
<th>Low Value</th>
<th>Very low Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using workplace problems in course assignments</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Working with others on on-campus assignments</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Social aspects of on-campus sessions</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Requirement to attend on-campus sessions</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Development of a professional network</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Convenience of block release mode and off-campus assignments</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Interaction with other OHS Practitioners on campus</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Course administration</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Interaction with teaching/support staff</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Campus environment (accommodation, grounds, etc.)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Local environment (Buninyong, Ballarat, etc.)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Comment**

---

### Question 21
After starting the course, did you have a change of job?

- No ☐ (Go to question 22)
- Yes ☑

**If “yes”, was the first change of job...**  
*Please tick one box only*

- During the course ☐
- Within 1 year of completing ☐
- Within 2 years of completing ☑
- Within 3 years of completing ☐
- More than 3 years after completing ☐

**If “yes”, did the first change of job significantly improve your...**  
*You may tick more than one*

- Salary ☑
- Status ☑
- Job satisfaction ☐
- Career prospects ☐

**Comment**

---
Question 22
What is your current employment situation? *(You may tick more than one)*

- Senior manager
- Middle manager
- Supervisor
- Health and safety practitioner
- Health and safety representative
- Health and safety consultant
- Health and safety manager
- Not currently employed

Other (please describe): __________________________

________________________

Question 23
In your current job, which of the following occupy more than 10% of your time...
*(You may tick more than one)*

- Hazard prediction
- Hazard identification
- Hazard control
- Risk prediction
- Risk estimation
- Risk control
- Arguing the case for OHM with senior managers
- Advising senior managers on legal aspects of OHS
- Initiation of OHS strategies

Comment

________________________

________________________

________________________
Question 24

Please tick those functions of OHS positions you personally use at least monthly in your job:

- Workers Compensation
- Other insurance
- Rehabilitation
- Injury management
- Welfare
- Training in OHS
- Health promotion
- Disease prevention
- Loss control
- Risk management
- Security
- Emergency procedures
- Disaster control/planning
- Environmental issues
- Other (Please describe)

Question 24

Are there any other further comments you wish to make or answers you wish to clarify?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Thank you for participating in the survey.

Please return the questionnaire to VIOSH in the postage-paid envelope provided, no later than Friday the 25th of November 1994.
Appendix D

Course information from VIOSH records
## Table 1 - Student Enrolment Statistics

<table>
<thead>
<tr>
<th>Intake</th>
<th>Applications</th>
<th>Offers</th>
<th>Enrolments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>1979 Intake 1</td>
<td>36</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>1980 Intake 2</td>
<td>39</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>1981 Intake 3</td>
<td>37</td>
<td>29</td>
<td>21</td>
</tr>
<tr>
<td>1982 Intake 4</td>
<td>29</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>1983 Intake 5</td>
<td>30</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>1984 Intake 6</td>
<td>44</td>
<td>29</td>
<td>20</td>
</tr>
<tr>
<td>1985 Intake 7 &amp; 8</td>
<td>68</td>
<td>57</td>
<td>39</td>
</tr>
<tr>
<td>1986 Intake 9 &amp; 10</td>
<td>88</td>
<td>55</td>
<td>32</td>
</tr>
<tr>
<td>1987 Intake 11</td>
<td>78</td>
<td>56</td>
<td>30</td>
</tr>
<tr>
<td>1988 Intake 12</td>
<td>83</td>
<td>62</td>
<td>38</td>
</tr>
<tr>
<td>1989 Intake 13</td>
<td>81</td>
<td>62</td>
<td>35</td>
</tr>
<tr>
<td>1990 Intake 14</td>
<td>72</td>
<td>58</td>
<td>39</td>
</tr>
<tr>
<td>1991 Intake 15</td>
<td>111</td>
<td>83</td>
<td>51</td>
</tr>
<tr>
<td>1992 Intake 16</td>
<td>123</td>
<td>99</td>
<td>44</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>919</td>
<td>680</td>
<td>346</td>
</tr>
</tbody>
</table>

## Table 2 - Distribution of Enrolled Students by Home Address

<table>
<thead>
<tr>
<th>Intake</th>
<th>Vic</th>
<th>NSW &amp; ACT</th>
<th>Qld</th>
<th>NT</th>
<th>SA</th>
<th>WA</th>
<th>Tas</th>
<th>Overseas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979 Intake 1</td>
<td>9</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1980 Intake 2</td>
<td>7</td>
<td>3</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>1981 Intake 3</td>
<td>10</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1982 Intake 4</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1983 Intake 5</td>
<td>13</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1984 Intake 6</td>
<td>13</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1985 Intake 7</td>
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<td>2</td>
<td>1</td>
<td>5</td>
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<td>1</td>
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<tr>
<td>1986 Intake 8</td>
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<td>4</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1987 Intake 9</td>
<td>7</td>
<td>3</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
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<td>1988 Intake 10</td>
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<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>1989 Intake 11</td>
<td>17</td>
<td>2</td>
<td>4</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>1990 Intake 12</td>
<td>14</td>
<td>10</td>
<td>2</td>
<td>-</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>1991 Intake 13</td>
<td>18</td>
<td>3</td>
<td>5</td>
<td>-</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>1992 Intake 14</td>
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<td>3</td>
<td>-</td>
<td>8</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>1993 Intake 15</td>
<td>23</td>
<td>9</td>
<td>6</td>
<td>-</td>
<td>9</td>
<td>1</td>
<td>3</td>
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<td>1994 Intake 16</td>
<td>21</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>9</td>
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<td>2</td>
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<tr>
<td>TOTAL:</td>
<td>199</td>
<td>70</td>
<td>43</td>
<td>9</td>
<td>64</td>
<td>21</td>
<td>17</td>
<td>3</td>
</tr>
</tbody>
</table>
### TABLE 3 - DISTRIBUTION OF ENROLLED STUDENTS BY EMPLOYER

<table>
<thead>
<tr>
<th>TAKE</th>
<th>PUBLIC UTILITY</th>
<th>LOCAL/STATE/COMMONWEALTH GOVERNMENT</th>
<th>MINING INDUSTRY</th>
<th>MANUFACTURING</th>
<th>HEALTH</th>
<th>OTHER*</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>79 Intake 1</td>
<td>3</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>20</td>
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<tr>
<td>80 Intake 2</td>
<td>4</td>
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<td>3</td>
<td>3</td>
<td>-</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>81 Intake 3</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>82 Intake 4</td>
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<td>4</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>16</td>
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<tr>
<td>83 Intake 5</td>
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<td>2</td>
<td>3</td>
<td>1</td>
<td>7</td>
<td>25</td>
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<td>1</td>
<td>4</td>
<td>-</td>
<td>6</td>
<td>20</td>
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<tr>
<td>85 Intake 7</td>
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<td>3</td>
<td>2</td>
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<td>4</td>
<td>1</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>87 Intake 9</td>
<td>4</td>
<td>4</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>88 Intake 10</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>89 Intake 11</td>
<td>-</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>13</td>
<td>30</td>
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<td>90 Intake 12</td>
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<td>9</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>15</td>
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</tr>
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<td>91 Intake 13</td>
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<td>11</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>11</td>
<td>35</td>
</tr>
<tr>
<td>92 Intake 14</td>
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<td>14</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>39</td>
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**INCLUDES:** Education, Insurance, Chemical, Food, Professional Associations, Construction

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Appendix E

Rationale for each Question
APPENDIX E
Rationale for Questions

Fundamental goals of the Course have remained the same:

'...to provide the knowledge and skills for health and safety professionals to be able to enter into organisations and coherently argue, justify and implement solutions based upon designing out of health and safety problems.' (BCAE, 1990)

The course has clearly set out behavioural objectives and learning objectives that relate to the above goals (BUC, 1992)

Aim:
To evaluate if, in the opinion of graduates, the Graduate Diploma of Occupational Hazard Management is achieving its goals, and so determine necessary changes in the course.

To achieve the above Aim, the following objectives were developed:

Objectives:

(i) To evaluate whether the changes in the Graduate Diploma of Occupational Hazard Management program have matched the needs of clients over the period 1979-1991.
(ii) To determine what part of the "University of Ballarat experience" ex-
students found attractive and which parts repellent.

(iii) To determine what the Graduate Diploma should be delivering now, to
satisfy client needs.

From information gained and the issues determined the following Questions
were designed to give information about the aims and objectives above

Q. 1 In which years did you commence and complete the Course?

Allows other items to be sorted against time, to establish trends or time related
differences. Necessary to establish Aim of whether Course had changed to
meet needs of graduate. Examination of the experiences of earlier graduates
may allow something to be said about how well the broad philosophy of the
course has stood the test of time. This may require a specific question about
attitudes rather than objective evidence such as employment history, salary,
promotion etc - but current employment, if in a senior management position
(either in or out of OHS) may be evidence of the durability of the Course. So
it is important to relate successful objective outcomes with current perceptions
of the value of the course.

Also shows how long students took to complete the Course

Q 2 Are you female/male?

The M/F ratio can be determined, whether it has changed and whether there are
gender differences in experiences and outcomes. The literature survey indicated
some aspects of family life generally affected some females more than males. There may be something to be found about why women choose or do not choose this Course. There may be a difference in attitudes to various aspects of the study Aim and Objectives.

Q 3 Age on entry?

Response will determine if the average age is declining, as the pool of experienced practitioners who previously had no opportunity to enrol in such a course is reduced. Implications related to Question 10 The Course may, because of its specialised format, be meeting the needs of particular older age groups ie relate to Q 14 Reasons for undertaking this course

Q. 4 Years experience in OHS at Commencement?

Responses would show students prior experience in the OHS field. Responses could be related to other questions; such as whether expectations were met. Experienced students may differ on other characteristics, compared to, for example, those who are continuing on after a full time undergraduate course. Literature indicated mature age learning characteristics such as context and motivation This question was also needed to help establish a profile of the student sample. Responses could be significant for Course marketing if compared with Q.11 "Age on entry" The reasons for undertaking course may have a relationship with the "meeting needs" part of the Aim. e.g. Those with less OHS experience, may place a higher value on the interaction with experienced others.

Q 5 Prior qualifications
Responses can be used to: examine special entry ratio; relate to completion rate; relate to assessment of academic difficulty in particular units or workload and also expectations. May be directly related to the Course objectives. Since it is a post graduate course requiring considerable independent work off campus, students preparedness for this could be an important factor.

Q 6  Were you returning to study after a break?

Responses would indicate the proportion of "mature age" students with the associated learning characteristics identified in the literature survey. Literature survey indicated students returning after a break experienced some short term difficulties in technical subjects.

Q 7  Where were you living at commencement of the Course?

The introduction of alternative courses may have affected supply of students from particular locations. Question 8 relates to Objective (ii) concerning which Course aspects students find attractive, so responses may also show if students were choosing Ballarat despite closer alternatives. Would also show to what extent Course is meeting local needs.

Q 8  Was the Course the only one available to you at the time?

This was a key determinant in students selection of the Course and possibly their perceptions of its value to them, and overall quality.

Q 9  Are alternative Courses available now?
With Question 8 this could help show whether more recent students are choosing the course on non geographic basis eg reputation or block release.

Q 10 Level of employer support.

This relates to barriers to completion and outcome efficiency. Course costs, including accommodation and also effect of time taken on individuals recreation leave can relate to family support. May be a major factor in facilitating people undertaking the Course. Employer support, including workplace resources; and employer attitudes to absences and benefits to the employer of work related projects is related to the specific nature of the Ballarat Course compared to alternative courses.

Q. 11 Size of organisation at commencement of course and now?

Higher representations from larger organisations was expected. This question could relate to the Aim, if it was assumed larger organisations were more demanding of adaptive strategic solutions than are smaller organisations.

Answer may be important to supplement those in Q 14 "Reasons for undertaking Course otherwise probably just confirms graduates mainly in larger organisations. Shows where graduates employment prospects are and with Q. 5.allows changes in organisation size related to doing the Course to be detected.

Smaller organisations may not be able to release people for six weeks per year.

Q.12..Employment industry at commencement and now?
Responses would show which industries students are drawn from eg there could be a high representation from government organisations, hospitals or mining. This mix could be changing with time. Perhaps the Course caters more to the needs of some, eg mining employees from afar can only study in the format offered or because of the close association between Ballarat University and the mining industry. It may not be seen to cater adequately for other industries. Course may be more relevant to people in remotely located industries.
Responses would show where graduates are employed currently. Perhaps the Course prepares people for some industries better than others; or perhaps it's graduates are better accepted by some employers. Perhaps completion of the Course widens employment opportunities.

Q 13 Which reasons influenced you to start the Course?

Important to find how graduates reasons for undertaking the Course relate to the act of choosing Ballarat Course rather than an alternative. Responses will help to define target group and how to reach them. Need to be able to relate "reasons" with "Course aim" and Objectives (i) and (ii). ie what needs are being met.

Q 14 Did the Course provide adequate technical knowledge and management ideas?

Has Course content met graduates needs?

Q 15 What were the three most useful technical skills from the course?

How effective was the learning experience. How did what was retained and useful to graduates relate to the Course aims and objectives. Are they an essential component of a post graduate course. With Question 16 addresses the issue of
practical v theoretical (and short term and long term benefits) and their relative emphasis in a post grad course.

