PROGRAM REVIEW REPORT

on the

CARPENTRY PROGRAM

JANUARY, 1999

SUMMARY

The Carpentry Program Review Committee was impressed by the instructional quality of the Residential Construction and Carpentry Apprenticeship programs. The dedication and expertise of the Carpentry instructors has been the foundation for the success of students in these programs. Likewise, students have been very impressed with the quality of instruction as well as with the practical experience of the house building project in the Residential Construction program.

Unfortunately, the department is constrained by the provincially-mandated curriculum for the Carpentry Apprenticeship program. While the six-week training period of the apprenticeship program is seen as too short by students, the curriculum is fraught with inconsistencies and is not being updated to changes in industry. As a result, its growing obsolescence will lead to a teaching of Carpentry "history" if revisions are not made promptly.

Recognizing the limitations of departmental change to the curriculum, the Committee recommends that strong political pressure be continued to persuade the Ministry to change the Carpentry Apprenticeship curriculum and to establish math requirements for apprenticeship students. To aid in this process, a revitalization of the Program Advisory Committee is recommended.

In order to improve the program's success, the Committee recommends several other changes. An increase in the supplies budget and the purchase of much-needed tools and equipment is required. In addition, students would benefit from the availability of résumé writing skills, job search skills, and oral communication skills.

Finally, UCC must anticipate the likelihood of mandatory certification in the industry and be prepared for its potential implications on the size and offering of the Carpentry program at UCC.

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CARPENTRY PROGRAM REVIEW
EVALUATION COMMITTEE MEMBERS

CHAIR	Rod Michell, Instructor, English, UCC
ASSISTANT CHAIR	Karl Larsen, Assistant Professor, Forestry and Natural Resource Science, UCC
EXTERNAL REPRESENTATIVE	Nick Ostoforoff, U.B. of Carpenters 1540
RESOURCE PERSON	Denis Morin, Instructor, Carpentry, UCC
DEPARTMENTAL CHAIR	Marty Old, Chair, Construction Trades, UCC
DIVISIONAL DEAN	Ralph Finch, Dean, Trades and Technology, UCC
REVIEW COORDINATORS	Heather Shand, Acting Director, Institutional Research & Planning, UCC
	Karen Grigoleit, Research Analyst, Institutional Research & Planning, UCC

CRONOLOGY OF THE CARPENTRY PROGRAM REVIEW

The review of the Carpentry program began on April 7, 1998. A planning meeting between Denis Morin (Instructor, Construction Trades) and Alastair Watt (Associate Director, Institutional Research and Planning) was held to discuss program review procedures and questionnaire design, with a further meeting held on April 27, 1998 to refine and finalize the questionnaire design.

Current Residential Construction and Carpentry Apprentice students were surveyed in class on May 5, 1998 and June 10, 1998 respectively. Using student lists generated from Colleague (UCC's student information system), the Office of Institutional Research and Planning sent questionnaires to former students on May 29, 1998. Faculty and advisory committee surveys were sent out May 7, 1998 and, from lists supplied by Denis Morin and Mark Poulsen, employer surveys were sent out on June 15, 1998 and June 25, 1998.

A second mailing was sent to former students and employers on June 19, 1998 and July 20, 1998, respectively. Telephone communication commenced on July 14, 1998 to contact non-responding former students and on July 29, 1998 to contact non-responding employers. Faculty and Advisory committee members were similarly contacted between May 28, 1998 and August 14, 1998.

The cut-off date for all responses was August 14, 1998, and the Carpentry Evaluation Committee met on September 24-25, 1998 to analyze the data and formulate its report on the program.

PROGRAM BACKGROUND

After being shut down for approximately two years, the Carpentry program at UCC was reinstated in the Fall of 1990, offering both entry-level and apprenticeship training. To avoid impacting existing Carpentry programs in the Province, apprenticeship student numbers were purposely low. Entry-level student numbers were at capacity.

The entry-level program ran for one season on the old TRAC format, which produced graduates with poor working skills. To make the program more realistic, it was decided to go to the lock-step model and the major project was the framing of a house in the community. Entry-level ran two five-month programs per year, with improved, but limited success at job placements for its graduates. Upon consultation with our PAC (Program Advisory Committee), it was decided we were producing more graduates than the industry could absorb.

In the Fall of 1993, the carpentry entry-level program switched to a single entry, nine-month program with a capacity of 14 students who build a house from start to finish. Graduates from this program were, and still are, in high demand by local industry. The entry-level program at UCC, Residential Construction, has gained such a good reputation that we are now experiencing applications from throughout the Province and our number of applicants is around four times our capacity. Many graduates of the entry-level program are seen returning to complete their apprenticeship in carpentry.

The apprenticeship side of the program saw a steady increase in the number of students attending as the years progressed. Today, we are experiencing full attendance for seven intakes per school year with the odd RAC (Request for Additional Courses) added to our plate.

The graduates from our apprenticeship program do well on their Inter-provincial Exams. As well, industry, through our PAC, report satisfaction with the calibre of skills the apprentices offer on the job. Many carpentry apprentices are insisting on attending UCC for their technical training, even some from other regions. Our reputation among the apprentices is second to none; however, we are striving for improvement.

ADMISSIONS DATA AND PERFORMANCE STATISTICS

a) Educational Requirements:

1) B.C. Grade 10 or Mature Student Status (Grade 12 preferred);
2) Successful completion of CAT 19 test.

b) General Requirements:

1) Canadian Citizenship or Landed Immigrant Status;
2) Interview with Program Coordinator;
3) Must have safety boots and glasses.

Program Capacity:

The Residential Construction program is funded for 17.0 FTEs (full-time equivalents) per annum. However, due to safety regulations and other constraints, the capacity for enrollment is 14.0 FTEs. Apprenticeship training for years 1, 2, 3 and 4 of the Carpentry Program last six weeks each year. The number enrolled is determined by the Apprenticeship Board.

