Department of
Civil and Environmental Engineering

Civil Engineering Program
Alumni and Employer Surveys

Submitted to

Engineering Accreditation Commission of ABET, Inc.

Prepared
by the

May, 2011
The University of Massachusetts Dartmouth Center for Policy Analysis is a multidisciplinary research unit that promotes economic, social, and political development by providing research and technical assistance to client organizations. The Center for Policy Analysis offers custom designed research and technical analysis in the areas of economic development, public management, program evaluation and polling research for government agencies, non-profit organizations, private businesses, and educational institutions. The Center for Policy Analysis strives to erode the walls between research and teaching by training students in the techniques of applied social science and by conducting university and community based educational programs. The Center for Policy Analysis does not pursue a predetermined research agenda, but is a flexible research organization responding on a timely basis to the problems and issues identified by client agencies.

Clyde W. Barrow, Ph.D., Political Science
Director

EXECUTIVE BOARD

David Borges, M.P.A., Public Administration
Assistant Director/Senior Research Associate

Chris Eisenhart, Ph.D., English
Senior Research Associate

John Fobanjong, Ph.D., Political Science
Senior Research Associate

William Hogan, Ph.D., Economics
Senior Research Associate

Toby Huff, Ph.D., Sociology
Senior Research Associate

Susan Krumholz, J.D., Ph.D., Sociology
Senior Research Associate

Spencer Ladd, Ph.D., M.F.A., Design
Senior Research Associate

Robin A. Robinson, Psy.D, Ph.D., Social Welfare
Senior Research Associate

Gail Russell, M.S., Ed.D., Nursing
Senior Research Associate

Shawna E. Sweeney, Ph.D., Political Science
Senior Research Associate

Jeffrey Robinson, M.P.A., Public Administration
Adjunct Research Associate

Paul Vigeant, M.A., Public Administration
Adjunct Research Associate

Luther Wallin, M.R.P., Regional Planning
Senior Research Associate

EXECUTIVE STAFF

David Borges, M.P.A., Public Administration
Assistant Director/Senior Research Associate

Kevin Larson, Human Resources
Research Assistant

Nancy Trudel
Assistant to the Director

ADJUNCT RESEARCH ASSOCIATES

Paul Vigeant, M.A., Public Administration
SouthCoast Development Partnership

Correspondence and inquiries should be addressed to: Center for Policy Analysis, University of Massachusetts Dartmouth, 285 Old Westport Road, North Dartmouth, Massachusetts 02747-2300 (telephone: 508-990-9660; fax: 508-999-8374).

Copyright © Center for Policy Analysis. All rights reserved.

http://www.umassd.edu/seppce/centers/cfpa/

The information and analysis in this report does not represent an official statement or view of the University of Massachusetts.

Polling and Program Evaluation Research Series No. 96
 UMass Dartmouth Civil Engineering Program: Alumni and Employer Surveys

Table of Contents

EXECUTIVE SUMMARY ........................................................................................................ iii

1.00 INTRODUCTION .............................................................................................................. 1
  1.10 ALUMNI AND EMPLOYER SURVEY, 2003 TO 2010 .................................................. 2
  1.20 PROGRAM EDUCATIONAL OBJECTIVES ................................................................ 2

2.00 METHODOLOGY ............................................................................................................. 3
  2.10 ALUMNI SURVEY ........................................................................................................ 3
  2.20 EMPLOYER SURVEY .................................................................................................. 3

3.00 ALUMNI SURVEY RESULTS ........................................................................................... 4
  3.10 YEAR OF GRADUATION .............................................................................................. 4
  3.20 QUESTIONS RELATED TO EDUCATIONAL OBJECTIVE I: ENTER A CAREER FOR WHICH A CIVIL ENGINEERING DEGREE IS USED, REQUIRED OR BENEFICIAL .................................................. 4
  3.30 QUESTIONS RELATED TO EDUCATIONAL OBJECTIVE II: CONTINUE LIFE-LONG LEARNING THROUGH PRACTICE OR OTHER EDUCATIONAL VENUES ........................................................................... 5
  3.40 QUESTIONS RELATED TO EDUCATIONAL OBJECTIVE III: PASS THE FUNDAMENTALS OF ENGINEERING EXAM .................................................................................................................. 6
  3.50 QUESTIONS RELATED TO EDUCATIONAL OBJECTIVE IV: IF STILL EMPLOYED IN THE ENGINEERING PROFESSION, OBTAIN PROFESSIONAL LICENSURE. .................................................. 7
  3.60 PERCENTAGE WHO ARE MEMBERS OF A PROFESSIONAL ENGINEERING ORGANIZATION ................................................................................................................................. 7