Q 16 What were the three most useful ideas from the Course
Similar to Q 16

Q 17 To what extent did your employer use your new skills and ideas?

Related to employer acceptance of Course.
Indicator of whether Course is meeting both graduate skills and employer needs.
Relates to importance of Course aim for graduates to be able to argue the OHS case.
Are employers able to effectively use graduates skills / knowledge.
May raise the question of whether some parts of the course are too sophisticated for employers needs.

Q 18 To what extent do you agree with the following statements?

This question sought to determine how well the Course met graduates professional development needs.
One question directly asked about overall Course quality
One question sought to determine whether the Course was too theoretical and abstract to determine if this aspect was meeting students needs.

Q 19 Which factors gave you problems during the Course?
A number of Course related factors were known to have affected some students. This question sought to measure how widespread these difficulties might be since they could be barriers to completion and affect quality of learning. Specifically it was relevant to know whether students expectations were being met and whether items like course administration were a major problem.

Q 20 How do you value the following aspects of the Course?

These questions sought to define the Ballarat Course experience for students particularly their attitudes to the Course format and the way they valued aspects of the Courses inherent characteristics such as the on campus sessions.

Graduates are asked to place values on a number of non academic course aspects directly related to course format. One question is specifically about course format of block release and assignment format. Others relate to how well the course meets needs eg combining course assignments with work projects; others are incidental eg development of a professional network.

Q 21 Job experience after starting the Course?

Responses are an indicator of how well the Course has met graduates needs in gaining improved employment outcomes and also a check on whether its own goals can be justified by end results. ie graduates may be able to do the things the Course trains them for but employers, collectively or individually, may not allow this to happen.
Q22  What is your current employment situation?

This is an indicator of whether the graduates are practising OHS practitioners and whether they are in positions of influence where they are able to apply their acquired post graduate skills.

Q23  In your present job which occupy more than 10% of your time

These items relate closely to the Course Objectives. They are the essential elements of a managerial and systems approach to OHS.

Q24 (a) Which OHS functions do you perform at least monthly?

The functions queried include items known to be part of some OHS practitioners functions but not necessarily covered in the Course experience of all graduates. Comments should provide information on whether what the Course is providing is meeting graduates needs and allow identification of any gaps.

Q 24(b) Any further comments or clarifications?

This question allows graduates to enlarge on the specific responses of earlier questions and express in their own words what are key issues for them. Either a broad view or strongly felt aspects regarding the Course could be expressed
Tables and statistics required
APPENDIX F

Tables and Statistics required

While each of the questions was developed to elicit specific information to form the data Numerical data were to be processed in several ways to provide results

1. Frequency Tables

Inspection of the Tables would allow calculation of percentages and rank ordering of responses

Q.1
Q.2
Q.3
Q.4
Q.5
Q.6
Q.7
Q.8
Q.9
Q.10
Q.11
Q.12
Q.13
Q.14
Q.17
2 Split sample tests - By splitting the sample into two roughly equal groups before and after a particular point in time, differences on a number of characteristics can be tested by using a chi squared test. Comparison between the two groups would indicate changes. eg.

Q1 x Q2 Males vs females over time (chi sq.)
Q1 x Q4 Experience changing with time (chi sq)
Q1 x Q3 Age changing with time (chi sq)
Q1 x Q5 Entry quails changing with time (chi sq)
Q1 x Q7 Locality changing with time (chi sq)
(This could lead to investigating Q7, Q8 & Q9 to see if introduction of alternative courses has reduced Nos from some States).
Cross Tabulations

The Questions were designed to produce data about related characteristics identified in the development of topics and issues forming the basis of the questions. To maximise the usefulness of the data each question was scanned against each other question to identify possible correlations which could assist analysis of the Aim and Objectives.

The following pairs of questions were expected to provide information related to the Aim and Objectives. In these cases the responses were to be matched at an individual level and the relationships tested to establish connections.

Not all tests were required or possible when the raw data was obtained and analysed.

Q1 x Q15  Relates experience to whether course matched expectations

Q2 x Q13  Relates gender to reasons for doing the course
Q2 x Q19  Relates gender to course problems (eg family commitments; requirement to attend on campus)
Q2 x Q18  Relates gender to professional development skills
Q2 x Q19  Relates gender to problems experienced
Q4 x Q15  Relates age to whether expectations were met
Q4 x Q20  Relates age to course problems
Q4 x Q18  Relates prior education to higher academic requirements
Q4 x Q21 Relates age attitude to non academic aspects of the Course
Q5 x Q20 Relates academic background to course problems eg. Course difficulty
Q6 x Q19 Relates time away from study to Course problems
Q10 x Q11 Relates level of support to size of organisation
Q10 x Q12 Relates level of support to industry Chi
Q10 x Q20 Relate level of support to problems chi
Q22 x Q24 To check whether it is meeting employer needs
Q11 x Q25 x Q23 Relates size of organisation, employment category and scope of position (See which groups Course is catering for)
Q.12 x Q.14 Relates adequacy of tech and management ideas to industry in which graduates are currently employed
Q.13 x Q14 Relates reasons for doing course with outcomes
Q13 x Q19
Q.13 x Q21
Q.15 x Q.16 Relates to relative importance to graduates eg technical and management skills
Q.23 x Q.25 Relates job type to course content
Appendix G

Checklist responses to Questionnaire
Appendix G

Summary of Checklist Data from Questionnaire

A total of 156 responses were received and coded using Excell spreadsheet. Responses to each question have been totalled and are tabulated below.

Question 1 asked: In which year did you commence the Course and In which year did you complete the Course? In 100 cases or 64.1% students completed the Course in the minimum time of two years. Year of commencement has been used since this can be compared to known enrolments for statistical purposes.

Question 2 asked Are you Female / Male?

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Question 4

![Bar chart showing different age groups (25-35, 35-45, 45-55, 55+) with varying heights.]

Question 5

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![Bar chart showing different educational levels (None, Trade/TAFE, Assoc. Dip., Degree, Postgrad) with varying heights.]

Question 6

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State of origin

Questions 8 and 9

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</table>

### Question 12 (a) and (b) Employment Industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>At commencement</th>
<th>Now</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agric, Forestry, Fishing</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Mining</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>36</td>
<td>27</td>
</tr>
<tr>
<td>Elec, Gas &amp; Water</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Construction</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Trade</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Transport &amp; Storage</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Fin &amp; Bus Services</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Public Administration</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>Com. Serv. (inc Health)</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td>Recreation</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>36</td>
<td>56</td>
</tr>
</tbody>
</table>

### Question 13 Reasons for starting Course

<table>
<thead>
<tr>
<th>Reason</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Career advancement</td>
<td>104</td>
</tr>
<tr>
<td>Seeking a new career</td>
<td>115</td>
</tr>
<tr>
<td>Employer requirement</td>
<td>22</td>
</tr>
<tr>
<td>Desire to increase job satisfaction</td>
<td>73</td>
</tr>
<tr>
<td>Need for more skills/knowledge of OHS</td>
<td>127</td>
</tr>
<tr>
<td>Reputation of the Ballarat Course</td>
<td>98</td>
</tr>
<tr>
<td>Block release study format</td>
<td>69</td>
</tr>
<tr>
<td>Geographic location of Ballarat</td>
<td>13</td>
</tr>
<tr>
<td>Only OHS course available</td>
<td>23</td>
</tr>
<tr>
<td>To gain a tertiary qualification</td>
<td>59</td>
</tr>
<tr>
<td>To fulfil a personal goal</td>
<td>69</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
</tr>
</tbody>
</table>

### Question 14 (a) and (b)

<table>
<thead>
<tr>
<th>Category</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical knowledge</td>
<td>134</td>
<td>20</td>
</tr>
<tr>
<td>Management ideas</td>
<td>135</td>
<td>19</td>
</tr>
</tbody>
</table>
Question 15  See free response summary Appendix

Question 16  See free response summary Appendix

**Question 17** To what degree did your employer use your new skills?

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>Negligible</th>
<th>Moderate</th>
<th>Frequent</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>25</td>
<td>52</td>
<td></td>
<td>64</td>
</tr>
</tbody>
</table>

**Question 18** To what extent do you agree with the following statements?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed problem solving skills</td>
<td>31</td>
<td>86</td>
<td>18</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Sharpened analytical skills</td>
<td>42</td>
<td>92</td>
<td>10</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Developed team abilities</td>
<td>16</td>
<td>72</td>
<td>27</td>
<td>33</td>
<td>4</td>
</tr>
<tr>
<td>Increased confidence in unfamiliar problems</td>
<td>40</td>
<td>85</td>
<td>18</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Overly theoretical and abstract</td>
<td>4</td>
<td>24</td>
<td>11</td>
<td>92</td>
<td>22</td>
</tr>
<tr>
<td>Helped in planning own work</td>
<td>12</td>
<td>76</td>
<td>27</td>
<td>34</td>
<td>5</td>
</tr>
<tr>
<td>Quality overall satisfactory</td>
<td>45</td>
<td>93</td>
<td>7</td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>

**Question 19** Which of the following factors gave you problems during the Course?

<table>
<thead>
<tr>
<th>Factor</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Work commitments</td>
<td>84</td>
</tr>
<tr>
<td>Family commitments</td>
<td>82</td>
</tr>
<tr>
<td>Financial commitments</td>
<td>22</td>
</tr>
<tr>
<td>On campus workload</td>
<td>17</td>
</tr>
<tr>
<td>Off campus workload</td>
<td>84</td>
</tr>
<tr>
<td>Inability to attend on campus sessions</td>
<td>2</td>
</tr>
<tr>
<td>Course did not meet expectations</td>
<td>11</td>
</tr>
<tr>
<td>Changed priorities /relevance due to employment circumstances</td>
<td>7</td>
</tr>
<tr>
<td>Block release mode</td>
<td>2</td>
</tr>
<tr>
<td>Course administration (Course info, assignment processing)</td>
<td>31</td>
</tr>
<tr>
<td>Ill health</td>
<td>8</td>
</tr>
<tr>
<td>Specific subjects</td>
<td>15</td>
</tr>
</tbody>
</table>
### Question 20
How do you value the following aspects of the Course?

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Very high</th>
<th>High</th>
<th>Low</th>
<th>Very low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using workplace problems in Course assignments</td>
<td>90</td>
<td>57</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Working with others on on campus assignments</td>
<td>68</td>
<td>66</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>Social aspects of on campus sessions</td>
<td>64</td>
<td>71</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Requirement to attend on campus sessions</td>
<td>75</td>
<td>74</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Development of a professional network</td>
<td>83</td>
<td>49</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Convenience of block release mode</td>
<td>77</td>
<td>68</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Interaction with other OHS practitioners on campus</td>
<td>85</td>
<td>61</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Course administration</td>
<td>13</td>
<td>93</td>
<td>42</td>
<td>3</td>
</tr>
<tr>
<td>Interaction with teaching /support staff</td>
<td>42</td>
<td>86</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>Campus environment (Accommodation, grounds etc)</td>
<td>25</td>
<td>96</td>
<td>29</td>
<td>3</td>
</tr>
<tr>
<td>Local environment (Buninyong, Ballarat)</td>
<td>26</td>
<td>73</td>
<td>44</td>
<td>9</td>
</tr>
</tbody>
</table>

### Question 21
After starting the Course did you have a change of job

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>99</td>
<td>55</td>
</tr>
</tbody>
</table>

If Yes was the first change of job

<table>
<thead>
<tr>
<th>During the Course</th>
<th>Within 1 yr of completing</th>
<th>Within 2 years of completing</th>
<th>Within 3 years of completing</th>
<th>&gt; 3 years after comp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>30</td>
<td>18</td>
<td>7</td>
<td>13</td>
</tr>
</tbody>
</table>

If Yes did the change significantly improve your

<table>
<thead>
<tr>
<th>Salary</th>
<th>Status</th>
<th>Job satisfaction</th>
<th>Career prospects</th>
</tr>
</thead>
<tbody>
<tr>
<td>54</td>
<td>49</td>
<td>67</td>
<td>56</td>
</tr>
</tbody>
</table>

### Question 22
What is your current employment situation?

- Senior manager: 28
- Middle manager: 37
- Supervisor: 4
- Health and Safety practitioner: 30
- Health and safety representative: 2
- Health and safety consultant: 52
- Health and safety manager: 36
- Not currently employed: 11
Question 23 In your current job which of the following occupy more than 10% of your time:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard prediction</td>
<td>47</td>
</tr>
<tr>
<td>Hazard identification</td>
<td>87</td>
</tr>
<tr>
<td>Hazard</td>
<td>91</td>
</tr>
<tr>
<td>Risk prediction</td>
<td>57</td>
</tr>
<tr>
<td>Risk estimation</td>
<td>54</td>
</tr>
<tr>
<td>Risk control</td>
<td>88</td>
</tr>
<tr>
<td>Arguing the case for OHM with senior managers</td>
<td>69</td>
</tr>
<tr>
<td>Advising senior managers on legal aspects of OHS</td>
<td>101</td>
</tr>
<tr>
<td>Initiation of OHS strategies</td>
<td>116</td>
</tr>
</tbody>
</table>

Question 24 Which functions of OHS positions do you personally use at least monthly in your job?

