



## Implementing a Student-Suggested Course in Engineering Career Development

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## **Introduction**

In a recent poll of 75 engineering students at Vanderbilt University School of Engineering, conducted by a student team for an engineering management course project, 67 percent agreed they would register for a course to help them prepare for the job search and career success. As a direct result of this expressed student interest and the project team's recommendation, a special topics course, Engineering Career Development, was created and delivered for one semester as a pilot project.

This practical, one credit-hour course provided engineering students with tools to gain a competitive advantage in reaching their potential in the workforce. The course was designed to help engineering students develop necessary communication skills and strategies for finding a job and initiating a career. Topics included networking, participating in career fairs, researching prospective employers, writing a resume, crafting an audience-driven cover letter, interviewing, using social media strategically, using the career center's resources effectively, applying professional ethics, and learning best practices in today's marketplace. The course required unusual collaboration and cooperation among the instructor, university career center staff, and engineering school administrators. Assignments and deliverables were coordinated with the career center's on-campus recruiting activities and resources.

This paper describes the first semester of the course, its rationale and development, collaborative efforts, lessons learned, and recommendations for future course delivery. The authors describe the course from the perspectives of the instructor (Sharp) and the division administrator (Rowe). They analyze student participation together with both midterm and post-course questionnaire feedback to determine degree of success and future course development.

## **Review of Existing Programs and the Literature**

A brief look at engineering education literature shows that colleges and universities in the past have provided career development in various ways, such as workshops,<sup>1-3</sup> modules within courses,<sup>4-8</sup> and separate courses.<sup>9-11</sup> Some of these have been offered in schools of engineering and some in other schools. One department even developed its own career center focused on helping particular majors in their career quest.<sup>12</sup>

An exploration of 14 universities' online course catalogs in Vanderbilt's peer and aspirational groups indicates that career development courses currently offered at institutions vary almost as much as the institutions themselves. The surprisingly small handful of institutions who offer such courses either offer them through a centralized career center or through the engineering school within a college or university. The speculation over the type of institution that may offer course-based resources for students' career development is discussion for another paper. Five of the 14 universities sampled offer career development courses with variable credit hours from zero to three credit hours either required or optional depending on the university. Course

requirements range from optional (no bearing on degree requirements) to elective (mostly pass/fail) to mandatory in order to have access to the job posting database at the college or university. Class sizes range from a seminar-sized group of around eight up to a lecture hall style group of about 100 per section, seemingly dependent on the staffing of the career center itself or available faculty members qualified to teach the class. Formats vary just as much from small weekly assignments to nearly daily assignments and end-of-term reflection papers. Some of the most often stated requirements are that students must create a resume and attend some sort of career fair-type activity outside of class. A sampling of the universities in this university's peer and aspirational groups examined appears in Appendix 1.

Courses involving career development concepts and activities have proliferated since the 1980's;<sup>13</sup> however, little is known about the effectiveness of these courses on employability and the ways other activities such as internships and prior experience contribute to student success.<sup>14</sup> Sagan's 2000 study of the effects of career preparation suggested that any supplemental career preparation is valuable although a modest positive effect occurred when preparation was considered independent of individual characteristics. Of course, related work experience and internships had the greatest effect in the specialized hard sciences. There is no silver bullet in career preparation; however, Sagan's study suggested that when combined with major course work and other conditional variables such as specialized instruction and internships, the effect is significantly greater than without.<sup>14</sup>

Lent et al. suggested that career self-efficacy could enhance student success in establishing career interests.<sup>15</sup> Luzzo et al. combined previous research and determined that students in science and math areas have greater career interest and focus when their career self-efficacy is higher. One of the treatments offered to increase such self-efficacy is a workshop format experience driven by a career center or in cooperation with a career center.<sup>16</sup>

Such courses are typically highly regarded by students who take them and enjoy a history of very favorable student ratings.<sup>13</sup> However, some key findings from this study provide guidance on the construct of such a course according to student preferences. Such attributes include components long known to increase student engagement and self-efficacy: student-instructor involvement, small-group meetings, student-instructor conferences, high level of organization and high level of detail in course syllabus and schedule, and a standardization of the course to provide for longitudinal study of effectiveness.<sup>13</sup>