4.00 EMPLOYER SURVEY ......................................................................................................... 9
  4.10 BUSINESS BACKGROUND ........................................................................................... 9
  4.20 QUESTIONS RELATED TO EDUCATIONAL OBJECTIVE I: ENTER A CAREER FOR WHICH A CIVIL ENGINEERING DEGREE IS USED, REQUIRED OR BENEFICIAL .................................................. 10
  4.30 QUESTIONS RELATED TO EDUCATIONAL OBJECTIVE II: CONTINUE LIFE-LONG LEARNING THROUGH PRACTICE OR OTHER EDUCATIONAL VENUES ........................................................................... 10
  4.40 QUESTIONS RELATED TO EDUCATIONAL OBJECTIVE III: PASS THE FUNDAMENTALS OF ENGINEERING EXAM .................................................................................................................. 11
  4.50 QUESTIONS RELATED TO EDUCATIONAL OBJECTIVE IV: IF STILL EMPLOYED IN THE ENGINEERING PROFESSION, OBTAIN PROFESSIONAL LICENSURE. .................................................. 11
  4.60 ADDITIONAL COMMENTS ............................................................................................ 12

APPENDIX A: ALUMNI SURVEY INSTRUMENT ........................................................................ 14
APPENDIX B: EMPLOYER SURVEY INSTRUMENT ................................................................ 16
UMass Dartmouth Civil Engineering Program: Alumni and Employer Surveys

[This page left blank intentionally]
EXECUTIVE SUMMARY

The Department of Civil and Environmental Engineering (CEN) at UMass Dartmouth, which offers undergraduate programs of study leading to a Bachelor of Science degree in Civil Engineering, is in the process of reaccreditation. The organization conducting the reaccreditation is the Engineering Accreditation Commission of ABET, Inc., an accreditor for college and university programs in applied science, computing, engineering, and technology.

To maintain its accreditation with ABET, the Civil Engineering program is required to report on the performance of its B.S. students before graduation and degree recipients after graduation, particularly in terms the program’s effectiveness in attaining its stated educational objectives and outcomes. Accordingly, the department has conducted surveys of alumni every year since 2003, although each year questions were asked of a different graduating class. The focus of the surveys was on Program Outcomes (POs), which measured perceptions of what alumni learned while a student at UMass Dartmouth. However, the survey did not address alumni status or accomplishments 3 to 5 years after graduation.

During the recent ABET visit, the program was criticized regarding two of its Program Outcomes, thus the department rewrote all its POs to satisfy ABET’s expectations. ABET also cited a weakness in the department's assessment of Program Educational Objectives (PEO) attainment. CEN subsequently changed its alumni survey to address the new Program Educational Objectives, and rewrote its survey of employers so that it also addressed the PEOs. The Center for Policy Analysis was asked to undertake the current analysis to measure the program’s success in meeting these new educational objectives.

Alumni Survey

The alumni survey includes measures that are directly related to the new Program Educational Objectives. A total of 71 surveys were mailed to Civil Engineering alumni from the Class of 2003 through the Class of 2008. Thirty surveys were completed and returned by mail (N=13) and on-line (N=17), for a response rate of 42 percent.

Results include:

Measures Related to Educational Objective I: Enter a Career for Which a Civil Engineering Degree is Used, Required or Beneficial

- Alumni were asked to rate the effectiveness of the UMD Civil and Environmental Engineering program in providing the technical skills necessary for its graduates to succeed in their job. Sixty-three percent of alumni (63%) rate the program as very effective, while 33 percent rate it as somewhat effective, no alumni rate it as somewhat ineffective, and 3 percent (1 alumnus) rate the program as not effective.

Measures Related to Educational Objective II: Continue Life-Long Learning through Practice or Other Educational Venues

- Eighty percent of respondents (80%) report that they have continued life-long learning through practice or other educational venues.
Measures Related to Educational Objective III: Pass the Fundamentals of Engineering Exam

- Ninety-percent of alumni report that they have passed the Fundamentals of Engineering Exam. More than a third (37%) passed the Exam in 2003, with smaller percentages of alumni passing the exam in other years.