Program Demand:

Residential Construction

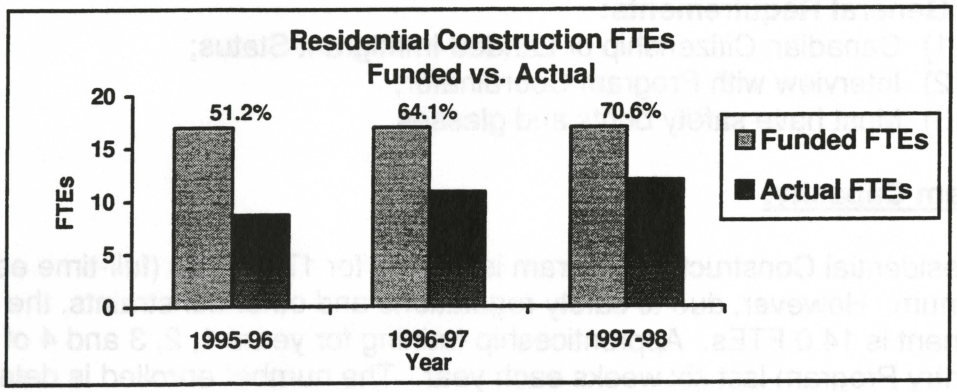
Year (Sept-Aug)	Enrolled	Waitlisted	Incomplete/Denied	Total Applications
1994 - 95	14	4	23	41
1995 - 96	14	9	18	41
1996 - 97	14	4	10	28
1997 - 98	14	5	14	33
1998 - 99	14	8	27	49

Carpentry Apprentice

Year (Sept-Aug)	Enrolled
1994 - 95	118
1995 - 96	83
1996 - 97	74
1997 - 98	84

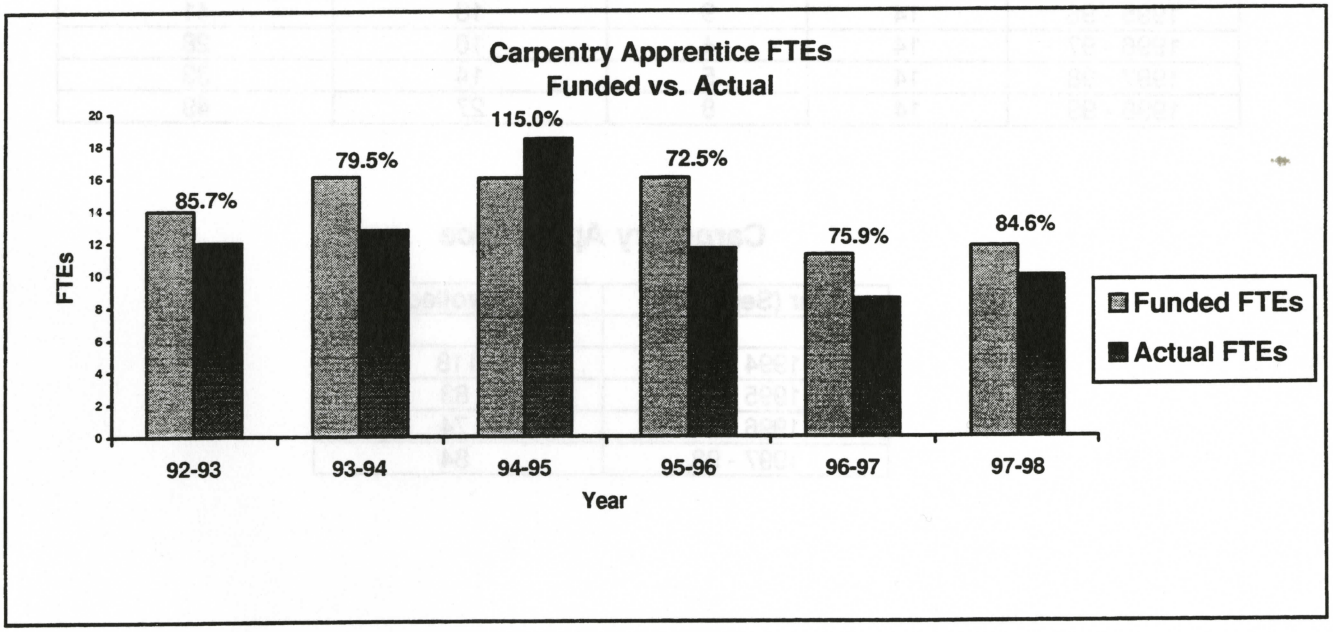
RESIDENTIAL CONSTRUCTION UTILIZATION RATES[1]: 1995 - 1998

	1995 - 96	1996 - 97	1997 - 98
Funded FTE:	17.0	17.0	17.0
Actual FTE:	8.7	10.9	12.0
Utilization Rate:	51.2	64.1	70.6



CARPENTRY APPRENTICESHIP PROGRAM UTILIZATION RATES: 1992 - 1998

	1992 - 93	1993 - 94	1994 - 95	1995 - 96	1996 - 97	1997 - 98
Funded FTE:	14.0	16.1	16.0	16.0	11.2	11.7
Actual FTE:	12.0	12.8	18.4	11.6	8.5	9.9
Utilization Rate:	85.7	79.5	115.0	72.5	75.9	84.6

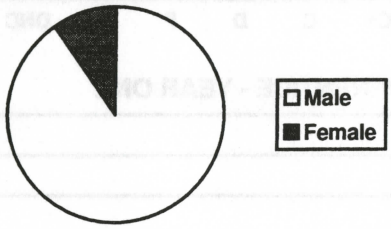


[1] Program "utilization rate" is the number of actual registrations divided by the number of funded seats. The Ministry of Advanced Education, Skills and Training sets great store in utilization rates as measures of efficiency.