<table>
<thead>
<tr>
<th>Function</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers compensation</td>
<td>69</td>
</tr>
<tr>
<td>Other insurance</td>
<td>25</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>55</td>
</tr>
<tr>
<td>Injury rehabilitation</td>
<td>64</td>
</tr>
<tr>
<td>Welfare</td>
<td>21</td>
</tr>
<tr>
<td>Training in OHS</td>
<td>123</td>
</tr>
<tr>
<td>Health promotion</td>
<td>49</td>
</tr>
<tr>
<td>Disease prevention</td>
<td>43</td>
</tr>
<tr>
<td>Loss control</td>
<td>80</td>
</tr>
<tr>
<td>Risk management</td>
<td>113</td>
</tr>
<tr>
<td>Security</td>
<td>28</td>
</tr>
<tr>
<td>Emergency procedures</td>
<td>89</td>
</tr>
<tr>
<td>Disaster control/planning</td>
<td>64</td>
</tr>
<tr>
<td>Environmental issues</td>
<td>73</td>
</tr>
</tbody>
</table>
Statistical tests carried out
Appendix H

Summary of statistical tests for significance

Q 3 Has there been a significant shift in the age distribution?

Equality of more than two proportions

<table>
<thead>
<tr>
<th>Age range on commencement</th>
<th>25-35</th>
<th>35-45</th>
<th>45-55</th>
<th>55+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>79-86</td>
<td>1</td>
<td>18</td>
<td>34</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>87-92</td>
<td>5</td>
<td>31</td>
<td>35</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>6</td>
<td>49</td>
<td>69</td>
<td>26</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>s</th>
<th>70</th>
<th>85</th>
<th></th>
<th></th>
<th>155</th>
</tr>
</thead>
<tbody>
<tr>
<td>e</td>
<td>2.70967742</td>
<td>22.12903</td>
<td>31.16129</td>
<td>11.74194</td>
<td>2.258065</td>
</tr>
<tr>
<td>3.29032258</td>
<td>26.87097</td>
<td>37.83871</td>
<td>14.25806</td>
<td>2.741935</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>s</th>
<th>0.770432</th>
<th>0.258599</th>
<th>0.134793</th>
<th>1.343779</th>
</tr>
</thead>
<tbody>
<tr>
<td>e</td>
<td>0.8883618</td>
<td>0.634473</td>
<td>0.212964</td>
<td>0.111006</td>
</tr>
</tbody>
</table>

\[X^2 = 6.539773\]

Refer to chi sq tables, df = 4
5% critical value of chi sq = 9.49 - do not reject Ho at 5% level;
10% critical value of chi sq = 7.78 - Do not reject Ho at 10% level.

Conclude evidence shows there is no significant difference between the groups.
Collapsing the Table

Equality of two proportions

<table>
<thead>
<tr>
<th></th>
<th>Up to 35</th>
<th>35 and over</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>79-86</td>
<td>19</td>
<td>51</td>
<td>70</td>
</tr>
<tr>
<td>87-92</td>
<td>36</td>
<td>49</td>
<td>85</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>55</td>
<td>100</td>
<td>155</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1.37247591</th>
<th>0.754862</th>
<th>1.13027428</th>
<th>0.621651</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[X^2 = 3.8792628\]
Refer to chi squ tables, df = 1
5% critical level of chi squ = 3.84 - Reject Ho at 5% level.
Conclude there has been a significant change in the age distribution

Q 4
Has there been a change in the level of prior OHS experience of students commencing the Course?

Equality of more than two proportions

<table>
<thead>
<tr>
<th>Previous OHS experience in years</th>
<th>0</th>
<th>0-5</th>
<th>5-10</th>
<th>10-15</th>
<th>&gt;15</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>79 - 86</td>
<td>0</td>
<td>9</td>
<td>24</td>
<td>21</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>e</td>
<td>10.4545455</td>
<td>28.18182</td>
<td>18.63636</td>
<td>7.727273</td>
<td>5</td>
</tr>
<tr>
<td>87 - 92</td>
<td>0</td>
<td>14</td>
<td>38</td>
<td>20</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>e</td>
<td>12.5454545</td>
<td>33.81818</td>
<td>22.36364</td>
<td>9.272727</td>
<td>6</td>
</tr>
<tr>
<td>Totals</td>
<td>23</td>
<td>62</td>
<td>41</td>
<td>17</td>
<td>11</td>
<td>154</td>
</tr>
<tr>
<td></td>
<td>0.20237154</td>
<td>0.620528</td>
<td>0.299778</td>
<td>0.209626</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.16864295</td>
<td>0.517107</td>
<td>0.249815</td>
<td>0.174688</td>
<td>0.665667</td>
<td></td>
</tr>
</tbody>
</table>

\[ x^2 = 3.909223 \]

Refer to chi squ tables, df = 4 ;
5% critical value chi squ = 9.49 Accept Ho at this level
Conclude no significant change

<table>
<thead>
<tr>
<th>Up to 5 years</th>
<th>Over 5 years</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>79-86</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>e 38.6363636</td>
<td>31.36364</td>
<td></td>
</tr>
<tr>
<td>87-92</td>
<td>0</td>
<td>52</td>
</tr>
<tr>
<td>e 46.3636364</td>
<td>37.63636</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>85</td>
<td>69</td>
</tr>
<tr>
<td>Variance</td>
<td>0.82224599</td>
<td>1.012912</td>
</tr>
<tr>
<td></td>
<td>0.68520499</td>
<td>0.844093</td>
</tr>
</tbody>
</table>

\[ x^2 = 3.36445581 \]

Refer to chi squ tables, df = 1
5% critical level of chi squ = 3.84
Accept Ho at 5% level
10% critical level of chi squ = 2.71 - Reject Ho at this level
Conclude there has been a significant shift in previous experience into Course at 10%

Q 5
Has there been a significant change in the distribution of previous education levels

Equality of more than two proportions

<table>
<thead>
<tr>
<th>Previous highest post - secondary qualification</th>
<th>None</th>
<th>Trade /Tafe</th>
<th>Assoc Dip</th>
<th>Degree</th>
<th>Post Grad</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>79-86</td>
<td>4</td>
<td>26</td>
<td>11</td>
<td>14</td>
<td>12</td>
<td>67</td>
</tr>
<tr>
<td>e 5.04794521</td>
<td>5.04794521</td>
<td>21.56849</td>
<td>11.0137</td>
<td>19.27397</td>
<td>10.09589</td>
<td></td>
</tr>
<tr>
<td>87-92</td>
<td>7</td>
<td>21</td>
<td>13</td>
<td>28</td>
<td>10</td>
<td>79</td>
</tr>
<tr>
<td>e 5.95205479</td>
<td>5.95205479</td>
<td>25.43151</td>
<td>12.9863</td>
<td>22.72603</td>
<td>11.90411</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>11</td>
<td>47</td>
<td>24</td>
<td>42</td>
<td>22</td>
<td>146</td>
</tr>
<tr>
<td>e 0.21755172</td>
<td>0.21755172</td>
<td>0.910506</td>
<td>1.7E-05</td>
<td>1.443127</td>
<td>0.35912</td>
<td></td>
</tr>
<tr>
<td>e 0.18450589</td>
<td>0.18450589</td>
<td>0.772202</td>
<td>1.45E-05</td>
<td>1.223918</td>
<td>0.30457</td>
<td></td>
</tr>
</tbody>
</table>

$X^2 = 5.415531$

Refer to chi squ tables, df = 4
5% critical level of chi squ = 9.49. Accept Ho at this level
10% critical level of chi squ. = 7.78 Accept Ho at this level
Conclude no significant difference between the groups
Q 6
Has there been a change in the pattern of returning to study after a break

Equality of more than two proportions

Length of study break in years

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>Upto 5</th>
<th>5 to 10</th>
<th>10 to 15</th>
<th>Over 15</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>79-86</td>
<td>0</td>
<td>7</td>
<td>27</td>
<td>10</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>87-92</td>
<td>0</td>
<td>15</td>
<td>30</td>
<td>15</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12.7943262</td>
<td>33.14894</td>
<td>14.53901</td>
<td>12.79433</td>
<td>8.723404</td>
</tr>
<tr>
<td>Totals</td>
<td>22</td>
<td>57</td>
<td>25</td>
<td>22</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

0.52847807 0.415738 0.020315 0.848201 1.710494
0.38024642 0.299129 0.014617 0.610291 1.230721

\[ X^2 = 6.05823 \]

Refer to Chi squ. Tables, df = 4
At 5% critical level, chi squ = 9.49. Accept Ho
Conclude no significant difference

Equality of two proportions

Length of study break in years

<table>
<thead>
<tr>
<th></th>
<th>Up to 5</th>
<th>Over 5</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>79-86</td>
<td>0</td>
<td>34</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>38.0971429</td>
<td>20.90286</td>
<td></td>
</tr>
<tr>
<td>87-92</td>
<td>0</td>
<td>79</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>74.9028571</td>
<td>41.09714</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>113</td>
<td>62</td>
<td>175</td>
</tr>
</tbody>
</table>

Variance
0.44062568 0.803076
0.22411134 0.408461
1.87627385

Refer to chi squ tables, df = 1
10% critical value of chi squ = 2.71. Accept Ho
Conclude no change in pattern of returning from break
Q 7
Has there been a significant shift in the proportion of students coming from interstate?

<table>
<thead>
<tr>
<th>Equality of two proportions</th>
<th>Vic</th>
<th>Non Vic.</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>79 -86</td>
<td>27</td>
<td>42</td>
<td>69</td>
</tr>
<tr>
<td>e</td>
<td>31.1176471</td>
<td>37.88235</td>
<td></td>
</tr>
<tr>
<td>87 -92</td>
<td>42</td>
<td>42</td>
<td>84</td>
</tr>
<tr>
<td>e</td>
<td>37.8823529</td>
<td>46.11765</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>69</td>
<td>84</td>
<td>153</td>
</tr>
</tbody>
</table>

Variance 0.54486823 0.44757 0.44757033 0.367647

\[ X^2 = 1.80765595 \]

Refer to chi squ tables, df = 1

10% critical level of chi squ = 2.71. Accept Ho at 10% level

Q11 (a) & 11 (b)
Is the shift to smaller organisations significant?

<table>
<thead>
<tr>
<th>Equality of more than two proportions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of employees</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>-50 50-100 100-500 500-1000 Over 1000 Totals</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Then 0</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>7 4 39 17 86 153</td>
</tr>
<tr>
<td>e 18.030303 4.121212 37.09091 17 76.75758</td>
</tr>
<tr>
<td>Now 0</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>28 4 33 16 63 144</td>
</tr>
<tr>
<td>e 16.969697 3.878788 34.90909 16 72.24242</td>
</tr>
<tr>
<td>Totals</td>
</tr>
<tr>
<td>6.74795009 0.003565 0.098262 0 1.112886</td>
</tr>
<tr>
<td>7.16969697 0.003788 0.104403 0 1.182441</td>
</tr>
</tbody>
</table>

Answer \[ X^2 = 16.42299 \]

Refer to chi squ tables, df = 4

5% critical level for chi squ = 9.49. Reject Ho at 5% level
1% critical level for chi squ = 13.28 Reject Ho at 1% level

Conclude there has been a shift in organisation size
Q14  Has the support for technical skills occurred by chance. i.e. \( p = 0.5 \)

chi squ goodness of fit test -

Ho: \( p = \)

<table>
<thead>
<tr>
<th>Adequate technical skills?</th>
<th>Obs</th>
<th>Exp ( (O-E)^2/E )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>134</td>
<td>77</td>
</tr>
<tr>
<td>No</td>
<td>20</td>
<td>77</td>
</tr>
</tbody>
</table>

sum 84.38961

Refer to chi squ table - 5% critical value for df = 1 is 3.84
0.5% crit 7.88
Reject Ho at 5% level
Reject Ho at 0.5% level
Conclude results not by chance

Q15  Has the support for management ideas occurred by chance. i.e. \( p = 0.5 \) Figures are almost identical so accept previous conclusion

Q14  Was there a change in the proportion who perceived (a) Technical knowledge and (b) Management ideas to be adequate.

Equality of two proportions

<table>
<thead>
<tr>
<th>Adequate technical skills</th>
<th>Yes</th>
<th>No</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>79</td>
<td>86</td>
<td>165</td>
</tr>
<tr>
<td></td>
<td>61.7792208</td>
<td>9.220779</td>
<td></td>
</tr>
<tr>
<td>79 - 86</td>
<td>64</td>
<td>7</td>
<td>71</td>
</tr>
<tr>
<td>e</td>
<td>92</td>
<td>13</td>
<td>105</td>
</tr>
<tr>
<td>87 - 92</td>
<td>70</td>
<td>13</td>
<td>83</td>
</tr>
<tr>
<td>e</td>
<td>72.2207792</td>
<td>10.77922</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>134</td>
<td>20</td>
<td>154</td>
</tr>
</tbody>
</table>

Variance 0.07983041 0.534864
0.06828866 0.457534

\[ X^2 = 1.14051683 \]

Refer to chi squ tables, df = 1.
5% critical value of chi squ = 3.84- Accept Ho at 5% level
Conclude no change in groups attitudes
Was there a change in those who perceived management ideas to be adequate

Equality of two proportions

<table>
<thead>
<tr>
<th>Adequate management skills</th>
<th>Yes</th>
<th>No</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>79 - 86 O</td>
<td>53</td>
<td>8</td>
<td>61</td>
</tr>
<tr>
<td>e 52.9513889</td>
<td>72</td>
<td>11</td>
<td>83</td>
</tr>
<tr>
<td>87 - 92 O</td>
<td>72.0486111</td>
<td>10.95139</td>
<td>144</td>
</tr>
<tr>
<td>Variances</td>
<td>4.4627E-05</td>
<td>0.000294</td>
<td>3.2798E-05</td>
</tr>
<tr>
<td>$X^2$</td>
<td>0.0005868</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Refer to chi squ tables, $df = 1$

5% critical value of Chi squ = 3.84. Accept Ho at 5% level

Conclude no chang in attitude towards adequacy of management ideas.