Measures Related to Educational Objective IV: If Still Employed in the Engineering Profession, Obtain Professional Licensure

- Twenty-seven percent of alumni who are still employed in the engineering profession have obtained Professional Engineering Licensure. States of licensure include Arizona (N=1), California (N=1), Massachusetts (N=4), and Rhode Island (N=1).

Employer Survey

To further measure the program’s success in satisfying its four educational objectives, an on-line employer survey was conducted of businesses that employ UMass Dartmouth Civil Engineering B.S. recipients who graduated between 2003 and 2008. A total of 24 employers were contacted by email or telephone and asked to complete the survey online. Eleven surveys were completed for a response rate of 46 percent. These respondents employ a total of 33 Civil Engineering alumni, which represents 32 percent of the 129 alumni who graduated between 2003 and 2008.

Results of the employer survey include:

Measures Related to Educational Objective I: Enter a Career for Which a Civil Engineering Degree is Used, Required or Beneficial

- All employers (100%) report that the Bachelor’s degree in Civil Engineering of UMass Dartmouth alumni is used, required, or beneficial for their career.

Measures Related to Educational Objective II: Continue Life-Long Learning Through Practice or Other Educational Venues

- Seventy-three percent of employers (73%) rate Civil Engineering graduates’ engagement in life-long learning as “excellent,” while 18 percent rate it as “above average,” and 9 percent rate it as “average.” These figures represent 88 percent, 9 percent, and 3 percent of the total alumni employed by respondents respectively. Life-long learning endeavors include graduate education, self-study, membership in professional organizations, professional registration and certifications.

- No respondents rate graduates’ engagement in life-long learning as “below average” or “poor.”

Measures Related to Educational Objective III: Pass the Fundamentals of Engineering Exam

- Eighty-two percent of employers (82%) report that all the UMass Dartmouth Civil Engineering graduates they employ have passed the Fundamentals of Engineering Exam. This figure represents 91 percent of the total alumni employed by respondents.
Measures Related to Educational Objective IV: If Still Employed in the Engineering Profession, Obtain Professional Licensure

- Eighteen percent of employers (18%) report that all the UMass Dartmouth graduates who are still employed in the engineering profession have obtained Professional Engineering Licensure, while 27 report that most of their graduates have obtained Professional Engineering Licensure. These figures represent 42 percent and 24 percent of the total alumni employed by respondents respectively. Conversely, 45 percent of employers report that their employees have not received professional licensure, which represents 30 percent of the total alumni employed by respondents.
1.00 INTRODUCTION

The Department of Civil and Environmental Engineering at UMass Dartmouth is in the process of reaccreditation. Accreditation is a peer-review process that assures that the education provided by institutions of higher education meets acceptable levels of quality. The organization conducting the reaccreditation is the Engineering Accreditation Commission of ABET, Inc., an accreditor for college and university programs in applied science, computing, engineering, and technology.

As part of the accreditation process, the department’s Civil Engineering program, which offers an undergraduate degree in civil engineering, is required to measure its effectiveness in attaining its stated educational objectives and outcomes. Success in meeting these educational objectives and outcomes is measured by a periodic assessment and evaluation process. Specifically, ABET requires the department to satisfy the following three criteria:

Criteria I: Program Educational Objectives

ABET requires each program that seeks accreditation or reaccreditation to have in place:

(a) published educational objectives that are consistent with the mission of the institution and these criteria,
(b) a process that periodically documents and demonstrates that the objectives are based on the needs of the program’s various constituencies, and
(c) an assessment and evaluation process that periodically documents and demonstrates the degree to which these objectives are attained.

Criteria II: Program Outcomes

Engineering programs must demonstrate that their students attain stated outcomes that foster the attainment of the program educational objectives.

Criteria III: Continuous Improvement

Each program must show evidence of actions to improve the program. These actions should be based on available information, such as results from Criteria I and Criteria II.
UMass Dartmouth Civil Engineering Program: Alumni and Employer Surveys

1.10 **ALUMNI AND EMPLOYER SURVEY, 2003 TO 2010.**

CEN has conducted surveys of alumni every year since 2003, although each year questions were asked of a different graduating class. The focus of the surveys was on Program Outcomes (POs), which measured perceptions of what alumni learned while a student at UMass Dartmouth. However, the survey did not address alumni status or accomplishments 3 to 5 years after graduation.