GENDER RATIO

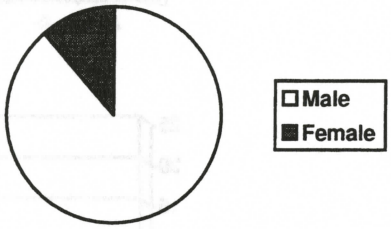
1995-1997 Program Intake

Female:	5	10%
Male:	47	90%
Total:	**52**	**100%**



1996-1998 Program Graduates

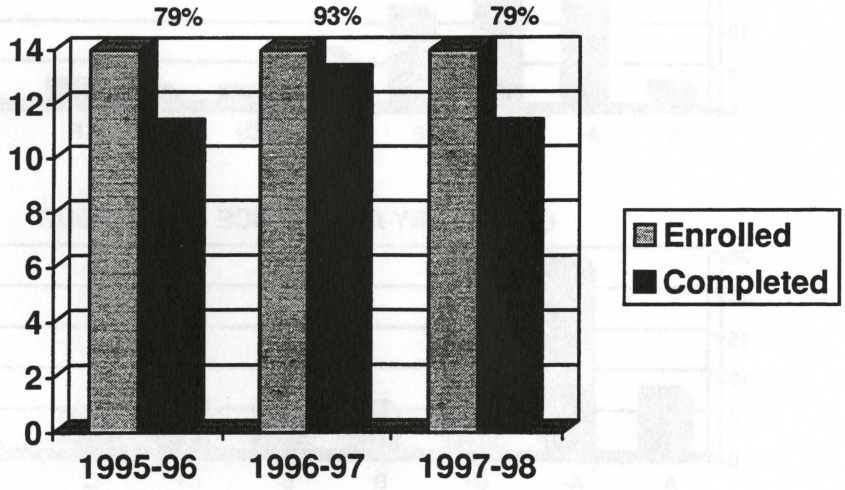
Female:	4	11%
Male:	31	89%
Total:	**35**	**100%**



RESIDENTIAL CONSTRUCTION COMPLETION RATES

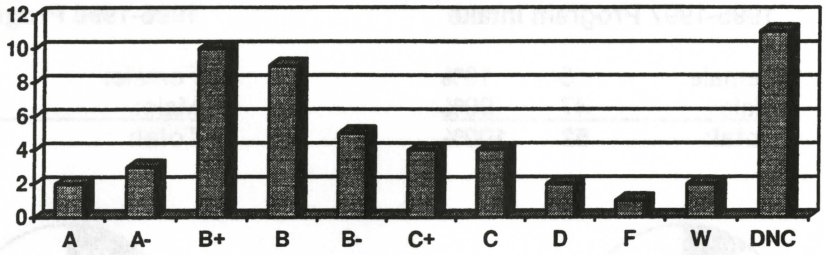
	1995-96	1996-97	1997-98
Enrolled	14	14	14
Completed	11	13	11
Completion Rate	79%	93%	79%

Residential Construction Completion Rates

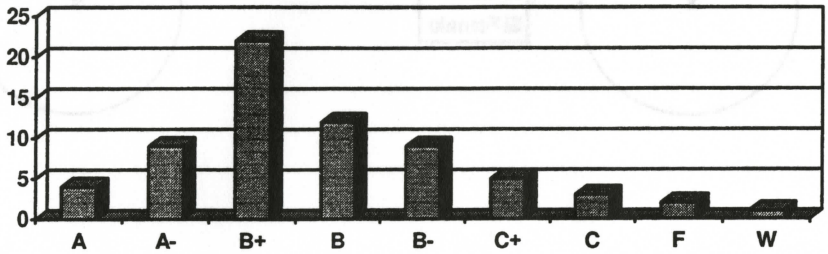


GRADE DISTRIBUTIONS: 95/FA - 98/WI

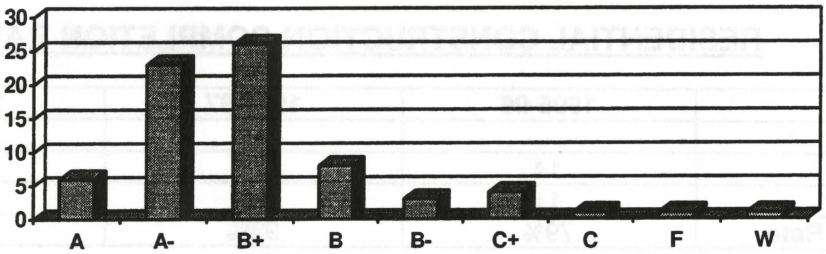
RESIDENTIAL CONSTRUCTION



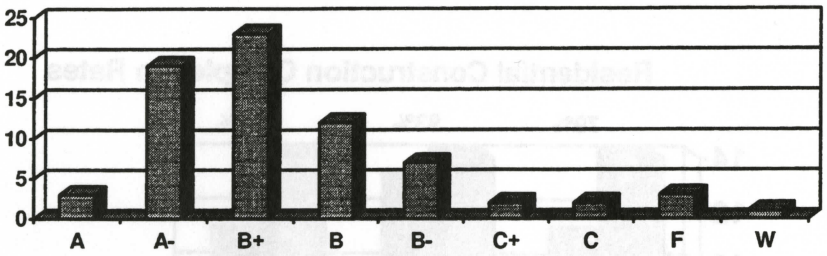
CARPENTRY APPRENTICE - YEAR ONE



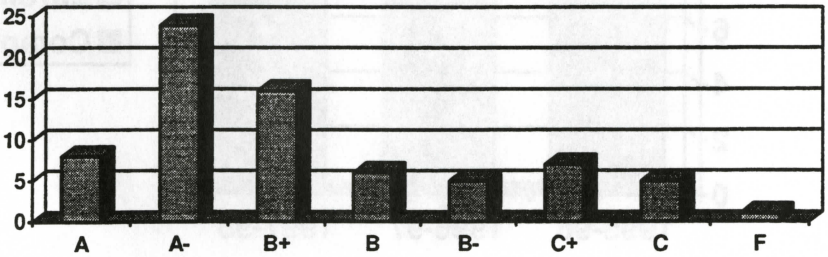
CARPENTRY APPRENTICE - YEAR TWO



CARPENTRY APPRENTICE - YEAR THREE



CARPENTRY APPRENTICE - YEAR FOUR



EMPLOYMENT PROSPECTS

(Source: Work Futures, British Columbia Occupational Outlooks)

TRADES HELPERS, CONSTRUCTION, LABOURERS AND RELATED OCCUPATIONS

Nature of the Work

Trade helpers carry out a variety of duties to assist skilled tradespeople. Construction labourers and related workers work on construction and other work sites doing general labour tasks, usually under the direction of a more senior worker. Labourers and helpers do a lot of heavy work that helps more senior workers get on with the job.