A study by Brown in 2004 identified key components that affect the college student's career decision-making process.<sup>17</sup> The experiences having the greatest effect on the decision-making process are those that are challenging and applicable, provide students with new perspective, and stimulate self-reflection. Strategies should be focused on an orientation to learning including breaking down myths and basing a search process on individual identity. However, interactions with others including faculty members, alumni, administrators, and other students influence a student's learning process and increase self-efficacy. Collaboration with other campus offices more often provides load-leveling when staffing is slim as it is in most career services units of colleges and institutions. By partnering with academic units, career services can share responsibility in shaping students' decision-making processes. This collaboration can demonstrate the institution's commitment to students' post-college career planning.<sup>17</sup>

## **Course Development and Collaboration**

In the spring 2012 semester, a group of undergraduate engineering students taking a systems engineering management course asked to do their semester project on the feasibility of a career development course for engineering undergraduates. Such a course had been debated off and on for many years by the faculty and had been deemed not academically rigorous to be offered in a traditional engineering curriculum. In any case, the students' request was granted and the feasibility study was done. The resulting project for the systems engineering management class was presented to the course professor, who also invited the general engineering program director, the career center director, and the associate dean in the engineering school who liaises with the university career center.

Over the summer months a plan was created to launch a pilot course including many of the student group's recommendations. The general engineering program director agreed to set up a "special topics" course to expedite the course while bypassing various curriculum committees. Credit would be considered "open elective" and not be tied to any degree requirements for engineering students. At this university, this practice is common for pilot versions of courses to determine if they are viable before being permanently added to the course catalog. A faculty member with long-time experience in engineering career education partnered with the university career center staff to create a draft course outline. This faculty member agreed to teach the pilot course as an overload for the fall semester. The special topics course was advertised via email to rising engineering sophomores, juniors, and seniors just before fall courses began. The course immediately filled to capacity with a full waiting list. The details of the course are in subsequent sections of this paper.

The success of this course hinges on the continued collaboration between the engineering school faculty and the university's career center staff. For instance, the professor teaching the course collaborated closely with a staff member from the university career center on items such as guest speakers and the structures and processes within the career center itself. The career center staff was enthusiastic about the course and the request for their input. In January 2013, the institution's engineering faculty career committee heard the course instructor's presentation about the results of the course. One positive result noted was the synergy achieved by the instructor, engineering school administration, and the career center.

## **Course Description**

Assignments and grading percentages were designed for students to prepare for the job search and to use the resources at the university's career center. Table 1 lists these; the asterisk indicates that the university career center staff was involved in some way and recorded the students' participation. For example, career center staff critiqued and approved the resume for posting on the center's website. They also set up and scheduled the mock interviews with employer volunteers and conducted any mock interviews for students unable to meet with employers.

The interview chart referred to is an assignment based on the STAR interview method, which is used to answer behavioral interview questions. STAR is an acronym for Situation, Task, Action, and Results. Using this method, the interviewee answers a question by referring to a specific situation to demonstrate how he or she approached a certain goal, describing specific actions taken to achieve successful results. This method shows the person in action.<sup>6, 18, 19</sup>

**Table 1. Assignments and Grade Percentages**

	<b>Assignment</b>	<b>Percentage</b>
1	Resume*	10 %
2	Company research	5%
3	Elevator speech	5%
4	Participation in 1 of 4 industry career days and 2 information sessions (or 2 career days)*	10% for completion
5	Center website uploads/e-mail to center assistant director*	5% for completion
6	LinkedIn profile creation	5% for completion
7	Mock interview*	10% for completion including interviewer critique
8	Interview chart	5%
9	Cover letter targeted to a job description	10%
10	Attendance/participation	35%

Assignments and topics were scheduled to coincide with and take advantage of the career center’s scheduled opportunities, such as career fairs, information sessions, mock interviews with employer volunteers, and individual resume critiques. The schedule of topics and assignments for the course appears in Appendix 2 at the end of this document. The schedule given students at the beginning of the course was more generic, especially after midterm, to allow for flexibility and adapting to students’ suggestions and midterm feedback. This schedule was revised several times as details developed and guest speakers were confirmed.