During the recent ABET visit, the program was criticized regarding two of its Program Outcomes, thus the department rewrote all its POs to satisfy ABET’s expectations. ABET also cited a weakness in the department's assessment of Program Educational Objectives (PEO) attainment. CEN subsequently changed its alumni survey to address the new Program Educational Objectives, and rewrote its survey of employers so that it also addressed the PEOs. The Center for Policy Analysis was asked to undertake the current analysis to measure the program’s success in meeting these new educational objectives.

1.20 **PROGRAM EDUCATIONAL OBJECTIVES**

The alumni survey includes measures that are directly related to the Civil Engineering program’s educational objectives. The objectives include:

Graduates of the Bachelor’s degree program in Civil Engineering will:

I. Enter a career for which a Civil Engineering degree is used, required or beneficial

II. Continue life-long learning through practice or other educational venues

III. Pass the Fundamentals of Engineering exam

IV. If still employed in the engineering profession, obtain Professional Licensure.
2.00 METHODOLOGY

2.10 ALUMNI SURVEY

The alumni survey questionnaire was developed by faculty of the Department of Civil and Environmental Engineering and was mailed to 76 Civil Engineering alumni who graduated in the years 2003 through 2008.\(^1\) A copy of the survey can be found in Appendix A. Several strategies were employed to increase the survey’s response rate:

- A postcard was mailed to alumni to announce that the survey would be arriving in the mail within a few days.
- The survey questionnaire, cover letter, and business reply envelope were mailed four days after the postcard. Alumni were able to complete the survey and return it in the postage paid business reply envelope or to complete the survey on-line.
- Two follow-up calls were made to alumni who did not complete a survey and a second survey was mailed to these individuals.
- A postcard was mailed two weeks later to invite those who did not respond to the survey to complete the survey on-line. A second postcard was mailed a week later.
- Department faculty made personal contact with alumni by telephone or email.

2.20 EMPLOYER SURVEY

To further measure the program’s success in satisfying its four educational objectives, an on-line employer survey was conducted of businesses that employ UMass Dartmouth Civil Engineering B.S. recipients who graduated between 2003 and 2008.\(^2\) Employer contact information was obtained from Civil Engineering faculty and from the alumni surveys.\(^3\) A total of 32 employers were contacted by email and asked to complete the survey online. Follow-up calls and emails were made to employers who did not initially complete the survey to increase the response rate.

---

\(^1\) The actual number of alumni for this period was 103. However, contact information was not available for all alumni.

\(^2\) A copy of the employer survey can be found in Appendix B.

\(^3\) The survey asked alumni to provide the name and contact information of their employer.
3.00 **Alumni Survey Results**

A total of 79 surveys were mailed to Civil Engineering alumni from the Class of 2003 through the Class of 2008. Eight surveys were returned because they did not have a deliverable address, thus 71 surveys were successfully mailed to alumni. Thirty surveys were completed and returned by mail (N=13) and on-line (N=17), for a response rate of 42 percent. Results of the survey follow.

3.10 **Year of Graduation**

There is a relatively broad distribution of respondents in terms of year of graduation, with the highest percentage of alumni graduating in 2008 (23%) and 2003 (20%) (see Table 1).

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>6</td>
<td>20%</td>
</tr>
<tr>
<td>2004</td>
<td>5</td>
<td>17%</td>
</tr>
<tr>
<td>2005</td>
<td>5</td>
<td>17%</td>
</tr>
<tr>
<td>2006</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>2007</td>
<td>4</td>
<td>13%</td>
</tr>
<tr>
<td>2008</td>
<td>7</td>
<td>23%</td>
</tr>
</tbody>
</table>

3.20 **Questions Related to Educational Objective I: Enter a Career for Which a Civil Engineering Degree is Used, Required or Beneficial**

Alumni were asked to rate the effectiveness of the UMass Dartmouth Civil and Environmental Engineering program in providing the technical skills necessary for its graduates to succeed in their job. Sixty-three percent of alumni (63%) rate the program as very effective, while 33 percent rate it as somewhat effective, no alumni rate it as somewhat ineffective, and 3 percent (1 alumnus) rate the program as not effective (see Figure 1).