Education And Training

Workers require some secondary school education, and may require Grade 12. Construction workers may need basic construction skills and complete safety courses. Carpenter's helpers must be able to use basic hand and power tools, read instructions and possibly blueprints. Basic mathematics may be required to measure and cut wood and materials to fit a design.

Employment Prospects

This is a very large group of workers. In 1995, there were 23,220 people in this occupation in B.C., up from 20,580 in 1990. About three-quarters of this group work as general labourers, mostly in construction. Between 1995 and 2005, a total of almost 5,500 openings are expected province-wide in this field. However, growth is expected to grow more slowly than the average for all occupations. Factors such as oversupply of residential and commercial buildings are holding back overall growth in construction.

Trends And Projections

	1990	1995	2005
Number Employed	20,580	23,220	26,060
Estimated Openings: 1995-2005			
	Growth (Net)	**Attrition**	**Total**
	2,830	2,630	5,460
Annual Growth: 1995-2005	1.2%		

CARPENTERS

Nature of the Work

Carpenters build and repair structures made of wood, wood-substitutes and other materials. Plastics and metals are increasingly being used in construction. Carpenters must read and interpret plans in order to understand what they are to build. Using architectural drawings, they operate workworking machines to cut and form parts. Then they fit parts and subassemblies together to form complete units. Carpenters build foundations, install floor beams, lay subflooring, erect walls and roof systems, and fit and install trim items. They may also supervise apprentices and prepare cost estimates for clients. Increasingly, carpenters are installing pre-manufactured assemblies, resulting in a decreased demand for workers on-site.

Education and Training

Completion of a four-year apprenticeship is the common requirement for carpenters. Upon completion of the apprenticeship, an apprentice must pass an inter-provincial standards examination to receive a Certificate of Qualification with an inter-provincial Red Seal endorsement.

Employment Prospects

Current trends are indicating that there will be decreasing numbers of union positions, although this occupation has traditionally been highly unionized. About 16% of carpenters are self-employed which is higher than the workforce average of 11% self-employment.

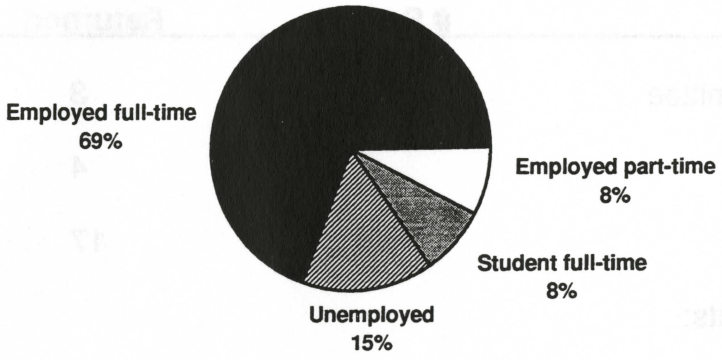
Employment in carpentry trades is forecast to grow at about the average for all occupations through to the year 2005. It is estimated that about 3,080 new jobs will be created between 1995 and 2005, and 2,700 replacement jobs will become available. Industry sources agree that there will be employment growth, but that projections are too high. Furthermore, a lot of competition is expected for the jobs available.

Trends And Projections

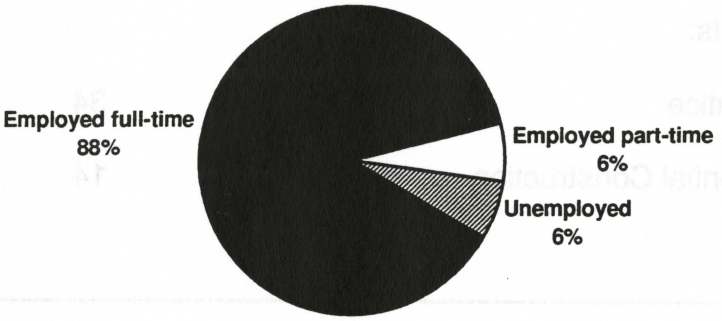
	1990	1995	2005
Number Employed	16,530	18,580	21,660
Estimated Openings: 1995-2005			
	Growth (Net)	**Attrition**	**Total**
	3,080	2,700	5,770
Annual Growth: 1995-2005	1.6%		

EMPLOYMENT RATES OF FORMER STUDENTS

Residential Construction

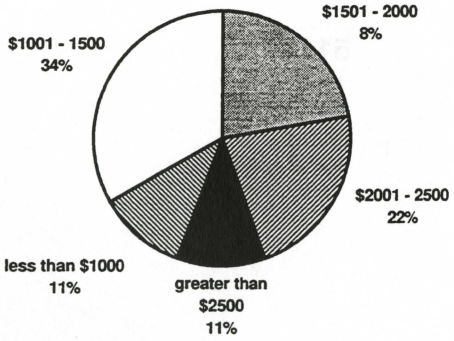


Carpentry Apprentice

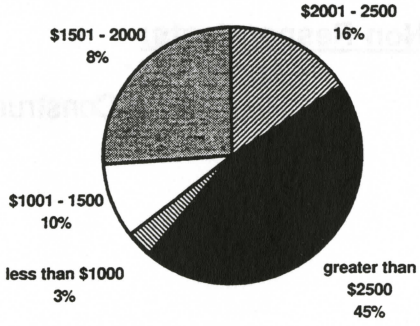


CURRENT SALARIES OF FORMER STUDENTS

Residential Construction



Carpentry Apprentice



TABULAR SUMMARY OF QUESTIONNAIRE RESPONSES

Recipient	# Sent	# Completed & Returned	% Returned
Advisory Committee	8	3	38%
Faculty	4	4	100%
Employers	43	17	40%
Current Students:			
- Apprentice	39	35	90%
- Residential Construction	12	12	100%
Former Students:			
- Apprentice	114	34	30%
- Residential Construction	32	14	44%
TOTAL	**252**	**119**	**47%**