Q 18

<table>
<thead>
<tr>
<th>Problem</th>
<th>O</th>
<th>E</th>
<th>O-E</th>
<th>$\Sigma(O-E)^2/E$</th>
<th>$X^2$</th>
<th>Ho</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem solving</td>
<td>116</td>
<td>67</td>
<td>49</td>
<td>70.16</td>
<td>3.84</td>
<td>accept</td>
</tr>
<tr>
<td>Analytical skills</td>
<td>18</td>
<td>67</td>
<td>-49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team abilities</td>
<td>134</td>
<td>72</td>
<td>62</td>
<td>106.8</td>
<td>3.84</td>
<td>accept</td>
</tr>
<tr>
<td>Unfamiliar problems</td>
<td>10</td>
<td>72</td>
<td>-62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over theor. /abstract</td>
<td>88</td>
<td>63</td>
<td>25</td>
<td>19.84</td>
<td>3.84</td>
<td>accept</td>
</tr>
<tr>
<td>Planning</td>
<td>154</td>
<td>68</td>
<td>57</td>
<td>95.6</td>
<td>3.84</td>
<td>accept</td>
</tr>
<tr>
<td>Quality</td>
<td>138</td>
<td>74</td>
<td>64</td>
<td>110.8</td>
<td>3.84</td>
<td>accept</td>
</tr>
</tbody>
</table>

All significant at 99.0% confidence level
(f) Has there been a change in the proportion who thought the Course was overtly theoretical and abstract.

Equality of two proportions

<table>
<thead>
<tr>
<th></th>
<th>Agree</th>
<th>Disagree</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>79 -86 0</td>
<td>12</td>
<td>53</td>
<td>65</td>
</tr>
<tr>
<td>e 12.8169014</td>
<td>52.1831</td>
<td></td>
<td></td>
</tr>
<tr>
<td>87 -92 0</td>
<td>16</td>
<td>61</td>
<td>77</td>
</tr>
<tr>
<td>e 15.1830986</td>
<td>61.8169</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>28</td>
<td>114</td>
<td>142</td>
</tr>
</tbody>
</table>

Variance

- 0.05206624
- 0.012788
- 0.04395202
- 0.010795

\[
X^2 = 0.1196017
\]

Refer to chi squ tables, df =1.

5% critical level of chi squ =3.84. Accept Ho at 5% level

Conclude there was no difference in attitudes between the two groups
Q 18 (f) Was there a change in the proportion who considered the quality overall satisfactory?

Equality of two proportions

<table>
<thead>
<tr>
<th>Quality overall satisfactory</th>
<th>Agree</th>
<th>Disagree</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>79 - 86 0</td>
<td>63</td>
<td>4</td>
<td>67</td>
</tr>
<tr>
<td>e 62.8979592 4.102041</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>87 - 92 0</td>
<td>75</td>
<td>5</td>
<td>80</td>
</tr>
<tr>
<td>e 75.1020408 4.897959</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>138</td>
<td>9</td>
<td>147</td>
</tr>
</tbody>
</table>

Variance 0.00016554 0.002538
0.00013864 0.002126
0.00496836

Refer to chi squ tables, df = 1
5% critical value of chi squ = 3.84. Accept Ho at 5% level.
Conclude no difference in group's attitudes to quality

Q20
Is the proportion of people rating local environment high significant?

chi squ
goodness of fit
test - Ho: p = 0.5

<table>
<thead>
<tr>
<th>Obs</th>
<th>Exp</th>
<th>O-E</th>
<th>(O-E)^2/E</th>
</tr>
</thead>
<tbody>
<tr>
<td>High value for local environment</td>
<td>99</td>
<td>76</td>
<td>23 6.960526</td>
</tr>
<tr>
<td>Low value for local environment</td>
<td>53</td>
<td>76</td>
<td>-23 6.960526</td>
</tr>
<tr>
<td>sum</td>
<td>13.92105</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Refer to chi squ table - 5% critical value for 1 df = 3.84
Reject Ho at 5% level
Conclude results not by chance
1% critical value for 1 df = 6.63
Reject Ho at 1% level also
Q 20 Is the proportion of people rating Course administration high significant?

chi squ
goodness of fit
test · Ho: p =

<table>
<thead>
<tr>
<th></th>
<th>Obs</th>
<th>Exp</th>
<th>O-E</th>
<th>(O-E)^2/E</th>
</tr>
</thead>
<tbody>
<tr>
<td>High value for Course administration</td>
<td>106</td>
<td>75</td>
<td>31</td>
<td>12.81333</td>
</tr>
<tr>
<td>Low value for Course administration</td>
<td>44</td>
<td>75</td>
<td>-31</td>
<td>12.81333</td>
</tr>
<tr>
<td>sum</td>
<td></td>
<td></td>
<td></td>
<td>25.62667</td>
</tr>
</tbody>
</table>

Refer to chi squ table -1 % critical value for 1 df = 6.63
Reject Ho at this level

Cross tabulations

Q2 xQ18 Is there a difference between females and males in attitudes towards the team development skills provided by the Course?

Equality of two proportions

<table>
<thead>
<tr>
<th>Team development</th>
<th>Female</th>
<th>Male</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>12</td>
<td>38</td>
<td>50</td>
</tr>
<tr>
<td>No</td>
<td>18</td>
<td>74</td>
<td>92</td>
</tr>
<tr>
<td>Totals</td>
<td>30</td>
<td>112</td>
<td>142</td>
</tr>
</tbody>
</table>

Variance

\[
\begin{align*}
\text{Variance} &= 0.19538028 \quad 0.052334 \\
& \quad 0.10618494 \quad 0.028442 \\
& \quad 0.38234161
\end{align*}
\]

Refer to chi squ tables, df = 1
% critical level for chi squ = 3.84. Accept Ho at 5% level
Conclude no difference in female and male attitudes on this item.
Q4 xQ18  Is there a relationship between level of prior post secondary education and attitude to whether the Course was overly theoretical and abstract?

Equality of two proportions

<table>
<thead>
<tr>
<th>Too theoretical and abstract</th>
<th>Agree</th>
<th>Disagree</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade/Tafe</td>
<td>12</td>
<td>38</td>
<td>50</td>
</tr>
<tr>
<td>Higher</td>
<td>18</td>
<td>74</td>
<td>92</td>
</tr>
<tr>
<td>Totals</td>
<td>30</td>
<td>112</td>
<td>142</td>
</tr>
<tr>
<td>Variance</td>
<td>0.19538028</td>
<td>0.052334</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.10618494</td>
<td>0.028442</td>
<td></td>
</tr>
</tbody>
</table>

\[ X^2 = 0.38234161 \]

Refer to chi squ tables, df = 1.
5% critical level of chi squ = 3.84. Accept Ho at 5% level.
Conclude no difference in attitude on this item.

Q 6x Q 19  Is there a relationship between length of gap since completing post secondary study and whether an off campus workload problem was experienced?

Equality of two proportions.

<table>
<thead>
<tr>
<th>Study gap</th>
<th>-5years</th>
<th>&gt; 5 years</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>41</td>
<td>41</td>
<td>82</td>
</tr>
<tr>
<td>No</td>
<td>41</td>
<td>29</td>
<td>70</td>
</tr>
<tr>
<td>Totals</td>
<td>82</td>
<td>70</td>
<td>152</td>
</tr>
<tr>
<td>Variance</td>
<td>0.23684211</td>
<td>0.277444</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.27744361</td>
<td>0.325005</td>
<td></td>
</tr>
</tbody>
</table>

\[ X^2 = 1.11673469 \]

Refer to chi squ tables, df = 1.
5% critical value of chi squ = 3.84. Accept Ho.
Conclude study gap and difficulty with this item are unrelated
Q 13 x Q 14  Is there a difference in attitudes towards the skills the Course provided between those who gave skills acquisition as a reason for doing the Course and those who did not.

Equality of two proportions

<table>
<thead>
<tr>
<th></th>
<th>Adequate skills</th>
<th>Others</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill seekers</td>
<td>100</td>
<td>26</td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>95.1096774</td>
<td>30.89032</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>17</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>21.8903226</td>
<td>7.109677</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>117</td>
<td>38</td>
<td>155</td>
</tr>
</tbody>
</table>

Variance

\[
\begin{align*}
X^2 & = 5.48191261 \\
\text{Refer to chi squ tables, df} & = 1 \\
5\% \text{ critical level for chi squ} & = 3.28 - \text{Reject Ho} \\
\text{Conclude a larger proportion of skill seekers felt skills provided were adequate than others.}
\end{align*}

Q 13 x Q 19  Was there a relationship between Course reputation and whether skills provided were satisfactory

Equality of two proportions

<table>
<thead>
<tr>
<th></th>
<th>Successes</th>
<th>Failures</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reputation Yes</td>
<td>31</td>
<td>67</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td>27.3636364</td>
<td>70.63636</td>
<td></td>
</tr>
<tr>
<td>Reputation No</td>
<td>12</td>
<td>44</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>15.6363636</td>
<td>40.36364</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>43</td>
<td>111</td>
<td>154</td>
</tr>
</tbody>
</table>

Variance

\[
\begin{align*}
\text{Variance} & = 0.48323769, 0.1872, 0.84566596, 0.3276 \\
& = 1.84370417 \\
\text{Refer to chi squ table, df} & = 1 \\
5\% \text{ critical value of chi squ} & = 3.84 - \text{Accept Ho at 5\% level} \\
\text{Conclude no relationship between skills sought and skills gained}
\end{align*}
\]
Q13 X Q21  Was there a relationship between giving career as a reason for starting the Course and career outcomes

Equality of two proportions

<table>
<thead>
<tr>
<th>Career improvement</th>
<th>Job change</th>
<th>No change</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career sought</td>
<td>58</td>
<td>47</td>
<td>105</td>
</tr>
<tr>
<td>e</td>
<td>56.0472973</td>
<td>48.9527</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>21</td>
<td>22</td>
<td>43</td>
</tr>
<tr>
<td>e</td>
<td>22.9527027</td>
<td>20.0473</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>79</td>
<td>69</td>
<td>148</td>
</tr>
</tbody>
</table>

Variance

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.06803268</td>
<td>0.077892</td>
</tr>
<tr>
<td></td>
<td>0.16612631</td>
<td>0.190203</td>
</tr>
<tr>
<td></td>
<td>0.50225407</td>
<td></td>
</tr>
</tbody>
</table>

Refer to chi square tables, df = 1

5% critical level for chi square = 3.84. Accept Ho at 5% level

Conclude no difference in outcomes
Appendix I

Free responses to Questionnaire
Appendix I

Summary of free response data from Questionnaire

Q1
Q2
Q3

Q4  S85 YRS
    S86 PhD

Q5  s3 Cert in Mech Eng
    s50 Diploma
    s63 Cert Work study/ HR SAIT
    s72 Commercial pilots course
    s75 Diploma
    s77 Dip ME
    s79 half degree
    s90 SRN
    s109 Nursing
    s114 RAAF trade training qual not recog by civilian orgs
    s135 Nursing

Q6

Q7  s61 ACT

Q8  s34 No block release alternative
    s3 - "Grad Dip OHS Management"
    s4 - "QUT Grad Dip in OHS"
    s5 - "Ballarat was considered the best"
    s11 - "Not Block release -I was in a remote location"
    s14 - "Perth and just starting University of NSW"
    s20 - "The Course covered the subjects necessary in the specialised OHS"
    s23 - "Plus some paid study leave"
    s32 Certificate level in SA
    s48 Not locally or with the appropriate remote study arrangement
    s51 But not with UBs credibility
    s54 None as relevant
    s68 Not to the same standard as BCAE
    s82 TAFE Cert only
    s84 Many but did not suit work /domestic circumstances
    s90 Others available -none of equal interest to Ballarat
    s96 I would only have been interested in Block release course
    s97 Had commenced Grad Dip in SA in84
    s98 WAIT or Ballarat only
    s108 Certificate course
    s109 Wanted distance learning NOT 2 nights per week
s111  OH&S Assoc Dip 4yrs p/t
s113  Lacked the educational expertise of Ballarat, More related to environmental health
s126  Certificate at S Melb. Tech
s133  Possibly but not considered. Ballarat was employers preferred choice(Public Admin,Vic)
s138  Not within immediate locality (State)
s139  Prev commenced Assoc Dip ,Footscray Inst
s142  Not with same prac application and block release/assgt structure
s147  Swinburne
s156  Did not suit access or time of attendance

Q9
s48  not to the level involved ie cert course now available
s98  QIT Brisbane alternative now

Q 10
s3   "Employer paid for accommodation and meal expenses outside the scope of a Worksafe Study Award."
s5   "The bastards didn’t want to pay anything - I had to take Rec leave to attend (Aus Post)"
s8   "Also acquired Worksafe Scholarship"
s11  "Initially received support from Worksafe grant"
s16  "Leave with four weeks pay/yr - Remaining two weeks rec leave"
s20  "Employer Human Resource training program was of significant benefit to me..."
s28  "I Was the last employee to receive payment of fees for this Course"
s29  "Awarded Worksafe Scholarship for 1989"
s46  The airforce was very supportive
s48  Without employers support - time and financially it would have been extremely difficult to undertake the course
s66  Management were convinced to move with the times
s69  Full support
s71  Changed jobs first employer psych only
s76  Final year only for fees accom
s79  10 days paid study leave The rest A/L
s80  Total organisation support in accordance with company policy of training and personal development
s81  Some limitations though still generous time allowed
s82  My employer was very supportive
s83  Partial - 50% time, accom, meals
s89  Worksafe Scholarship in 2nd year paid travelling fees and books
s90  Unpaid leave only due to emp in two person consultancy. 2nd year no support as contract employee in manuf org.
s92  two weeks /yr paid study leave
s93  HECS not applicable 87/88
s95  lived in Ballarat at the time
s95  Unfortunately Im not involved in OHS any more
s96  Employer support was essential to doing the Course
s98  Co policy didn’t allow sponsorship, changed 1985
s109  Couldn’t have done course without employer support. Esp financial
I would have liked more but appreciate what I have now. (Holidays taken to attend on campus sessions.