**Description of Students Enrolled in the Course**

Twenty-two students enrolled in the course, representing a variety of classifications: 7 sophomores, 9 juniors, and 6 seniors. Seven majors were represented, including 6 mechanical engineers, 1 biomedical engineer, 5 chemical engineers, 3 engineering science majors, 2 electrical engineers, 4 computer science majors, and 1 civil engineer.

On the first day of the course, the students wrote what they expected to gain from taking the course. The most responses mentioned gaining one or more job search skills, such as resume writing, interviewing, networking, and marketing oneself. Five students, however, mentioned learning about various types of jobs that engineers may have, as one student stated, “to get an idea of what engineers do.” Originally the instructor had intended to ask a few guest speakers to talk about various job search skills or issues. Based on these students’ comments, however, she decided to add more guest speakers than originally planned, asking some to speak about their various jobs.

## Midterm Feedback from Students

At midterm, the instructor asked for student feedback to determine how well the course was progressing and what changes were needed. Students assessed the first half of the semester by writing anonymous responses to two questions, the first asking what they found helpful and the second asking what improvements, if any, they recommended for the second half of the semester. This simple style of midterm evaluation has been recommended by the administration and is common practice in this university's engineering courses. Of the 22 students enrolled, 19 responded. All 19 students said positive things about finding something helpful while 15 made recommendations.

In answering the first question as to what they liked best, students mentioned learning about interview techniques, elevator speeches, resumes, cover letters, and networking as well as being required to attend a career fair and to take part in what the career center offered. They also mentioned as valuable learning the best ways to start the job search process, to find internships or jobs, and to represent themselves to employers. Even though most students were juniors and seniors, some students mentioned that they valued finding out what various engineers do. Several students also commented that they appreciated the guest speakers.

In answer to the second question, students made recommendations for additions or improvements to the second half of the course. Four of 19 students responding had no suggestions. Of the 15 students who made suggestions, 5 mentioned help with cover letters. The topic of cover letters was already listed on the original syllabus for the last two class sessions. Two students mentioned needing an earlier time scheduled for cover letters and interview skills. The ideal time for the cover letter assignment is either together with or immediately following the resume assignment. When creating the syllabus, the instructor had tried to schedule the cover letter topic earlier but had to put it at the end to coordinate assignments with the career center's activities early in the semester. The center had scheduled four career fairs in the first month of the semester and most of their other activities before midterm. Therefore, the cover letter assignment was scheduled as a final, major assignment. It was to be targeted to a real job description and submitted with that description and a revised resume.

## End-of-Course Student Feedback

To determine if students' attitudes toward this new course were as positive as the authors thought and to help improve the course, the authors gathered students' anonymous assessments with a two-part questionnaire at the end of the semester. The respondents were 20 of 22 students.

**Part I.** Part I of this post-course, instructor-designed questionnaire consisted of 15 course objectives that students were to rate, showing how well they thought they met these objectives both when entering and exiting the course. The instructor uses this method in all her courses for student self-assessment of meeting course objectives. Students rated items on a scale from 1 to 5 with 5 being the highest rating. A space after each item offered a place for students to comment if they wished. Table 2 presents the numerical results.

A Wilcoxon sign-ranked test was performed on the before and after data. The p-value for every item was less than 0.01, thus causing the authors to reject the idea that the difference was due to chance and to conclude that the population has a median higher than the hypothetical median. Eleven items had a p-value less than 0.001, further indicating that the treatment caused an increase in response level in this self-assessment. These results are supported by the qualitative component of the self-assessment and are not surprising to the authors.