Former Students:

Returned by Post Office/Unlocated:
- Apprentice: 29
- Residential Construction: 4

Non-Respondents:
- Apprentice: 51
- Residential Construction: 14

SUMMARY OF QUESTIONNAIRE RESPONSES

RESIDENTIAL CONSTRUCTION PROGRAM

Current Students

The results of the Current Student Survey were almost uniformly positive, and serve as a strong endorsement of the program and of the instructors and the department. The frequent high scores indicate that the present form of the program meets students' needs, and is delivered with remarkable success. Furthermore, the gender and age-range data reveal that the appeal and success include a wide-ranging clientele. The house-building project emerged clearly as the central strength of the program, providing real-world relevance, a high degree of practicality and hands-on experience in a full range of construction skills. Along with that, the skills of the course instructors received full and frequent acknowledgment.

Four areas prompt further consideration: (1) the lack of coverage of résumé skills, and (2) of oral communication skills; (3) the relevance and cost of the curriculum in general and with respect to the new WCB safety regulations; and (4) the lack of sufficient portable power tools for on-site work. All of these were agreed to be important to students in this program, and are the subject of recommendations. One specific recommendation in the student survey regarding earlier yearly start and completion times has already been addressed, as has the length of the course, which is now nine months instead of six months.

Former Students

As with the current student responses, those in the Former Student Survey reflect a strong measure of support for the concept of the program itself and for the way it has been delivered. The instructor was clearly identified as the major contributor to the success of the students. The range of the course, along with its mixture of theory and true practicality, and its simulation of genuine workplace experience received frequent comment.

In addition to the issues of résumé writing and job-search skills, already addressed under the Current Student Survey and in the Recommendations, there was another initial concern regarding seemingly low graduate employment. Although the numbers indicating the relevance of the program training in getting a job seemed low, it was pointed out by both former students and faculty members that not a high number of Residential Construction students are necessarily looking for employment in construction after completing the program. Furthermore, attempts by Institutional Research staff to contact former students by phone most likely resulted in a bias towards reaching former students who are currently unemployed.

CARPENTRY APPRENTICESHIP PROGRAM

Current Students

The students in the Carpentry Apprenticeship program, like those in the Residential Construction program, find a wide range of strengths in the program, particularly the balance between theory and practice, but especially the quality of the instruction and the motivation, experience and accessibility of the instructors. The remarkably consistent high scores of the responses are clear evidence of the health of the program and of the expertise, resourcefulness and commitment of the Carpentry Department faculty members. Concerns identified were few and tended to reflect those of the Residential Construction program regarding résumé writing and oral communication skills, on the one hand, or the quality and relevance of the curriculum and curriculum materials, all of which have already been mentioned. The six-week period of time allotted for the training is also identified as an issue, but remains beyond the control of the Carpentry Department as the curriculum is dictated by the provincial ministries.

Former Students

The same pattern of consistently high scores is evident in the responses of the former Carpentry Apprentice students. Here, the indication that many students, when on the job, continue to use a wide range of the skills taught validates the thoroughness and relevance of the instruction. This conclusion is supported also by the pattern of scores regarding Program Content, Procedures and Resources. Since most of the items in that section of the survey, except curriculum, fall within the control of the Carpentry Department the steady high ratings are strong testimony of the quality of the instructors and instruction. The questionable relevance of parts of the curriculum and its inconsistency with the Inter-provincial Exam (which were often identified as problems along with lack of time) are addressed in the Recommendations.

PROGRAM ADVISORY COMMITTEE

The few responses from members of the Program Advisory Committee, in spite of considerable efforts to elicit replies, make conclusions from this survey hard to draw. The responses do not identify any new concerns with the program in addition to those already raised in the areas of résumé preparation and oral communication. Comments on trends in the economy, on reduction of training allowances for students, and on the development of new equipment and materials were noted as valid, but reaction to them falls outside of the capacity of the department and the program. The low response rate of the Program Advisory Committee prompted some concern, and is itself the subject of a recommendation.

EMPLOYERS

The responses of the employers to their survey reflect an encouraging level of satisfaction with the content and delivery of the program, and with the level of knowledge and performance of its graduates. Clearly, the program is producing highly employable graduates who have the skills and expertise to perform well on the job. Characteristically, the employers have some slight reservation about the program's responsiveness to changes in the industry. Although some of the employer suggestions have merit (e.g. training in the use of the new styrofoam forms), the ability of the program to respond immediately is limited both by a provincially dictated curriculum, and, in the area of new technology, by the costs of much of the latest equipment.

FACULTY

Predictably, the results of the survey of the Carpentry program faculty reflect the instructors' commitment to the program and the same belief in its quality and worth that the current and former students also reflected in their scores and written comments. They value the fact that their students leave the program with the immediate ability to apply their skills on the job-site, and that they go equipped with a comprehensive range of skills--both qualities clearly endorsed by the results of the Employers' survey. Nonetheless, with the interests of their programs and students uppermost in mind, the faculty members are fully aware of the limitations they face. Several that they identify have been noted elsewhere: the outdated nature of the curriculum and the inadequacy of a system to maintain its relevance; the need for effective entrance testing especially in mathematics; and the lack of job-search and oral communication skills training.

Others require mention because they have the potential to compromise this immensely successful program. The faculty have expressed that professional development funds are inadequate; furthermore, faculty members are unable to take advantage of allotted funds as replacement faculty are not available. They also note that the opportunity to develop new teaching methods or to incorporate new technology into their teaching is limited, not only by the fixed nature of the curriculum, but also by lack of time and access to new tools and technology.