(4/6 weeks leave with pay)

Worksafe grant

...financial strain immense.......self interest of management will not generate the necessary safety incentives such as seeking professional staff. They perceive they are threatened.

...fortunate to receive comprehensive employer support (RAAF)

I.w.pay for one session only

One session each year leave with pay

some payment of fees

Employer saw it as worthwhile training. Fees reasonable compared to other industry courses. Main concern was amount of time away from office.

Worksafe grant assisted with some expenses

Leave with pay 50%

...support from employer enabled me to finish in the two year period. Without this support it would most definitely have been more difficult

LWOP for 3 semesters - changed jobs then study leave, facilities & time to complete assignments (Not included in coded responses)

Fees and accom paid by employer (not coded)

Q11

Moved from providing service to Union members to Govt Authority clients

Unemployed

b Unemployed

Q12

a communication  b Consulting

a Union Comm servicing clients in Public admin

a Communication  b Communication/Transport /Hospitality

a telecommunications  b consulting

b consulting

a Consulting  b Consulting g

b Research

b Offshore petroleum/prodution

a Dept of Defence  b OHS consultancy firm

b Correctional services

b distribution

b Consulting

a Chemical (explosives)  b Chemical (explosives)

b OHS consulting

b Consultant /trainer

b Consulting

a Aviation industry  b retired

a Defence(Navy)  b Defence (Navy)

b Consult to no of industries

a Defence  b Defence

b Contract consultant

b home duties

Aviation  b Aviation

b Retired

Local Govt  b Local govt
<table>
<thead>
<tr>
<th>s75</th>
<th>Defence</th>
<th>b Govt agency</th>
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<tbody>
<tr>
<td>s77</td>
<td>bRisk Mgt Consulting</td>
<td></td>
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<tr>
<td>s80</td>
<td>a Telecommunications, various industries</td>
<td>b Unemployed</td>
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<tr>
<td>s84</td>
<td>a defence</td>
<td>b defence</td>
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<tr>
<td>s86</td>
<td>a mail delivery</td>
<td>b Mail delivery</td>
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<tr>
<td>s87</td>
<td>a State govt Inspectorate</td>
<td>b State govt Inspectorate</td>
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<tr>
<td>s88</td>
<td>b unemployed</td>
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<tr>
<td>s89</td>
<td>b unemployed</td>
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<tr>
<td>s91</td>
<td>RAAF</td>
<td>Transport (incl const and mtce of roads marine and ports</td>
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<tr>
<td>s92</td>
<td>Scientific research</td>
<td>Scientific research</td>
</tr>
<tr>
<td>s96</td>
<td>No part industry</td>
<td></td>
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<tr>
<td>s97</td>
<td>Com Govt - Defence</td>
<td>Sugar milling</td>
</tr>
<tr>
<td>s98</td>
<td>Sugar milling</td>
<td>Ohs consultancy</td>
</tr>
<tr>
<td>s100</td>
<td>OHS consultancy</td>
<td>self employed</td>
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<tr>
<td>s101</td>
<td>OHS consultancy</td>
<td>Vics OHSA</td>
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<tr>
<td>s109</td>
<td>Vics OHSA</td>
<td>Own bus OH&amp;S</td>
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<tr>
<td>s111</td>
<td>ACT Workcover Inspector - all industries</td>
<td></td>
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<tr>
<td>s112</td>
<td>Govt advisor to all industries</td>
<td>Bus Operations</td>
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<tr>
<td>s113</td>
<td>Hospital</td>
<td>Educational</td>
</tr>
<tr>
<td>s114</td>
<td>OHS consulting (RAAF)</td>
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<tr>
<td>s115</td>
<td>Tertiary education</td>
<td>Tertiary education</td>
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<tr>
<td>s116</td>
<td>Avation</td>
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<tr>
<td>s117</td>
<td>Various while working with a consultant setting up mgmt systems</td>
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<td>s118</td>
<td>Food and beverage</td>
<td>consulting</td>
</tr>
<tr>
<td>s120</td>
<td>Work environment consultancy Aust Postal Commission</td>
<td></td>
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<tr>
<td>s122</td>
<td>Consulting in OHS</td>
<td></td>
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<tr>
<td>s123</td>
<td>Sugar miller</td>
<td>Black coal</td>
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<tr>
<td>s125</td>
<td>Aluminium smelter</td>
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<tr>
<td>s126</td>
<td>Trade Union</td>
<td>Trade Union</td>
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<tr>
<td>s129</td>
<td>Now consultant in mining area</td>
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<tr>
<td>s132</td>
<td>Defence (RAN)</td>
<td>Defence (RAAF)</td>
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<tr>
<td>s134</td>
<td>Not working</td>
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<td>s137</td>
<td>Locksmith</td>
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<tr>
<td>s139</td>
<td>Union training and education</td>
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<tr>
<td>s143</td>
<td>Consulting</td>
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<tr>
<td>s145</td>
<td>Research</td>
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<tr>
<td>s146</td>
<td>Emergency services</td>
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<tr>
<td>s147</td>
<td>Employer organisation</td>
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<tr>
<td>s151</td>
<td>Employer organisation</td>
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<tr>
<td>s152</td>
<td>Communications</td>
<td>Consultant to several industry groups</td>
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<tr>
<td>s154</td>
<td>Education</td>
<td></td>
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<tr>
<td>s156</td>
<td>Self emp consultancy servicing</td>
<td></td>
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<tr>
<td></td>
<td>OHS and vocational rehabilitation to all industries</td>
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**Q13**

s45 Appointed to Safety Mgr position. Thought I’d better know a bit
about it

s48 Employer encouragement (not requirement) - External organisations with which my employer interacted were gaining persons with this (or similar) expertise/qualification for credibility reasons. Organisational (personal) the course completion was seen as an advantage/need

s74 Ballarats reputation as the leading Post GDR course in OHS in Aust

s88 Attempt to further tech skills above degree level in the field

s101 To set an example to my team (15 OHS people)

Q13

s6 "Requested employer support to enhance safety management expertise

s25 "Social activities"

s37 Seeking intellectual/academic challenges - keep brain ticking over

s127 Increase job mobility

s156 Professional recognition
Responses to Q15 useful technical skills

s1
nil

s2
Statistical analysis
Legal
Analysing accidents

s3
Guarding
Occupational hygiene
Statistics

s4
Ventilation aspects ie ensuring system equal to task
Fault tree analysis
Thermal comfort measurement

s5
Statistics
Risk modelling
Legal? Legislative appreciation

s6
Accident investigation
Understanding of hazard potential
Gathering and evaluation of statistical data.(Statistical prognosis was of little use. Worthless.)

s7
OHS Management
Risk analysis ?Engineering
Hygiene ??

s8
Using skills acquired in assignments to produce professional persuasive reports to senior management.
Use of statistics to challenge or validate a particular argument
Application of the Heat Stress Index.

s9
Hygiene and monitoring skills.
Ventilation monitoring
Report writing skills and layout

s10
Analysing OHS issues
Understanding risk concepts
Critical thinking

s11
Critical literature review
Information presentation (oral and written)

s12
Research and report writing
Knowledge of noise management gained in Hygiene Engineering subject.

s13
Ventilation techniques
Literature searching
Basic understanding of law
Management
Law
Expansion of ideas from the engineering "norm"

Knowledge of Occupational Hygiene
Knowledge of statistics
Knowledge of audits and ergonomics (human factors)

Auditing
research analysis and report writing
Legislative advice

Statistical analysis. The ability to utilise the range of statistical applications
Hygiene - technical aspects
Law - appreciation of precedents and application of law to OHS

Statistical analysis
Hygiene engineering
Library / research etc for dissertation

Accident causation modelling
Ventilation assessment
Report writing

Environmental controls, lighting, noise, office temperatures
Risk managing environment workplaces
Risk management to equipment

Knowledge and ability to use legislation and statutory bodies
Ability to write technical reports and to understand those of others- noise hygiene etc
Interpretation of statistical data (Although still not very good at it)

Human factors
System safety
Airborne contaminant control

Risk engineering
Risk assessment
Hazard control

Risk analysis
Wider appreciation of technical aspects of accident prevention
Recognition evaluation and control of physical and behavioural factors relating to accidents and prevention

Investigative methods
Presentation skills
Research methods

Hazard and risk models
Greater ability to work with statistics
Ability to critically examine plant/machinery for potential problems.
Knowledge of auditing

Technical data research
Noise and vibration identification/assessment/control
Technical report writing

Nil (valid response since not employed in OHS)

Applying accident models
PPE programs
Management

Risk Management Skills - Analytical
Ergonomic Assessment Skills Problem solving
Hazard Identification skills Problem solving

Safety engineering
law
Safety concepts

Risk management
Management systems for OHS
Auditing

Research
Risk control - Viner theory
Accident investigation

Measurement of noise levels and hearing protection noise reduction methods
Recognition of dust /fume levels - what is acceptable /dangerous
Lighting levels

Knowledge of OHS legislation - history and philosophy style
Eval of adequacy of ventilation systems and substance control generally
Noise transmission and control

Understanding decibels
Dose? effect relationships. Exposure characteristics
Statistics
Assignment/report writing , referencing writing in English (ie literacy skills)

I don't think I gained technical skills from the Course

Risk Engineering
Occ hygiene
Legal aspects

Occ hygiene monitoring
Risk assessment
Statistical analysis
Engineering design concepts
Statistics
Occupational hygiene factors

System design
Risk analysis
Dissertation skills

Safety engineering
Occ hygiene

Hazard management approach - D Viner
Mathematics / machine guarding / noise/ electrical safety were all well below standards of previous engineering degree

Ergonomics
Hazard mgt ie Hazard identification elimination control reduction Body entry routes - especially respiratory / skin exposures etc - useful for dusts etc. that are common in many environments

8ball skills improved
Able to drink more over longer periods
Ability to survive with almost no sleep

Nil response

Risk management and analysis and control skills (both in the mgt and legal applications
Sociological , psychological - human factors (Utilisation / applicability in both employee and mgt context
Research and information systems

Classification of risk
Hazard techniques
Auditing procedures

Ventilation
Noise

Analytical skills
Research skills
Risk management

Risk engineering and risk assessment
Occupational hygiene/ health
Hazard control

Human factors
Risk engineering
Risk analysis
s54  Skill regarding guarding
     Analysis of information

s55  Noise monitoring
     Hazard analysis
     Understanding of law

s56  Risk management
     Hazard control (safe guarding)
     Management of noise

s57  Specific policy and procedure; development skills
     Legal, research and management briefing skills
     Hazard management skills

s58  Safety engineering
     Hygiene studies

s59  Research
     Human movement
     Hazardous Materials & environment

s60  Nil response

s61  OHS audit report writing
     OHS management through statistical analysis
     Self development in OHS research skills

s62  Hygiene calculations (eg noise HSI)
     Statistics
     Referencing

s63  Better grasp of statistical analysis
     No others as had already completed a no of short post grad courses

s64  To gain an appreciation of airflow controls and noise and human factors
     OHS mgt principles

s65  Ventilation assessment
     journal writing
     statistical evaluation

s66  Safety engineering solutions (Sharing)
     Hygiene engineering
     Occupational health (chemicals)
     Law
     Human factors