**Table 2. Post-Course Anonymous Feedback from Students – Part 1: Students’ self-assessment of meeting course objectives. N = 20 of 22 students**

Please rate from 1 to 5 your knowledge of the course objectives on entering and exiting the course, with 5 as the highest score and 1 as the lowest score. Please include comments.				
Knowledge of/ability to	<i>Before Course</i>		<i>After Course</i>	
	Mean	SD	Mean	SD
1. Write and present an elevator speech designed to highlight certain key points about the speaker	2.1	1.1	4.3	0.5
2. Research a minimum of two companies using several resources to find pertinent information	2.9	1.3	4.0	1.0
3. Create a results-oriented resume with power verb phrases describing accomplishments, not just duties	3.2	1.0	4.6	0.5
4. Receive a resume critique and approval from career center staff	2.6	1.6	4.9	0.3
5. Participate in at least one career fair, using an elevator speech and resume	2.5	1.6	4.7	0.6
6. Attend at least one employer information session	2.7	1.7	4.5	1.1
7. Create a LinkedIn page to emphasize key points	2.7	1.5	4.4	0.7
8. Network using LinkedIn by adding contacts and groups to increase visibility and self-promotion	2.4	1.4	4.3	0.6
9. Describe various types of jobs that different engineering majors may have	2.8	1.0	3.8	1.0
10. Demonstrate effective interviewing techniques, particularly the STAR method [describing Situation, Task, Action, Results]	2.8	1.2	4.4	0.8
11. Assess past experiences and write a specific STAR interview chart, showing analysis of experiences to emphasize actions and results	2.2	1.3	4.4	0.8
12. Describe a case interview and ways to prepare for case interview questions	2.0	1.0	3.6	0.8
13. Participate in a mock interview through the career center with an employer or career center staff	1.8	1.1	4.6	0.7
14. Describe appropriate ethical considerations in handling job offers	2.3	1.0	3.9	1.0
15. Find descriptions of available jobs and internships through sources outside the career center	3.1	1.2	4.3	0.6

Questions 2, 6, and 9 had the lower confidence level ( $p \leq 0.01$ ) of the 15 self-assessment items. Not surprisingly, these items had the highest standard deviation in the post-course assessment, thus suggesting that the students were not as positive regarding the amount they learned about these assessment items. The students possibly were either less confident in their knowledge of this assessment item or did not participate in the action the assessment item was requiring. Question 15 also had a lower confidence level, but the pre-course assessment was one of the

highest rated responses. This point suggests the students may have had a higher level of experience with this assessment item before the class started. In all 15 assessment items, the results indicate an increase in the students' knowledge of the assessment items. Areas of examination for future iterations of this course should include activities involving questions 2, 6, 9, and 15.

Question 16 asked students what they liked best about the course. All 20 students wrote positive comments. Twelve of the 20 mentioned that they valued learning certain tools for effective job searches. Four students stated that they appreciated learning how to use the career center resources. One of the four said, "Being informed about the career center was helpful as was knowing we could ask . . . [the professor] about any job related questions." Another student stated, "I really liked that . . . [the course] forced us to utilize the career center. I was always too intimidated to do so beforehand." Because the career center's resources seem to be well publicized, one student's comment showing lack of awareness is somewhat disconcerting: "I needed a resume critique and mock interview and . . . [the career center] was able to offer just that, which is great because I had no clue that it existed before."

Five students mentioned that being required to complete tasks necessary to enhance a job search was beneficial. Three of these used the word "forced" when referring to required assignments as in, "We were forced to attend the career fair."

One student's comment was amusing: "It [the course] was an eye opener for me about the outside world. It just amazes me . . . [the] many things I don't know."

Question 17 asked what recommendations students had for improving the course. Three of the 20 respondents had no recommendations. One student stated: "It is almost perfect, I would say, for 1 credit hour." Two people with the same major did not want to hear guest speakers talk about topics related to other majors. Both of these students seemed to want either more generic information, i.e., not related to specific majors, or conversely, speakers' targeting their major. Two people wanted cover letters to be presented early in the semester while one person wanted cover letters to be handled more in depth.

**Part II.** In Part II of the questionnaire, students rated 13 statements to provide extra information for helping plan the next course offering (Table 3). The highest rated recommendations were to continue the resume assignment (5.0), coordination with the career center (4.9), Blackboard posts of files instead of a required textbook (4.9), the cover letter assignment (4.7), and the STAR method of interview training (4.5).