The faculty members are aware, however, of their programs' strengths which include their own dedication, the support they receive from local industry, and the house building project that forms the core of the Residential Construction program. The house project is a true revenue-generating venture and a portion of its proceeds provides funds for student bursaries.

STRENGTHS OF THE CARPENTRY PROGRAM

1. Program Quality

The Carpentry program at UCC is clearly a strong one, and one that continues to thrive. Such comments from students and former students as, "The course is great...," and "An excellent training program is offered by UCC. . .", and "I would go back to UCC in Kamloops if I had other courses to take," are typical of the written comments that students volunteered that confirm the impact the program has had. Comments of this kind, along with Overall Program Satisfaction scores that range from 3.26 to 3.58 (on a scale of 4.00) from students, amount to a substantial endorsement of the program. The quality of the program even prompted one former student to claim, "I have tried to get some of my friends to sign up...". The Industry Training and Apprenticeship Commission (ITAC) representatives too were able to confirm that the 4th Year Apprentice students they had recently interviewed gave the UCC program a glowing report. And if one extrapolates from the responses of the employers in their survey regarding the attributes of the graduates they receive, they too feel that the UCC program continues to be extremely effective and reliable.

2. Faculty

What makes the program strong emerges clearly in the data from all sources reviewed by the Committee, and also from those individuals the Committee interviewed. The common strength between the two separate programs is unquestionably the faculty who teach the courses. The department is fortunate to have the benefit of longtime trade and teaching experience in its full time faculty that is complemented by the recent experience and varied backgrounds of the part time faculty. But whether it is in the Residential Construction program or in the Carpentry Apprenticeship program, the students uniformly single out the instructors for their knowledge, skill and commitment. "I found that our instructor was probably the entire class's major strength!" is typical of the kind of appreciation students chose to express. Moreover, the qualities that are given recognition include not only knowledge and skill in the trade itself, but the more personal and indispensable qualities such as "dedication", "patience", and taking "the time and effort" to show a student the ropes. Even the department faculty themselves acknowledge that it is the "devotion of the staff" that is the major strength of their program.

3. House Building Project

Another undeniable strength of the program is the house building project that forms the practical heart of the Residential Construction program. The program faculty themselves acknowledge the contribution this project makes to their program's strength; but this project can be justifiably praised on a number of more objective grounds too. Both current and former students of the course repeatedly speak of the house project as its strength, "From start to finish to do a house" as one student expressed it, or "to be involved in every step including ordering materials and to see the finished product," in the words of another. The result of this project is "a well developed program in comparison to many others in the province". Furthermore, over the years since its

inception, this project has gained a positive reputation with other institutions. One reason for this is the working relationships that it fosters between the Carpentry department and local industry, who are the donors of the materials for the project. The program faculty themselves acknowledge that "the support from industry" is a strength of the program, and the continual liaison required for the house project helps develop that support in a significant way. Moreover, by directly involving local industry the house building project provides opportunities for students to meet potential employers in the local area. The "strength" the house project gives to the Carpentry program shows in another way too. As a revenue-generating project, it is contributing directly to student scholarships in the trades area, and to the purchase of equipment in the Trades and Technology division.

4. Student Outcomes

One essential measure of the strength of any program is found in the employability of its students. Here, the data from former students confirms the program's success. According to Student Outcomes Data for 1995-1997 inclusive, an average of 65% of Residential Construction program students and 82% of Carpentry Apprentice students were employed in training-related jobs, at a time when the provincial economy is in something of a downturn. These figures confirm the program faculty's own admission that the strength of their program lies in large part in the diverse skills their students have acquired, and in the ability of the students to apply these trade skills successfully on the job site. Furthermore, as a final measure of the strength of the program, it is also important to note that whatever their employment status, students are satisfied with both programs. In 1997, 100% of former Residential Construction students and 95% of former Carpentry Apprentice students reported that they had "completely" or "mostly" met their objectives in taking their program at UCC.

AREAS OF THE CARPENTRY PROGRAM THAT CAN BE IMPROVED
(with Recommendations)

1. CURRICULUM

As noted in almost all the summaries of the surveys, the state of the curriculum materials in both the Residential Construction program and the Carpentry Apprenticeship program is an on-going and serious cause for concern. The problems lie with the curriculum content itself--its obsolescence, its lack of ability to respond to rapid industry change, its lack of continuity with the National Occupational Analyses, its lack of internal consistency, and with its occasional inconsistency and inaccuracy with the testing. **Over these severe problems the Carpentry Department and UCC have no control**, except to a small degree in the area of the testing. Although these limitations of the curriculum are widely acknowledged throughout the post-secondary system and even admitted by the government, they remain to be dealt with. It is testimony to the skill and resourcefulness of the program instructors, and clearly of the students also, that the program graduates meet with the success they do in spite of the condition of the learning materials. Nonetheless, pressure must continue to be applied for wholesale curriculum revision. With the serious need to revise the curriculum, the Review Committee recommends:

(a) That the department collaborate with its Program Advisory Committee, and with the local ITAC representatives, as well as with other institutions via their Provincial Articulation Committee, to bring strong, concerted pressure on the Trade Advisory Council (TAC) and the Ministry for funds for wholesale curriculum change:

(1) to make its content up-to-date; and
(2) internally consistent from years 1 through 4; and
(3) to bring it in line with the National Occupational Analyses; and
(4) to purge it of extensive accumulated errors; and
(5) to overhaul and update the computer test-bank.