S67  Nil response
Auditing
Presentation of data to senior mgt
Keeping records

Risk identification and evaluation
Human physiology
Safety engineering

Noise and vibration
Statistics
Law

Nil response

Scientific approach to accident prevention
Use of quantitative analysis methods eg fault tree analysis and extended energy damage model
Epidemiological analysis techniques

Prior to Ballarat I had attended the OH course at Sydney Uni and Grad Dip at Deakin. These courses together with extensive exp in analytical chem, biochem, and micro biol, I found the technical aspects of the course a good experience in "transfer technology"

Hygiene ie heat stress
Risk analysis
Hazard ID and control

Hazard analysis (id, eval, control)
Risk mgt
Accident phenomenology

The management approach
Analytical methods used
Accident process

Statistical analysis…

Noise measurement

Noise measurement and attenuation calculations
Human factors assessment - manual handling ,ergonomics
Data base research and report presentation

Statistical computations and the application of statistical results to support a proposal
Human factor assessments/in forming job design /redesign considerations
Refinement of abstract writing for editorial purposes

Risk assessment including legal matters
Report writing
Use of reference material eg library computer and relevant publications
Risk id, analysis, correction
Use and understanding of statistics
Understanding accident causation

Human factors
Safety engineering- particularly accident analysis
Noise control

Statistical analysis

An understanding of statistics
More understanding of legal issues

"none"

Research
Noise levels

Auditing
Policy writing
Hazard Id

Evaluation of accidents
knowledge of the law
ergonomics

Hazard management- Workplace inspection, hierarchy of control
Risk engineering- Practical skills- Machine guarding; isolation/lockout
Preparation of paper to publishable standard and to fellow students Sem 1
(Wigglesworth .This stands out as one of the most valuable exercises in the
course

Risk assessment (Risk management)
Risk engineering
Systems approach to OHS management

Risk engineering
safety law
occupational hygiene

Some of the statistics ideas
Efficient locating of information through library etc resources

Hazard management principles . Hazard identification, Hazard control
Hierarchy of controls
Generalised time sequence model - event analysis

Statistics and use of computer programs
Ability to access info and contacts in field of OHS
Hazard identification
OHS management audits and surveys
Hazard id and measurement particularly noise and air
Accident investigation

Ventilation
human factors

Investigation
statistical analysis
Problem solving

All of the engineering content presented by Geoff Mcdonald and Derek Viner
Statistical method
Accident analysis techniques, particularly from the aviation industry

From the practical point of view the course gave me skills relating to what I as a practising OHS management consultant, am asking clients to do eg noise level measurements and interpretation

Networking via current tech info systems
Professional technical presentation skills
Ability to complete in depth tech analysis

Confidence with statistics
Suitable accident investigation techniques
A suitable approach to hazard controls

Statistics
Accident investigation
risk analysis and risk management

Risk analysis
OHS legislation
Statistics

The development and presentation to management of OHS initiatives
The different processes available to analyse and control risks and hazards in the workplace
A deeper understanding of the concepts and theory of OHS as applied in the workplace

No particular skills since the course was mainly knowledge based

Management systems (Although the subject was not covered well)
Statistics
Noise analysis

Accident causation analysis/ problem solving
Information research
Interpretation of legislation
s109 Noise monitoring
Chemicals
Ventilation

s110 How to assess risk
How to collect and present information
How to measure and monitor hygiene and health aspects

s111 Accident investigation
Hazard management - Viner was very good, ***** average at best
Noise measurement solutions

s112 Auditing
Lighting - @ garages implemented $80000 each on lighting. Lighting was substandard - I forced them to be changed
Ventilation - Transport systems- Fumes /dust extraction

s113 The measurement of ventilation ,heat etc
The demand for keyboard/ computer skills E - mail etc

s114 Improved computer literacy
Better understanding of stored energy concerns and machinery guarding
Better understanding of occupational hygiene issues related to chemicals

s115 Risk analysis(Fault tree etc)
Computing skills
Library and information access

s116 Risk analysis procedures
Accident analysis methodology
The energy principle of hazard management

s116 Noise testing
Hazard management project fourth semester- Walking around factory to assess hazards

s118 "N/A"

s119 Hazard Id
Risk Assessment
Accident Investigation

s120 There were none !(This is a serious answer)

s121 Knowledge of statistics
Occ Health and hygiene provided a theoretical grounding in noise , airborne contaminants etc Risk engineering provided tools eg probability etc to objectively analyse and solve problems

s122 Heat stress monitoring
Accident analysis
Risk philosophy applications
Risk engineering
Human factors
Safety law

Ergonomics

Nil response

Hazard analysis -Viner
stats
Note : needed to do more on accident investigation

Occupational hygiene eg heat
Risk management
Ergonomics/human factors

Industrial hygiene
Safety analysis
Heat stress

Hazard identification using energy methods etc
Information of chemical exposures, methods of determining "acceptable"
levels etc
Legal information . I had almost no knowledge of the nature of law 9Eg
common , torts etc

Occupational hygiene
Ergonomics
Statistics

A broader view of OHS
Development of my skills to higher level or standard
Ability to comprehend the scientific approach and analysis

Noise measurement
PPE selection
Measurement of atmospheric contamination

Basis to understand & assess OHS problems
Good foundation on things like: Occ hygiene, noise and its characteristics
How to professionally research and present findings

*

Human factors
Machine guarding
Survey techniques

Changed job... did not permit. utilise tech skills ...
Used knowledge of lighting and noise control during course
s137  Hearing protection  
     Dangerous chemicals  
     Hazardous substances  

s138  Understanding requirements for exhaust ventilation systems  
     More precise ways in determination of noise levels  
     Injury accident and investigation processes  

s139  The measurement and understanding of noise  
     The limitations and uses of PPE and clothing  
     Implementing applying using hierarchy of controls  

s140  Noise measurement  
     Heat stress (Though poorly supervised)  

s141  Slight enhancement of technical skills.....  
     Statistical analysis  

s142  General understanding of health and hygiene topics eg noise, airborne contaminants, hierarchy of controls etc  
     Understanding of accident causation theory and incident analysis  
     Risk control principles and management  

s143  Ergonomic principles and their application  
     Hygiene principles and application  
     How to research a subject  

s144  Statistical methods  
     Industrial ventilation assessment  
     Noise measurement and control  

s145  Nil response  

s146  I believe the course only provided introductory skills. I don't believe that they can be claimed as technical skills  

s147  Nothing applicable to my role as an employer representative  

s148  Nil response  

s149  The ability to question the design of ventilation control methods  
     The ability to question the design of machine guarding control methods  
     Applying risk cost-benefit analysis  

s150  Nil response  

s151  Research of material  
     Data analysis  
     Accident phenomenology  

s152  Human factors /ergonomics  
     Industrial hygiene /chemicals handling /noise etc
Legal aspects of OHS

s153 Ability to identify, evaluate and control:
    Noise
    Lighting
    Exhaust ventilation

s154 Hygiene evaluation
    Statistics re-evaluation
    Report writing skills - to program development

s155 Risk analysis
    Hygiene engineering principle
    Research technical

s156 Risk engineering /Occ hygiene - Assessments, analysis and interp.
    Research & preparation/ presentation of papers
    Assessments /audits of workplaces and preparation and presentation of reports
Responses to Q16 Key ideas

s1  Nil

s2  Changing cultures from the top
     Auditing to achieve change
     Accident investigation to support the need for change and value of change

s3  Networking for solutions
     Hierarchy of control
     Establishing accountability mechanisms

s4  Principles of hazard management in a quality environment
     Hierarch of control and its application
     Risk minimisation through application of sound management principles

s5  Safety is cost effective
     Legislative requirement
     Measuring effectiveness of interventions

s6  Proper incident investigation and gathering of relative data
     Ensuring blame factor did not enter into any investigation
     Clear and unemotional presentation of information to senior management to achieve best results

s7  TQM applied to OHS management, including auditing of systems
     Hierarchy of risk controls to assessment strategies
     Benchmarking and sharing of ideas and resources

s8  Challenge all information provided to you as a safety professional
     No single concept or model holds all the answers

s9  Need to network
     Control at source

s10 Analyzing OHS issues
     Understanding risk concepts
     Critical thinking

s11 Control hierarchy(control Vs evaluation and measurement) Distinction between engineering and administrative controls and their relative effectiveness/reliability.
     Risk - definition and application in assessment and prioritisation
     Role and accountability of OHS professional - as advisers not deciders of "acceptable level of risk" Role of others etc.

s12 Geoff McDonalds lectures and accident reference tree trunk model
     Knowledge of common law principles

s13 Hierarchy of control

s14 Forward thinking - prediction and prevention before doing!
Making use of what's available
Looking at people and skills more closely

S15  OHS legislation interpretation
     OHS principles and promotion
     Risk evaluation

S16  Systems management of OHS
     Integrated strategic planning
     OHS/Quality concepts

S17  OHS management systems
     Risk analysis processes
     Practical noise control applications

S18  Multiple causation
     Haddon/tigers/energy exchange countermeasures
     Probability mathematics

S19  Line ownership

S20  Understanding environmental factors
     Risk management appraisals
     Presentation of a topic paper

S21  How to understand and use other professionals/not necessarily do everything myself
     OHS can be greatly improved by involving all levels of staff at little expense
     Networking with other professionals

S22  Accident causation, analysis and control
     Engineering risk controls - modelling, Risk analysis
     Risk Psychology, human behaviour - works a bit differently in PNG

S23  Statistical concepts
     Accident Phenomenology
     Hazard management

S24  Confined space considerations
     Reduction of noise in the workplace
     Backup material to counter employer perception of safety just being common sense

S25  Consultation
     Risk analysis
     Audit systems

S26  Nil

S27  Opinions about the direction of OHS have a diverse range
     Tripartitism doesn't necessarily produce a workable framework
     If you want to hide something - use statistics
Systematic management of ohs
Strategic planning
Auditing

N/A

Management principles
Using the accident models

Accident phenomenology
Safety law - prevention
Health promotion

Accident causation
Safety management
Statistics

Risk quantification methods for OHS
Fault analysis/incident investigation
The energy model

Nil response

Occupational health and safety auditing - practical application

Principle of safe place control rather than safe person
Worker participation in OHS through consultation - both in terms of the
right to be involved and value of contributing worker knowledge and experience
Effective strategy of designing to control hazards at outset

Fundamentals of Rowes Anatomy of Risk (Types of risk etc)
Solution hierarchies
Democratisation and its role in workplace reform

Holistic nature of OHS(engineering - sociological determinants of OHS)
The ready transferability of OHS concepts from one industry to another

An holistic professional approach
a disciplined engineering based approach
Core skills to evaluate effective prevention programs in a workplace

Introduction of risk management skills to my organisation
Improved data analysis resulted in better management information
Ergonomic approach to solving physical strain injuries

Use of variance measurement
Use of financial systems
Various accident investigation systems

The need for communication of OHS needs to all levels and all industries
Training for key OHS staff in risk management
Benchmarking essentials for OHS system performance

s43 Efficient management of OHS&W
OHS&W program development
Use of OHS&W data

s44 Development of risk management approach
Value of developing OHS Network/contacts

s45 Consultation although you didn't really cover it well
Use others - Don't presume you know (However the course tended to use the
"expert" approach
Fear and emotion fill the vacuum by a lack of facts (A saying I made up to
describe the industrial reality of safety in the workplace)

s46 Ability to research information thoroughly
Management strategies

s47 No response

s48 Philosophy of OHS integration and devolution in organisations
Strategies of consultation acceptance and commitment
Concept of risk (eg acceptable risk Vs "safe")

s49 Workforce involvement in hazard identification and risk classification
Incorporation of hazards into incident reporting systems
Customising with classification models

s50 Risk
All DV models
Management theory - Systems, HR

s51 Hazard management
Risk management
Planning of my own work

s52 Share of ideas from which developed the OHS SHARE program
Risk engineering /management
Presentation of Case studies (solutions)

s53 Quantifying risk ie probability/outcomes
The cost of risk
Communicating the nature of the risk

s54 The responsibility for safety starts from the top down
Importance of legislation
Importance of presenting a complete set of arguments

s55 Noise monitoring
Report writing
Management skills
s56  All accidents are preventable
OHS as part of TQM
Identify key areas of OHS and determine standards

s57  Understanding the concept of risk
Prioritising risk and the differing perspectives of various stakeholders
Hazard control is a hierarchical process and understanding hazard management

s58  Hearing conservation and noise measurement
Chemical assessment
General subjects on safety engineering

s59  Area assessment
Hazard Management
Ergonomics

s60  No response

s61  TQM & OHS
Risk assessment
Statistics

s62  Energy damage model
Time sequence model
Performance measurement parameters

s63  Statistics could be a powerful additional in an argument/promoting idea.
Better group of available databases to research background material for projects
Organisational psychology concepts proved useful in understanding how to achieve change

s64  OHS Management
Human Factors
Hygiene

s65  Systems in OHS
Networking
Strategic management

s66  Introduction to many new safety engineering devices overcoming to a large extent the human factor issues
Hygiene engineering assisted new practical application to noise surveys/Environmental measurement -chemicals and air borne/lighting surveys etc
Law -Helped immensely in legal issues of discrimination/equal opportunity legal liability issues and in advising legal counsel prior to litigation cases