Most students found the interview chart to be helpful although a few did not. This assignment required students to analyze their past experiences and describe successful results of their actions. During a discussion on the last day of class, four students stated that the interview chart was their most valuable "take-away." In a written comment on the feedback form for this item (number 24), one student wrote that the interview chart was "one of the most useful things I've done at Vanderbilt."

Most students also found the guest speakers helpful and recommended continuing to include them. Ten people even wrote beside their numerical rating comments about appreciating the speakers. One person stated that the guest speakers were “the best part of the course.” Four students, however, gave a rating of 3 or below, thus lowering the overall score (4.1).

**Table 3. Post-Course Anonymous Feedback from Students – Part 2: Ratings of statements giving extra information to plan the next semester’s course. N = 20 of 22 students**

Please anonymously rate the items below from 1 to 5, with 5 as the highest score and 1 as the lowest score. Please include comments.		
	Mean	SD
18. The guest speakers were helpful	3.7	0.9
19. Continue to have guest speakers covering the same topics (their jobs/job search, company research, networking with Linked In, ethics of handling job offers, using the career center website, working a Career Fair, elevator speeches)	4.1	1.0
20. Continue to post files on OAK [Blackboard] instead of requiring a textbook	4.9	0.4
21. Require a textbook	1.3	0.8
22. Continue the resume assignment	5.0	0.0
23. Continue interview training with the STAR method	4.5	1.0
24. Continue the interview chart assignment	4.1	1.1
25. Continue the cover letter assignment	4.7	0.5
26. Continue the LinkedIn assignment	4.4	0.8
27. Changes made due to midterm feedback from students were appropriate (more speakers talking about their engineering jobs, particularly a computer science major, and about finding internships outside the career center)	4.1	1.1
28. Coordinating the course with career center activities was helpful and should continue	4.9	0.5
29. Offer the course only in the fall when the career fairs for full-time jobs are offered	2.6	1.4
30. Offer the course each semester	4.2	1.1

Table 4 lists the students’ responses answering how the course helped them meet their goals. In summary, they mentioned being better prepared for career fairs and interviews, being given a boost of confidence, and being better able to take initiative in their quest for a career.

**Table 4. Post-Course Anonymous Feedback from Students – Part 2: Students’ comments about how the course helped them meet their goals. N = 20 of 22 students**

<i>Question 31: Please comment on how the course helped you accomplish your personal/professional goals.</i>
1. Was WAY more prepared for a career fair (ex.: Resume, company info, elevator speech)
2. It helped my resume/CV look more professional and connected me with social media tools like Linked In to network
3. Forced me to attend career fairs and talk to companies [when] I would not have [otherwise] gone to their information sessions, which resulted in an internship

4. Aided with elevator speech/personal conduct with employers. Gave me confidence
5. Very helpful. I know about all the topics, but did not know enough to do them well. This course helped me with cover letters, resumes, and career fairs greatly
6. As mentioned previously, forcing us to use the career center was great, as it demystified the process
7. The course forced me to take advantage of existing resources and spend time preparing for my future career
8. Yes, but I am still searching for one (more perfect)
9. It helped me develop a well-constructed resume that conveys skills and accomplishments despite lacking technical expertise. It also gave me insight into the career center, which will be a great resource going forward
10. Most of the topics that were covered in this class were very useful. How I can make myself more confident in job seeking
11. It gave me a much sharper idea on what I had to get done
12. It centralized this information and gave me initiative, as a sophomore, to begin thinking along these tracks
13. Although I came into the course with my job search well underway, all my relevant materials/skills improved as a result
14. All! Confidence boost!
15. I was able to perfect my resumes and job searches
16. It really forced me to get stuff done, and seeing me doing things also helped motivate my friends
17. The course kept me focused on my career goals as opposed to only focusing on schoolwork
18. Well
19. I would have not spent as much time developing my elevator speech or interview chart otherwise and these things directly contributed to my successful job search
20. We are all so busy [that] it's easy to convince yourself that you don't have time, but it is so important

Some of the more interesting responses occurred when students told the three most important things they were taking away from the course. These can be summarized as using career center resources or naming one or more communication tools with which they gained more experience. Most often mentioned were networking, resumes, interviewing techniques, working a career fair, and the elevator speech. (The elevator speech is a brief, subtle sales pitch promoting oneself, delivered as if given to a manager in the time an elevator would take to reach its destination.) One favorite comment that a student made was that the course provided “Confidence, Preparedness, Action.” To provide an appropriate impact, Table 5 presents these comments in their entirety.