ACTION: Program Advisory Committee; Dean, Trades & Technology

2. EQUIPMENT

The recent relocation of trades training into the new Trades and Technology Building means that the Carpentry program now operates in a different physical area than it used to, one that is functionally smaller than the previous location. As a result of resourceful

allocation of space this area has accommodated all the required shop equipment from the previous location, but with no significant room for additional stationary equipment. Thus, though there were suggestions in the surveys that the addition of items of shop equipment might enhance student productivity during shop time, the Committee feels it is not practical to make that recommendation at this time. However, the house-building project of the Residential Construction program, which depends for its completion not so much on shop equipment but on portable power tools on-site, is in need of additional equipment and on-site storage facilities. Notwithstanding the fact that a major new equipment funding campaign is being planned for the Trades & Technology area, the Review Committee recommends:

(a) That additional portable power tools and scaffolding be acquired for on-site activities in the Residential Construction program.

ACTION: Chair, Construction Trades; Carpentry Faculty

(b) That a secure on-site storage unit be obtained that will adequately store the materials and tools used during the construction of the Residential Construction house project.

ACTION: Chair, Construction Trades; Carpentry Faculty

3. PROGRAM ADVISORY COMMITTEE

Members of the Program Advisory Committee and of the Carpentry program faculty confirm that there is, in general, an effective working relationship between the two groups. Meetings occur regularly though not frequently, and personal communications are cordial. However, the Review Committee was puzzled and concerned by the low response rate of Program Advisory Committee members, despite persistent efforts by Institutional Research staff to elicit responses. Only three out of eight responded to the survey even though the Program Advisory Committee is expected to have the best interests of the program at heart. Recognizing the absolutely vital role played by Program Advisory Committees in every career and trade program, and due to the fact that under *UCC Program Advisory Committees - Terms of Reference (Regulations R-2013)* Program Advisory Committees are mandated to participate in the program review process, the Review Committee recommends:

(a) That a review be done of the current members of the Program Advisory Committee with respect to their continued membership, and that new

members be solicited.

ACTION: Vice-President, Instruction and Student Services; Dean, Trades & Technology

Given the central importance of liaison between the program and the Apprenticeship Branch, the ITAC is represented on the Program Advisory Committee (ex-officio). However, given the recent establishment of an ITAC office in town, and the Review Committee specifically recommends:

(b) That a local Industry Training and Apprenticeship Commission (ITAC) representative be invited to sit on the Evaluation Committee for any future Carpentry program reviews.

ACTION: Dean, Trades & Technology

4. PROGRAM DEVELOPMENT

The Committee identified a number of factors that may affect opportunities for the development of training in the Carpentry program, and for which the program ought to prepare. One of these factors is the general slowdown in the provincial economy which may provide individuals with the incentive and the opportunity to begin or to complete their training. A more predictable factor is the provincial government's policy of mandatory certification in the trades, one result of which may be a significant increase in the numbers of people obliged to complete their apprenticeship training. A third factor is the general growth of small business opportunities and the accompanying entrepreneurial climate in the economy, which have developed a clientele of students interested not just in the technical training but in the skills of business management in the construction field. The Review Committee feels that, with the success the program continues to have and the reputation it has justifiably garnered as a result, opportunities for expansion of training should be seriously examined. The examination should include both the possibility for additional classes of the Residential Construction and Carpentry Apprenticeship training and also possibilities for new courses to meet evolving training interests and needs. The Committee recommends the following therefore:

(a) That the issue of mandatory certification be closely monitored via the Industry Training and Apprenticeship Commission and the Trade Advisory Council and its implications gauged so that steps can be taken to

anticipate the possible significant increase in students, the need for additional classes, and the provision of fully qualified additional instructors.

ACTION: Dean, Trades & Technology; Chair, Construction Trades; Carpentry Faculty

(b) That an assessment be made of the market for training that combines construction trades skills with skills in business and construction management in order to establish the viability of offering such courses through Continuing Education.

ACTION: Dean, Trades & Technology; Chair, Construction Trades

Since new courses, if developed, will most probably require additional space, and since the Carpentry programs' space in the new Trades and Technology building is now filled to capacity in its daytime schedule, the Committee also recommends:

(c) That the issue of the space for expansion of program offerings be thoroughly examined as a first step, and that full utilization of timetabling opportunities, day and evening, be assessed.

ACTION: Dean, Trades & Technology; Chair, Construction Trades; Carpentry Faculty

5. BUDGET

During the course of the evaluation process, it became clear to the Review Committee that the Carpentry program is, like most construction training programs, very dependent upon supplies and consumable items as essential teaching elements. Naturally, this makes the program very vulnerable to any reduction in the money allocated for supplies in its budget. While the overall success of the program, as this report records, is unquestioned, part of it has been achieved only through the ingenuity and resourcefulness of the instructors in continually soliciting and husbanding materials for student use. The Committee feels that the provision of supplies that are essential to students' successful completion of their training ought to be placed upon a firmer footing than it appears to be at certain times. Furthermore, it is clear that the acquisition of needed equipment (see Recommendation 2(a)) may place unsustainable pressure upon the already stressed supplies budget. The Committee sees any situation in which the supplies budget for this program is put under stress as likely to be directly detrimental to

the continued quality of the program, and therefore recommends:

(a) **That the supplies budget be accurately assessed in relation to program needs, and increased as necessary to allow for the acquisition of needed equipment and materials.**

ACTION: Dean, Trades & Technology; Chair, Construction Trades; Carpentry Faculty

6. PROFESSIONAL DEVELOPMENT

The Review Committee has acknowledged fully the extent to which the Carpentry program derives its strength and success from its faculty. The Committee is concerned, however, at the possible implications of some uncharacteristically low scores in some items in the Faculty Survey that have to do with teaching and with opportunities to develop professionally. It seems clear to the Committee that, in spite of their acknowledgment of improvements in their instruction in recent years, the Program faculty members feel some degree of frustration in attempts to make further improvements in teaching and in incorporation of new technology. Furthermore, they are doubtful about the adequacy of the funds available to them for their professional development needs. In addition, faculty members are unable to take advantage of allotted funds as replacement faculty are not available. These concerns point very clearly in the Committee's view to a need for enhanced professional development time for both full-time and term-certain instructors. Because the continued growth of instructors, professionally and instructionally, is vital to the continued success, and possible expansion, of this already successful program, the Review Committee strongly recommends:

(a) **That the Carpentry program instructors be provided with sufficient release time and professional development funding to maintain currency in their field, and develop ways of incorporating the most recent technological innovations and industrial practices into the curriculum.**

ACTION: Dean, Trades & Technology

Furthermore, the Review Committee recognizes the concerns expressed by the faculty about the state of the curriculum, which has also been the source of comment in the student surveys. The work that the instructors currently do to supplement a flawed curriculum in order to prepare students adequately for their Inter-provincial Exam, clearly, in the Committee's view, needs to be formally provided for until the curriculum is

subjected to wholesale changes. Therefore the Committee recommends:

(b) That with the present deplorable state of some of the provincially-developed curriculum, time and resources be provided for instructors to do at least some interim modifications to the curriculum materials, until a full, provincially funded curriculum revision is undertaken.