4 Percentages in this report may not add to 100 due to rounding.
3.30 QUESTIONS RELATED TO EDUCATIONAL OBJECTIVE II: CONTINUE LIFE-LONG LEARNING THROUGH PRACTICE OR OTHER EDUCATIONAL VENUES

Eighty percent of respondents (80%) report that they have continued life-long learning through practice or other educational venues (see Figure 2).

Recent professional development activities or post-graduate studies described by alumni include:

- Attending/Attended various seminars, conferences, etc. (N=5)
- Enrolled in graduate program at UMass Dartmouth (N=2)
- Enrolled in graduate school (no specific school provided) (N=2)
- Professional development courses (general) (N=2)
- Enrolled to take Professional Engineer Exam (N=2)
- Attained LEED AP accreditation in May 2009
- Classes at UMASS Lowell-Structural program
- Graduate student at Northeastern University studying Structural Engineering
- Graduate student in UMass Dartmouth Civil Engineering program
- Graduate degree in Civil and Environmental Engineering at UMass Dartmouth
- MS Environmental Engineering at UMass Amherst
- National Highway Institute’s LRFD Superstructure & Substructure design
- National Highway Institute’s 60 hour bridge inspection course
- Ph.D. and M.S. from University of California-San Diego
- Professional engineering refresher courses
- Pump Design course
- LEED Green Associate Accreditation
- Registered Professional Engineer
- Septic Design seminars
- Storm water Management seminars
- Worked at land development companies after graduating; received my P.E. in 2008
3.40 **QUESTIONS RELATED TO EDUCATIONAL OBJECTIVE III: PASS THE FUNDAMENTALS OF ENGINEERING EXAM**

Ninety-percent of alumni report that they have passed the Fundamentals of Engineering Exam (Figure 3). More than a third (37%) passed the Exam in 2003, with smaller percentages of alumni passing the exam in other years (see Table 2).

![Figure 3](image)

**Table 2**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>10</td>
<td>37%</td>
</tr>
<tr>
<td>2004</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>2005</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>2006</td>
<td>5</td>
<td>19%</td>
</tr>
<tr>
<td>2007</td>
<td>6</td>
<td>22%</td>
</tr>
<tr>
<td>2008</td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>2009</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2010</td>
<td>1</td>
<td>4%</td>
</tr>
</tbody>
</table>
3.50 **Questions Related to Educational Objective IV: If still employed in the engineering profession, obtain Professional Licensure.**

Twenty-seven percent of alumni who are still employed in the engineering profession have obtained Professional Engineering Licensure (see Figure 4). States of licensure include Arizona (N=1), California (N=1), Massachusetts (N=4), and Rhode Island (N=1).

![Figure 4](image)

3.60 **Percentage Who Are Members of a Professional Engineering Organization**

Half of alumni (50%) report that are a member of a professional engineering organization (see Figure 5).

![Figure 5](image)
Professional organizations of which alumni are members include:

- American Association of Highway Transportation Officials (AASHTO)
- American Concrete Institute (ACI)
- American Society of Civil Engineers (ASCE) (N=8)
- American Society of Healthcare Engineers (ASHE/CSHE)
- American Water Works Association (AWWA)
- Architecture Construction Engineering (ACE/MA)
- Army Engineer Association (AEA)
- Boston Society of Civil Engineers Section (BSCES) (N=4)
- Earthquake Engineer Research Institute (EERI)
- Engineers Without Borders-Boston (EWB)
- Illinois Mathematics and Science Academy (IMSA)
- Institute of Transportation Engineers (ITE) (N=2)
- National Society of Professional Engineers (NSPE)
- New England Water Environment Association (NEWEA) (N=3)
- Rhode Island Society of Professional Engineers (RISPE)
- Society of American Military Engineers (SAME)
- Structural Engineers Association (SEA)
- Structural Engineers Association of California (SEAOC)
- Water Environment Federation (WEF) (N=3)

Respondents were also asked to indicate the activities they have undertaken as members of these organizations. Results include:

- ACI Committee 341 - Seismic Design of Concrete Bridges (Voting Member)
- ACI Committee 349 - Concrete Nuclear Structures (Associate Member)
- ASCE Committee 4 - Seismic Analysis of Nuclear Structures (Voting Member)
- Chair of student scholarship committee at NEWEA
- Concrete canoe
- EERI San Diego Planning Committee
- Member of Humanitarian Assistance Committee at NEWEA
- Member of Programs Committee at ACE/MA
- No activities other than a member
4.00 **EMPLOYER SURVEY**

To further measure the program’s success in satisfying its four educational objectives, an on-line employer survey was conducted of businesses that employ UMass Dartmouth Civil Engineering B.S. recipients who graduated between 2003 and 2008. Employer contact information was obtained from program faculty and from graduates who completed the alumni survey and provided contact information for their employer.

A total of 24 employers were contacted by email or telephone and asked to complete the survey online. Follow-up calls and emails were made to employers who did not initially complete the survey to increase the response rate. A total of 11 surveys were completed for a response rate of 46 percent. These respondents employ a total of 33 Civil Engineering alumni, which represents 32 percent of the 129 alumni who graduated between 2003 and 2008. Results of the employer survey follow.

4.10 **BUSINESS BACKGROUND**

Personnel from the following companies responded to the survey:

- Massachusetts Department of Transportation
- Bridge/Structural
- Thompson Farland, Inc.
- Brown and Caldwell
- BETA Group Inc.
- Tetra Tech; Transportation Division

Respondents hold a broad array of positions at these companies:

- District 4 Projects Engineer
- President
- President/Owner
- Vice President (N=3)
- Vice President/Office Manager

*Note: (Not all respondents provided business background information)*
4.20 **Questions Related to Educational Objective I: Enter a Career for Which a Civil Engineering Degree is Used, Required or Beneficial**

All employers report that the Bachelor’s degree in Civil Engineering of UMass Dartmouth alumni is used, required, or beneficial for their career (see Figure 6).

![Figure 6](image)

4.30 **Questions Related to Educational Objective II: Continue Life-long Learning Through Practice or Other Educational Venues**

Seventy-three percent of employers (73%) rate UMass Dartmouth Civil Engineering graduates’ engagement in life-long learning through graduate education, self-study, membership in professional organizations, professional registration and certifications as excellent, while 18 percent rate it as above average, and 9 percent rate it as average. These figures represent 88 percent, 9 percent, and 3 percent of the total alumni employed by respondents respectively (see Figure 7).

![Figure 7](image)
4.40 **Questions Related to Educational Objective III: Pass the Fundamentals of Engineering Exam**

Eighty-two percent of employers (82%) report that all the UMass Dartmouth Civil Engineering graduates they employ have passed the Fundamentals of Engineering Exam. This figure represents 91 percent of the total alumni employed by respondents (see Figure 8).

![Figure 8](image)

**Figure 8**

Have He/She/They Passed the Fundamentals of Engineering Exam?

<table>
<thead>
<tr>
<th>Yes</th>
<th>Mostly Yes</th>
<th>Yes for About Half of Them</th>
<th>Mostly No</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>82%</td>
<td>18%</td>
<td>9%</td>
<td></td>
<td>0%</td>
</tr>
</tbody>
</table>

4.50 **Questions Related to Educational Objective IV: If Still Employed in the Engineering Profession, Obtain Professional Licensure.**

Eighteen percent of employers (18%) report that all the UMass Dartmouth graduates who are still employed in the engineering profession have obtained Professional Engineering Licensure and 27 report that most of their graduates have obtained Professional Engineering Licensure (see Figure 9). This figure represents 42 percent and 24 percent of the total alumni employed by respondents respectively. Conversely, 45 percent of employers report that their employees have not received professional licensure, which represents 30 percent of the total alumni employed by respondents.

![Figure 9](image)

**Figure 9**

If Still Employed in the Engineering Profession, Have He/She/They Obtained Professional Licensure?