**Table 5. Post-Course Anonymous Feedback from Students – Part 2: Comments on students’ three biggest “take-aways.” N = 20 of 22 students**

<i>Question 32: What are your three biggest “take-aways” (positive or negative) from your experience taking this course?</i>
1. Using the career center website for opportunities. I have a great resume. Networking is key
2. Networking is important (very very...). You need to make a Linked In profile. How to interview with the STAR method (and mock interview at the career center)
3. Network. Know what recruiters are looking for. Prepare in every possible way for an interview
4. Target your employer. Smile. Don't red flag yourself
5. Resumes should be short, concise, and highlight your strengths. An elevator speech should include interest in you and highlight points on your resume. Cover letters should highlight responsibilities and qualifications of jobs you're applying for
6. Guest speakers for this course are useless. The course is incredibly easy. This course is very helpful for getting resume, cover letter, and mock interviews done
7. Use career center resources. Evaluate yourself according to a company's needs. Network, network, network
8. We tend to forget many things during interviews. Career is not as easy as we think. Work from today and "Networking is the key"
9. The career center has multiple means in assisting you with the job search. It is in your best interest to use them continuously. A cover letter, resume, and elevator speech must be results-driven selling points as opposed to a mere biography or listing of qualifications. Searching for a job is daunting and it takes a lot of work to prepare for application, interviews, etc.
10. Before this, I . . . [had] no idea . . . [about a] cover letter, elevator speech, or Linked In. But now, I have some knowledge about them and I find it was very helpful for me to accomplish my personal goals
11. Improving my resume, awareness of campus resources, how to go about obtaining a job/internship
12. 1) How to interview and present oneself for starting impressions 2) How to produce an effective resume 3) What companies are looking for
13. Networking is the most important part of a job search, and you can't leave it to when you are jobless only. Be specific when writing/speaking about yourself. Try to avoid closing doors/burning bridges
14. This course was fantastic. I absolutely HATE doing all the things we covered in class so without someone explaining how to do it and forcing me to exert myself, I would have never done any of these activities and consequently would be unemployed long after college
15. 1) How to write a resume 2) Consulting is a big thing 3) Maybe I could like consulting?
16. Confidence, Preparedness, Action
17. Career fair/information session requirements - so helpful! Resume critique - extremely useful! General networking help - really allowed me to feel more prepared for any situation I may encounter
18. 1) Research 2) Network 3) Know your strengths
19. Out of every course I've taken, the ENGM [engineering management] minor courses have always been the most directly useful. This course continues that trend. While it certainly can and should be refined, this was a fantastic course to take. 1) Interview chart; 2) Elevator speech; 3) Mock interview and resume critique
20. 1) How to work a career fair 2) practice interview and case studies – lots 3) I'm actually pretty well prepared for this stuff, which is nice to be reassured

## Conclusions and Plans for the Future

Results reinforced what the literature states about how such training can positively affect students' development. Positive comments were made regarding collaboration with the university career center and the way this course "demystified" the career search process. Targeted exposure to campus support services such as a career center is certainly not lost on students, especially when students have a centralized career center rather than one embedded in a specific school or department within a college or university.

The course was also helpful in increasing student career self-efficacy. Even if students knew what they were supposed to do in a career search and what types of careers they were interested in pursuing, this course clearly improved self-confidence in their knowledge of such concepts and procedures. Additionally, the class time and deliverables forced students' hands in actually doing the work required for a career search. In an academically rigorous engineering program where students are also deeply involved in various extra-curricular activities, it is easy for them to disregard the reasons they enrolled in such a program in the first place.

The authors have offered the course in the subsequent semester and continue to develop it based on the analysis of the pilot project. The best time to offer it may be in the fall when the career center has more career fairs and informational sessions. In addition, one assistant director of the career center indicated that students in the fall usually seem more focused about the job search than in the spring.