ACTION: Dean, Trades & Technology

7. STUDENT SUCCESS

The introduction of the Residential Construction program with its house building project and with its equivalency to Year 1 of the Carpentry Apprenticeship training has clearly contributed significantly to student motivation and success. However, as with any program of instruction, there are ways in which the success of the students can be enhanced. One problem which has continued to surface over the years is the lack of competence in those mathematical skills that are foundational to many aspects of Carpentry. These skills in math are a point of comment from the students themselves, as well as from the program faculty, and from employers. In the Residential Construction program, UCC mandates Canadian Achievement Test (CAT) testing prior to entry. However, UCC does not have the authority to implement the same for Carpentry Apprentice students. Furthermore, although the math skills of Carpentry Apprentice students are monitored by the program faculty and any deficiencies are reported to the Apprenticeship counsellors, some of those students continue to manifest difficulties with mathematics, not only at the entry-level, but also in subsequent years. For that reason, the Review Committee recommends:

(a) That the Program Advisory Committee lobby the apprenticeship counsellors to ensure that Carpentry Apprentice students with insufficient math skills, as indicated by Carpentry faculty, be required to upgrade their math prior to continuing with their next year of apprenticeship classes.

ACTION: Program Advisory Committee

(b) That the Program Advisory Committee lobby the apprenticeship counsellors to establish mandatory math requirements for Carpentry Apprentices so that they are able to succeed in the program.

ACTION: Program Advisory Committee

Both components of the Carpentry program balance instruction of theory with application of that theory in practical activities conducted in the shop or on the building site. In both settings, however, there are limitations to the extent to which hands-on

practice can be engaged in. In the Residential Construction program, it is the practical necessity of completing the project within the timelines as well as the limited number of certain tasks that may limit student access to some of the practical work. In the Carpentry Apprenticeship training it is, likewise, the brief course duration, but also the limitations of equipment and space in the shop that may restrict opportunities for practical work. Until other solutions to this can be found, and in order to forestall further student frustration, the Committee recommends:

(c) That where possible, modules be constructed with additional funds (generated in Recommendation 5(a)) so that students have the opportunity to gain experience on specific skills (such as hanging doors and installing windows) in the shop.

ACTION: Carpentry Faculty

Students in the Carpentry Apprenticeship classes are, almost without exception, already employed. It is the students in the Residential Construction program who are chiefly the ones looking for jobs upon completion. Although the Residential Construction program, as already noted under section on Program Strengths, works closely with, and has strong support from, local industry, the comments of students in that program suggest that more could be done in a structured way to connect students in the program with potential employers in the community. Following the success of the first Appreciation Barbeque, held to honour materials donors, the Review Committee recommends:

(d) That arrangements be made in the Residential Construction program to connect students with local employers by inviting both students and material donors to an annual Appreciation Barbeque, upon completion of the house.

ACTION: Carpentry Faculty

In examining the survey results, the Committee noted that two specific areas of curriculum were regularly assigned less than satisfactory ratings; these were résumé writing and job-search skills on the one hand, with scores that ranged from 1.25 to 1.73 (on a 4.00 scale), and oral communication skills on the other, with scores in the range from 2.25 to 2.92 (on a 4.00 scale). The fact that the lowest scores for each skill came from the Program faculty themselves in dictates one explanation: the time limits of the courses simply do not permit these skills to be a formal component of the curriculum. However, in raising the matter of these skills with committee members and with faculty and students, it became clear that both current employment pressures and the general requirements for employability in the construction field dictate that these skills be made available to students, even though it would have to be outside of the formal curriculum. Accordingly the Review Committee strongly recommends:

(e) That workshops on résumé writing and job search skills, linked specifically to construction employers' requirements, be made available to Residential

Construction students and, if required, to Carpentry Apprentice students, and that the UCC Student Employment Centre be solicited to conduct the workshops.

ACTION: Carpentry Faculty

(f) That oral communication skills including skills in conflict management and resolution, be made available as supplementary courses to the Residential Construction and Carpentry Apprentice students, and that Counselling and Student Services be contacted for possible use of internal university resources for these.

ACTION: Carpentry Faculty

APPENDIX A: METHODOLOGY

The data were collected in the following ways:

1) Consultation took place with Denis Morin, Instructor, Construction Trades, on the design of the surveys.

2) Surveys were administered to Residential Construction and Carpentry Apprentice former students, employers, faculty, current students and Advisory Committee members. All data were processed using SPSS for Windows to achieve mean responses. Subjective comments for each group were recorded separately and anonymously.

3) "Descriptive Data" on the Residential Construction and Carpentry Apprentice programs' objectives, course outlines, etc., were solicited from Denis Morin, Instructor, Carpentry.

4) Data on annual FTE utilization, graduation rates, gender and grade distributions were provided by the Office of Institutional Research.

5) The following people associated with the program participated in the review process or were interviewed:

   - Teresa Hilton, Former Residential Construction student
   - Sean Danchuk, Former Carpentry Apprentice student
   - Bill Pernitsky, Former Carpentry Apprentice student
   - Mike Brunn, Apprenticeship Coordinator, ITAC
   - Don Smith, Apprenticeship Counsellor, ITAC