<table>
<thead>
<tr>
<th>Yes</th>
<th>Mostly Yes</th>
<th>Yes for About Half of Them</th>
<th>Mostly No</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>18%</td>
<td>27%</td>
<td>24%</td>
<td>9%</td>
<td>3%</td>
</tr>
<tr>
<td>42%</td>
<td>27%</td>
<td>45%</td>
<td></td>
<td>30%</td>
</tr>
</tbody>
</table>
4.60 ADDITIONAL COMMENTS

Additional comments include:

- All around good employee with a strong set of skills.
- The graduate from UMass Dartmouth is a well-rounded engineer with both construction and design experience. His ability to accept engineering tasks and complete them in a timely manner is exceptional. He also takes on additional responsibilities and he uses his education and experience to grow as an engineer.
- I have found the UMass-Dartmouth civil engineering graduates to be well prepared for the needs and challenges of engineering and consulting. We look first to the University for filling staff positions.
- The UMass Dartmouth engineers that we employ are excellent engineers. They have excellent educational backgrounds in the civil engineering field. They are very cooperative, hard-working and contribute significantly to our firm. They perform equally to engineering graduates from other engineering institutions such as Worcester Polytech and Northeastern University.
APPENDIX A: ALUMNI SURVEY INSTRUMENT

1. When did you graduate with a BSCE degree from the University of Massachusetts Dartmouth?
   - 2003
   - 2004
   - 2005
   - 2006
   - 2007
   - 2008

2. How effective was the UMD Civil and Environmental Engineering program in providing the technical skills necessary for you to succeed in your job?
   - VERY EFFECTIVE
   - SOMEWHAT EFFECTIVE
   - SOMEWHAT INEFFECTIVE
   - NOT EFFECTIVE
   - DON’T KNOW

3. Have you continued life-long learning through practice or other educational venues?
   - YES
   - NO

   If yes, please describe your recent professional development activities or post-graduate studies below:

4. Have you passed the Fundamentals of Engineering Exam?
   - YES
   - NO

   If yes, please provide the year that you passed the Fundamentals of Engineering Exam: ___________

5. If still employed in the engineering profession, have you obtained Professional Engineering Licensure?
   - YES
   - NO

   If yes, please provide your state of licensure: ______________
6. Are you a member of a professional engineering organization?

○ YES
○ NO

If yes:

a. please list the organization(s):

b. please describe your activities for this organization (offices, committees, etc.)

EMPLOYER SURVEY

We are required to contact employers of UMass graduates as part of the accreditation process. While it is optional, providing the name of your employer and the name, telephone number, or email address of a contact person to whom we may send a survey will help us considerably in the accreditation process. Preferably this contact person is someone who knows you well.

Keep in mind that all employer responses will remain strictly confidential and will be reported in aggregate only.

Name of Your Employer: __________________________

Name of Supervisor Who We Can Contact: __________________________

Contact Information (telephone # or email): __________________________

Thank you for your help.

Please return the questionnaire in the enclosed envelope or mail the survey to

Center for Policy Analysis
University of Massachusetts Dartmouth
285 Old Westport Rd.
Dartmouth, MA 02747
APPENDIX B: EMPLOYER SURVEY INSTRUMENT

If you employ or supervise graduates of the Bachelors degree program in Civil Engineering at the University of Massachusetts Dartmouth, we request that you respond to the following questions. Your responses should characterize these graduates as a group, to the extent possible.

To insure your privacy and avoid any possibility of survey impact on you or any specific employee, your responses will be pooled with the responses from other employers and no record will be kept of your individual answers.

Thanks for your help.

1. What is your division within the company and your position?
   
   Company: ________________________________
   
   Position: ________________________________

2. How many UMass Civil Engineering graduates do you employ or supervise?

   ________________________________

3. Is the Bachelor’s degree in Civil Engineering degree used, required or beneficial for his/her/their career?

   (Yes)
   (Mostly Yes)
   (Yes for about half of them)
   (Mostly No)
   (No)

4. How would you rate UMD Civil Engineering graduates’ engagement in life-long learning through graduate education, self-study, membership in professional organizations, professional registration and certifications. Would you say it is:

   (EXCELLENT)
   (ABOVE AVERAGE)
   (AVERAGE)
   (BELOW AVERAGE)
   (POOR)
   (NO BASIS /DON’T KNOW)
5. Have he/she/they passed the Fundamentals of Engineering Exam?

(Yes)
(Mostly Yes)
(Yes for about half of them)
(Mostly No)
(No)

6. If still employed in the engineering profession, have he/she/they obtained Professional Licensure?

(Yes)
(Mostly Yes)
(Yes for about half of them)
(Mostly No)
(No)
(Does Not Apply)

7. Do you have any comments? (please write below)