s67  No response

s68  Evaluation and need for risk assessment
Need to network
Need to market safety as a commodity

s69 Safety management
The use of safety models
OHS Law (duty of care, negligence etc)

s70 It is the management of OHS that achieves results

s71 No response

s72 Scientific approach to accident prevention
Hierarchy of controls
Safe system not safe person

s73 All aspects of risk assessment
The application of law and its implication in OHS
My skills in stats analysis was expanded

s74 Hierarchy of controls
Safe place rather than safe person
TQM and its impact on OHS

s75 Energy model for various hazards
Risk analysis
Risk psychology

s76 Treat OHS as a profession
Interface between people and work hazards
Networking with other OHS practitioners

s77 Refreshed my analytical skills and fine tuned them

s78 No response

s79 Review analyse and improve
The need for continuing knowledge

s80 Exposure of the limits of training in the change process, directing me to more effective measures.
Realisation that OHS, security, quality production, good management practices have united concepts
OHS experts are not automatically respected, but have to earn respect and politically manoeuvre for organisational advantage

s81 The capacity to justify capital investment with a risk analysis that was objective
Need to involve management team members in OHS matters
To keep OHS knowledge current via seminars, contact with peers and use of technical data in particular legal aspects of OHS

s82 Accident modelling
Managing OHS function and interfacing with organisation
Non delinquent issues relating to accident causation - ergonomics

s83 Multi factorial accident causation
OHS should be a normal part of any business or operation
Systems approaches to OHS issues

s84 Energy damage model
Holistic management approach required
Risk = probability X cost

s85 Concept of energy release in accidents
Haddons 10 countermeasures

s86 "None"

s87 Nil response

s88 TQM
Captive pool insurance
Regular audits /professional delegation of this function

s89 Accidents are usually a result of environmental factors rather than the fault of the injured person
Accidents should be treated like diseases as something to be prevented rather than to blame something or someone for them
That accidents can result from a chain of causation rather than a single event

s90 Safe place/safe system
Knowledge of legal aspects of OHS management
Use colleagues as resources - network with fellow practitioners

s91 Development of control strategies through consultation
Engineering controls generally superior to administrative controls
OHS is a function of management

s92 The potentially damaging energy model
Applying the model to identify hazards
Applying the extended energy damage model to accident investigation

s93 The concept of management (I Know this is a broad statement, but the concept "clicked" with me
The different ways of managing

s94 Identification assessment control of hazards
Human error - leads to accident occurrences
That OHS management is a new science- and is undeveloped

s95 Prevention is better than cure
Importance of gaining "true" commitment of management
Importance of well trained and committed safety reps

s96 Energy damage model of causation and injury
Understanding of different kinds of risk - eg acceptable, voluntary and involuntary
Robens legal approach to ensuring managerial responsibility for OHS and
involvement of workers in the process

s97 Risk assessment

s98 Engineering control in OHS
Administrative control in OHS
Never accept answers/solutions from one source

s99 The "pioneer" session was too new to contemplate such precise phenomena as a
limited or even specific group of "key ideas". We all learned an incredible amount
from those of the staff and members who came down from delusions of personal
grandeur and shared experience and knowledge as a peer group, which we were.

s100 Analysing problems
Research
Networking

s101 Lateral thinking
Developing "systems" thinking
Communication with all levels

s102 Energy damage model of accidents
Design / engineering centred approaches to hazard control
Suitable hazard and accident classification systems

s103 Risk psychology
Worker involvement
Hierarchy of risk control

s104 Risk sociology - accident causation
Implementing change - motivating management

s105 The importance of behavioural change as a means of having a safe and healthy
workplace
The melding of theory and shop floor practices in the development of ohs
strategies
The analysis of an incident to find the root cause thereby present an approach to
bring about control

s106 Safety as acceptable level of risk
Conceptual basis of current legislative directions
Identification, assessment, control

s107 Consultative approach to OHS management
OHS s part of business strategy
The subjective and objective evaluation and quantification of risk

s108 Every accident has a controllable cause
Safety is manageable
The feeling of safety is relative to ones current security and is not static
s109 Prevention not chasing stats
Working environment - Holistic
Auditing management systems

s110 Safety must be integrated into all tasks
There is always a reason for what’s happening - research and investigate and then make decisions
For a quality job measure and record before and after attempting changes

s111 Expend energy /resources on controlling the hazard not to overdo the identification /measurement
Plenty of solutions out there, don’t reinvent the wheel. Network
Involve the workers who are doing the work. Listen to them to find solutions

s112 Planning Auditing and Reporting
Legal studies

s113 Safe systems of work
Solving safety problems /consultation
Participation - Prevention rather than protection changed my philosophy on management

s114 Look for statistical data to assist with analysis of issue
Organisations often do not understand the composition of effective management systems. Teamwork achieves the best or most acceptable results when all team members have contributed to the solutions/ ideas compiled by the team

s115 Risk analysis
Consultative ??? modelling
Problem solving and analytical skills

s116 Hazard control at the source
"duty of care" personal liability
risk management loss control applications

s117 OHS needs to be managed by management and supervisors. They need training in this
Much improvement can occur in the workplace once management and staff have had training (even basics)
You didn’t have to be an expert as you could usually obtain good advice from GD(OHM) graduates

s118 N/A

s119 Link OHS to TQM
Development of OHM systems

120 OHM is a business practice like all other business practices
Uniformity in statistical nomenclature and collection methods of data is essential. A quality assured business must be a safe business providing a healthy working environment for employees.

NB - These concepts were not directly taught, but were developed from the teachings.

s121 Communicate and sell safety to management
To gain professionalism
A thorough knowledge of general OHS topics

s122 Management by objectives (incl OHS)
Share ideas and skills
Prevention first

123 Hazard energy model
Accident causation models
The need for professionalism

124 Nil response

s125 Nil response

s126 I find this difficult to answer but course changed my whole approach

s127 Evaluation of risk control strategies is just as important as identification assessment and control
Risks can be voluntary or involuntary. Not all risks are the same eg driving vs flying
Risk management is an insurance concept and not a preventative strategy/approach

s128 Question academics
Test theory
Paper qualification is not questioned by management

s129 Safety requires a management structure. Useless and almost always incorrect to blame the person injured. Hierarchy of controls
Emphasis on solutions to problems not researching nature of problem endlessly
People are not willing to take the same risk at work as during recreation. Volunteer vs conscript

s130 The course didn't provide any real key ideas rather it confirmed thoughts and ideas that I already had

s131 Promoting professionalism amongst the inspectorate
Hierarchy of control measures
Engineer the problem out
Consult workers for ideas on control measures

s133 Networking and sharing information
Knowing many problems are broader than initially stated by the untrained
Effective use of resources

s134 Not currently employed

s135 Accident causation
Statistics for injury data analysis
Management techniques

s136 Day to day management issues of OHS was not well covered in course. Those that were too narrowly focussed. eg MBO, and did not permit latitude to explore alternatives. Issues/management requirements that could have been included are Workers Compensation, negotiation skills, emerging procedures and security

s137 None really

s138 Necessary involvement of numerous players in decision making process
Importance of management commitment to OHS (true commitment)
Relationship of OHS to all other processes and faults within a company

s139 Philosophy of controlling hazards at source
Strategies for modifying human behaviour and their limitations
Relating financial benefits to hazard and injury control

s140 Application of hierarchy of controls
How to research information

s141 Being objective/critical analysis
Report presentation

s142 The integration of OHS management into the workplace management structure
Accident causation and prevention models
Hierarchy of controls

s143 The application of risk management

s144 Extended energy damage model re accident causation
Injury data classification based on above (EEDM)
The application of psychology to OHS

s145 Nil response

s146 Nil response

s147 Nothing comes to mind

s148 Management concepts
Hierarchy of controls

s149 Energy causes injury
Control risk art source wherever possible
Manage OHS strategically - link it with quality management concept / initiatives.
Integrate it into mainstream management functions

s150 Accident causation / epidemiology concepts
Hazard quantification / control concepts

s151 Aim at the top executive
Be prepared to "change"legislation
Networking

s152 Nil response

s153 Ability to justify control mechanisms - especially financial requirements
Interpreting legislation and applying to work place
Not reinventing the wheel

s154 To help develop the courses within safe management as an Open Learning Program within Monash University
To help develop the core units within the TAFE Cert of OHS

s155 The multi disciplinary approach
Team approach to problem solving
Dealing with CEOs to attain initial commitment

s156 Accident investigation processes
Paper presentations - Verbal/Journals
Resource/ research centres /available resources
Q17

s3  I was able to advise and facilitate in all areas with full employer support - seen as the "expert"

s4  Due to the rank structure of the RAAF, SGTs (my level) are more hands on

s5  - "Employer was primarily interested only in protecting themselves from litigation."

s29  "Both prior to and after the Course I was the De facto OHS officer cum consultant

s36  Negligible with employer at time - subsequently used extensively in later employment

s38  ...most of my skills and ideas have come from having worked in a range of OHS positions...plus experience.- I have never been asked about what I have learnt at Ballarat

s45  I didn't use the statistics to any great extent. Management use pareto a great deal of the time- I don't think it was ever mentioned in psych units or statistics

s46  No feedback from employer. Its really up to me to expand on the newly acquired skills

s53  It was accepted that more analytical skills should be applied to these concepts

s57  This is not a TAFE course solely relying on practical skills, but many ideas were way beyond the level of management at the time- OHS was not fully accepted /understood.

s58  Noise measurements, lighting, ventilation, chemical assessments prior to use

s73  Negative response explained by retrenchment

s74  Strongly encouraged by employer to put new skills into practice (Local (Govt)

s81  Employers were not aware of the capabilities of G.Dip OHS so increased usage was evolving

s86  Recorded Negligible because respondent did not believe learned any new skills or ideas

s104  Eng skills therefore low score on improved problem solving and analytical skills

s105  more a case of me passing on skills learned rather than employer using them

s108  Too far advanced for them at the time-.situation has now changed

s110  respondent indicated big improvement from 1982 to 1994

s121  mod use but could be greater if management allowed

s133  freq I did on behalf of employer

s137  Not- I resigned

s153  Neg-now implementing changes to mgt philosophy. OHS now a priority (Trans and storage industry)

s156  Mod-Cultural change required- beginning to accept alternative options/issues /suggestions at time

Q19

s6  - 1 Statistical prognosis (irrelevant)
   2 The use of pseudo technical language for everyday phraseology
   During on campus studies, often didn't fully explain difficult sections of lecture as students were told that time allotted did not allow it
Overall pleased with the well structured nature of the course and flexibility of key course people in relation to work commitments vs deadlines for Assgts.

- Stats! Although these were difficult at the time I considered them important in maintaining the standard of Course graduates

- 4th Semester - Statistics

Degree of writing on campus (Eric's)

Being non residential student was not helpful

Family bereavement. Job changes-frequent deferral, difficulty in attending

Cold weather at Ballarat in winter is hell for Queenslanders!

Following engineering degree, workload was not excessive .3week block sessions were suitable

On and Off campus workloads were "a problem", however I am not sure they should be if objectives of the Course are adequate and to be met

any problems met were reasonable for a course of this type and were well handled /supported by BCAE.

Statistics

Certain risk management concepts were too abstract

Very difficult when there is home maintenance and out of working hours meetings

Already working up to 60 hrs per week on top of Course load

Lecture presentation and content of states

I loved every minute of the Course

States

Statistics .Too much work to get through in 2 semesters

Accident phenomenology

Expected the course to have some impact on family life

Statistics

Geographical isolation -support networks not easily accessible

Human resources, management systems

Assignments not marked quickly enough-not received back before subsequent relate ones sent in

Difficult for mother on campus who had new school age child on holidays

Statistics and Risk sociology -former difficult but useful ,the latter not v. useful

Statistics - better course materials would have helped

Risk sociology

mid Course job and location change caused some problems

Statistics Could have been taught more slowly step by step. More relevant to OHS "over the top"

severe stress disorder on conclusion of course

Admin blunders minor, staff spared no effort to educate and please. Tutorials available

Statistics

Risk mgt subjects were repetitive and lacked sound examples of application.

Statistics
Statistics and modelling - too rapid in completion of Course program -
No assessment of general knowledge or awareness at beginning of
Course to ensure all participants at a base level

Q20
Student accommodation was a negative
"Only tried once - adverse reaction from lecturer
Exercises in statistics were very unrepresentative of way statistics are
used in real life
I thought Buninyong (the Pub) was part of campus - compliments to
Steve Cowley
Some working with others is valuable but not all projects
Stats more a "slog" than useful. Other projects generally supported
constructive interaction, I'm not sure stats did this
Very good learning environment
Having a local pub that will stay open late so you can study prior to
pub time
especially the hotel
Too cold to be comfortable - continual need to borrow clothing (NT)
Statistics
Management block of subjects - poorly presented and not linked with
the Course overall
Campus facilities frequently sub standard. No cupboard
access. Student services curtailed.
very helpful to be completely away from work issues in concentrated
environment of OHS study with other people who faced similar work

Q21
Temporary transfer at end of year 1, left Public Service after end of
year 2
Changed employer from 1000 to 3000 employees. ANZ role multi sites
/respondent related this Q to family and other external influences
Completion of the Course pointed up certain inadequacies and
challenges in current employment
Respondent did not register any coded improvements but comments
showed all were enhanced or achieved
Status ins an artificial term (responsibility level)
Retrenchment
Improved work situation not felt to be Course related
...started an upward career spiral
Retrenchment
...position made redundant within 2 yrs of comp course forcing
change to alternative OHS employment with improved qualifics
starting employer went into liquidation
big increase in salary within two years
Without underpinning of such a qualification I would have been
unable to professionally complete my employment task
Does not consider same opportunities available now
retired then took on part time work
retrenched
believed course helped get training adviser job

Q22
Other - Specialist Hygiene
Other Manager Human Resource Services
s20 Other Senior Consultant and Specialist in OHS
s45 HR Manager, Regional role
s63 Consulting role primarily advising senior managers on OHS strategies, primarily within wider view of risk management
s77 Risk mgt consultant -Ins ind
s85 Environmental manager with a small health and safety component
s93 Also responsible for environmental management
s96 Working outside the OHS profession
s101 Self employed OHS consultant
s105 job change led to less satisfying position (not code)
s125 Specialist Occ Health
s129 Consultant in OHS and Petroleum engineering -complementary
s139 H and S teacher
s140 Occ Hygienist
s152 Risk Mgr-public liability and prof indemnity insurance
s156 self employed

Q23
s14 My section designs External plant Construction. Large machinery, underground installation, many projects at one time
s17 Very strategic in nature
s22 I work in PNG - Training and localisation play a major role in any job up here
s45 The approach of the 90s should be safety as an element of a total quality management approach. If you aren’t teaching this -you should
s48 Due to integration and devolution, strategies implemented I tend to have more a planning /advisory/support (and sometimes a monitoring (auditing role rather than hands on
s52 Other important subjects include- developing and implementing OHS training and safety and quality auditing
s57 Envt assessment relating to substances in use
Assessing hazardous materials in relation to risks to personnel
s60 Most of the work involves management of the compensation system! I don’t feel the course gave much help with this
s61 I have since graduation been appointed as OHS data analyst for the Australian Defence Force
s65 Heavily involved with organisation of OHS training initiatives
s73 OHS Committee work. Site and process assessments. Providing advice to Mgt/Union on specific matters.OHS policy drafting
s77 Mainly identifying and advising mgt on mgt systems implementation through audits and program appraisals - making recommendations and providing training
s78 Training coordination takes up most of my time
s86 mainly strategy development
s102 99% OHS trainer
s104 moved away from OHS to broader area of risk mgt 9not coded
s112 Arguing OHM case for practices/procedures with Unions or employees
s113 sees uncaring executive managers the problem not money or resources
s114 Most time spent as OHS consultant and trainer plus admin and mgt of area office
s121
s139  TAFE teacher of all above

Q24 (a)

s7  Auditing, resource consulting, ergonomics
s20  Human factors, claim management, equipment management
s22  fire prevention etc
s24  - fire suppression
s36  OHS policy, programs and strategy development and implementation
s38  OHS policy, development of OHS strategies
s40  Accident/incident investigation
s44  Design installation and support of OHS software packages
s52  Quality systems
s63  Auditing systems
s112  Critical incident management
s153  Occ hygiene assessments
s156  Critical incident stress management

Q24 (b)

s3  I understand the management units have been restructured and this may negate my criticism in that area.
...too much ability to plagiarise-some students relied on this. Mainly due to repetitive nature of assignments from year to year. Some people didn’t do their share in group work- got same mark.
More personal research and presentation(similar to Wigglesworth 1st semester) would be of long term value to students.

s4  Apart from the qualification one of the most beneficial aspects of the course is the network and the doors that it opens as a graduate of the course

s5  I was very disappointed in my employers ( & industry in general) attitude to safety . The general worker was bluffing into believing they were being looked after . Their knowledge base was so low that the employers could dodge their responsibility. Employers I know personally are Aust Post & Dept of Soc Security >"

s6  Studies should concentrate on use of relevant data as Occ Hazard Mgt control rather than breeding a generation of "dogooders" who are counter productive in enlisting involvement of workforce supervisors. These supervisors are the people who will get safety to the floor of the workplace and must be given logical credible information and solutions.

s7  "Compared to the OHS, Management and legal units , the statistics suite? was appallingy presented and resource material was also poor. I don’t wish this on future graduates.

s8  "When can I come back! "

s10 - "The course needs to have the statistics component of the course directly relevant to OHS, and the course needs to reflect the requirements of Codes of Practices

s11 - "The course is unique in that it provides opportunity for workplace based assignments - which is what OHS is all about - in this respect it has a lot of potential
      Course potential (and its credibility) is undermined by -"
- inconsistencies in assessment
- disorganised administration
- inadequate facilities and tutorial type support
- some gross cheating by a significant few (poorly controlled)
- insufficient feedback at assessment - model answers would be a great way to assist learning by those who are genuinely interested

s20 - "Significant value with direct contact to lecturers. Significant value with networking with other students in all states of Australia."

s12 - "Course was in its infancy (2nd year) when I started, was a good start and I believe quality has improved since I completed it."

s24 - "More should be done in practical terms by the University of Ballarat to lift the profile of OHS, to support the efforts of OHS professionals who are endeavouring to change the laissez faire attitude towards OHS shown by some automotive managements.

s28 - "One or two extra modules on ergonomics eg CTD's and screen based equipment which is an immediate and growing problem in the modern workplace."

s29 - "Whilst 'job hunting I found it impossible to obtain an OHS position with pay comparable to that which I could obtain as an engineer, hence back to engineering."

s35 - "There was an unrealistic proportion given to statistical interpretation that could have been allocated to more down to earth practical issues like lab work on dust and fibres - sampling techniques of atmospheric conditions etc.

s36 - "In going through the Grad Dip and again in completing this survey there was an orientation and tendency to assume that the participating students are OHS coordinators/officials in enterprises. Increasingly we are also in Govt OHS Authorities (IN policy, inspection or technical services), in employer associations or in unions. This has implications for how assignments are approached and educational requirements of those groups about how they can most effectively approach their roles, which are an equally important part of the whole OHS picture. This diversity should be acknowledged and educational needs addressed.

2 Ballarat has an entrenched social culture (Large group, lots of drinking etc) which can be alienating to those who aren't into that scene. I think ways need to be found to diversify that and encourage alternative forms of socialisation. I don't suggest you have to do away with the latter - it's obviously popular with many. But it might help to acknowledge to students that not everyone's into it and encourage those who aren't to get their own networks going based on alternatives.

3 Ballarat / VIOSH's staffing is unusually all male in this day and age (except of course for Diane holding things together) Next time there is a vacancy I think there should be positive steps taken to encourage female applicants - there are many now amongst the graduates, and it is important to reflect women's involvement in OHS in the educators.

Good luck with your survey!

s44 - The initial Intakes (Intake2) had limited technical input (except for D Viner and networking/developing contacts was the most important feature.

s45 - "Steve; The principles are important eg the use of a flange and distance from source directly affect capture velocity - but do you need to be able to
work it out? The principles are what I took away from the course. eg The cell as the basic unit of life (Marg Torode) the principles of hazard management, the energy damage model etc- I use other people to do the working out - management is more about getting the right framework. Sometimes I think the technical tended to dominate the other - I don’t think that a number of presenters in the Management area knew what it was like to be a manager. **** didn’t. Similarly, De Jong called his program Risk Management (but took an insurance approach to it) Nowhere in the course did it adequately cover total loss control eg You may have a perfectly good safety program but if your rehabilitation and claims management is lax - you will have ‘accidents’ Why? because its the way you access the system - a holistic approach prevents this

Overall, I thoroughly enjoyed it and made lasting friendships.

"During my time at Ballarat (92/93) many people who had very little practical experience and perhaps OHS knowledge were able to manipulate (Through their networking) to achieve high results. Some form of testing especially for the technical skills should be incorporated.

...should acknowledge Course cannot be all things to all people...for more general and applied purposes the Course was adequate.-could be more emphasis on ergonomics, practical statistics, publication and presenting, marketing techniques and training skills.

Course suffered from a lack of hard core hygiene subjects. For those with no previous technical knowledge this weakness could prove dangerous in on the job application of the Course.

I would suggest that OHS could be integrated with Quality systems to bring about better results. Most assignments(on and off campus should aim at solving practical solutions in the workplace.

The course allowed me to look back at previous concepts (and value judgements) regarding OHS management and forward (with increased conviction) to a more satisfying career, many of the Course units have had direct practical application in this transition.

Graduates generally found the course difficult.

Ballarat is still the centre of excellence, but a drift away from the engineering bias could see all this change. ‘Softer issues, such as Union agreements, are important, but will not eventually result in the decrease of events we all want.

Would like to see rehab and claims admin included in the Course.

Although this is anonymous you could work out who I am if you wanted to. I believe that the most valuable aspect of the course was living for 3 weeks every semester with approx 40 other OHS professionals. You can get educational qualifications anywhere but you would be pushed to recreate the environment that is created during the on campus sessions.

Suggest the Risk mgmt and environment subject be added to post grad/ Masters course as the profession is heading in this direction.

None of the questions seek info on accident investigation and event analysis or epidemiology as functions or useful prevention tools - should be included as an important part of any course.

Course was great. More practical aspects of machine guarding is necessary. It wasn’t specific enough.

Course did not espouse a particular viewpoint but presented a varied approach. Student were encouraged to challenge in a professional manner.
the thoughts and philosophies of the Course presenters, lecturers. Consequently I learned more

course offered no help in terms of the management of OHS issues

more tough engineering based elements / less superficial management units - perhaps some options

The technical skills gained during the Course enabled me to progress to a management position, however my management skills do not match my technical expertise. The addition of some basic managerial training ( ? as an elective ?? ) would be a useful adjunct to the course (as it was in '90 / '91)

Risk Sociology/Risk Philosophy - I found to be a bit removed from my expectations of the Course - not having had exposure to an academic facility (my nursing training was undertaken in a hospital) I found these subjects to be too abstract. The 'practical' subjects of Hazard Mgt, Hygiene, Risk Engineering, Electrical safety were far more beneficial and the basic concepts learned in these subjects have provided me with a solid grounding to undertake my current occupation.

...After a scientific and analytical background, this course gave me my first real insight and understanding of management.

This Questionnaire reflects the low scientific base units hazard mtg is working from. Where is - innovation and understanding wrt OHS

Course should give more attention to - rehab, welfare, general health and workers compensation. Managing training in OHS could also be included Course specs should match job specs in industry

OHM/OHS must blend with management practices and not be separated. Any course in OHM/OHS must reflect the promotion of the business. 80% course content must be work linked otherwise waste of time

As a professional Risk Mgr, involved with developing countries via the World Bank, I know from my numerous international contacts, as well as editor of the SIA Journal (5 years) this course is the best there is!

The Course provided theoretical support to the concepts of OHS management that I was practicing. The style of learning, ie assignments and on campus program, is my preferred way of study.

The Grad Dip OH Management has a high standing because of the quality of the Course

Excellent course eg Risk Phenomenology, Risk Management, Noise, Risk Sociology, Human Factors, Hygiene, Law

I thought Hazard Management could have been improved. Statistics - see comments Q 19. I don’t think many of the lecturers had teaching or adult education qualifications. This is an area that OHS can improve significantly.

There is a complexity of factors associated with safety, the contemporary approach is to re-design the hazard. Ballarat provides the theoretical and applied knowledge of health and safety which enhances the practical problem solving skills of students. It is vital that OHS prevention tactics be involved at the strategic management stage and not delegated to HR Manager. Does OH&S , quality assurance and TQM duplicate motivational focus? The main emphasis at Ballarat could be that their graduates, with the essentials of OHS, will offer management benefits to industry, government and society as well as themselves. Ballarat may have to squeeze into its ???? workers comp/bit of rehab and product liability.
I have recommended the Course to others looking for a broad base from which to build an OHS career.

I value the knowledge and experience gained from Ballarat. This will really come into its own in future career moves, eg as a Safety Manager. Whilst there could be modifications to the Courses these would be only minor. I remain convinced that this is the best in Australia, mainly through the commitment of people such as Dennis Else, Steve Cowley, Bob Goodbourn etc.

As a trade union official I found the course useful as it enables me to understand how management should tackle OHS and thus how to advise management on strategies they should pursue to improve OHS.

I found the Course very useful and personally satisfying. I believe it complements my qualifications in engineering very well. The Course covered most subjects however in my year(s) there was almost no information on training adults which I believe is frequently a part of an OHS practitioners work.

Biggest disappointment is that the Ballarat OHM Course is not acknowledged by the Victorian Occupational Health and Safety Authority.

The area of external lecturers has not been explored -this would be useful particularly re the 'continuous improvement of the Course's contact with visiting lecturers, meeting schedules for marking assignments is an ongoing problem.

Time spent on stats could be reduced....many OHS profs have little or no practical use for some of the info in the latter stats units.

The Course created a sound basis for me being able to diversify my skills into other areas, particularly as they relate to public safety and legal/civil liabilities.

My time at Ballarat was both enjoyable and rewarding over the first 11 years since I graduated I have continually promoted OHM to colleagues and associates, many of whom have gone on to graduate. I will continue to do so.