Whenever the course is offered, students' recommendations will be taken into account. For example, the same topics and assignments that earned positive feedback will be continued. The cover letter needs to be and has been moved to an earlier time in the semester. Guest speakers should continue to be invited and should be selected to share their expertise in some aspect of the job search with perhaps less time spent on describing their jobs. In addition, the student feedback seems to indicate that students cannot get enough training and practice in interviewing. Although two class sessions and two assignments were about interview skills, even more time may be needed on this topic, possibly having students practice in pairs and critique each other as they did with their elevator speeches. In any case, it is imperative that the course continue to equip students with the necessary tools for success in initiating and nurturing their careers. One goal of the course should be that students would agree with this student's statement: "I loved the relevancy of this course to things that I will be doing my entire life – extremely helpful!"

A tangential aspect for continuing this course is to see how it will affect student satisfaction long term in their undergraduate program. Annual exit surveys completed by graduating seniors typically rate career center support services very low. Whether or not the quality of service is actually low is subject for debate. However, if this intervention improves students' perceptions of the career center's quality of service resulting from collaboration between the engineering school and the career center, then this course has achieved additional value.

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## Appendix 1

### Sample of Universities and Undergraduate Career Development Courses Offered

These universities were chosen because they are from Vanderbilt's peer and/or aspirational groups. Only actual courses (either credit or non-credit) are listed, not non-credit workshops offered through career centers.

#### Peer Schools with Career Development Courses

Carnegie Mellon University – multiple courses, credit available up to 3 credits, optional, not engineering-specific<sup>20</sup>

Cornell University – College of Engineering, Career Development in Engineering, 2 credits<sup>21</sup>

Florida State University – Introduction to Career Development, credit available from 1 to 3 credits, not major-specific)<sup>22</sup>

Northwestern University – McCormick School of Engineering and Applied Science, Introduction to Career Development, no credit, required 10-week course, meeting 1 hour weekly<sup>23</sup>

Notre Dame University – multiple courses offered by the Career Center, 1 credit each<sup>24</sup>

#### Peer Schools without Career Development Courses

Brown University  
Columbia University  
Duke University  
Georgia Institute of Technology  
Johns Hopkins University  
Princeton University  
Rensselaer Polytechnic Institute  
Washington University  
Yale University

## Appendix 2

### Schedule of Course Topics and Assignments

Week	Topic	Assignment
1	Course overview.	Call no later than Aug. 23 for a mock interview with an employer on Sept. 6-7 (preferred). Alternatively you may schedule with career center staff for a mock interview between Oct. 8-Nov. 15.
2	Resumes and working a career fair This week: Walk-in resume critiques at the career center.	View online video on interviewing. Schedule a walk-in critique at the center.
3	Working a career fair, writing resumes, and finding a career as a consultant. Guest Speaker: alumnus and environmental consultant, company representative at previous career fairs.	Two hard copies of your resume and a .pdf file posted online. Make an appointment to have center staff critique and approve your resume between Sept. 5 and Sept 26. Due this week: Mock interviews with employers.
4	Elevator speech. In-class work on laptops. Information sessions begin this week. This week: Business, Communications, and Consulting Career Day.	Due: Elevator speech. Attend one career fair between Sept. 12-27 and two information sessions between Sept. 10-Nov. 16. You may substitute a second career day for two information sessions.
5	Using the career center's online resources. Guest Speaker: Assistant Director of the career center. This week: Non-Profit/Government Industry Career Day. Finance Career Day.	Due: In-class simulation exercise.
6	Interviewing skills. This week: Engineering & Information Technology Industry Career Day.	Due: Connect to and navigate the career center online resource and send e-mail through it to the Assistant Director.
7	Jobs for a mechanical engineer and interviewing tips. Guest Speaker: Mechanical engineering alumnus, experienced in interviewing.	Read the online assignment: the career center's information on interviewing.
8	Handling case interview questions. Guest Speaker: Engineering science alumnus, consultant, and current M.B.A. student.	Due: Interview chart.
9	Conducting company research online. Guest Speaker: Director of the Science and Engineering Library.	Bring laptops for in-class online research.
10	Networking and creating a LinkedIn profile. Guest Speaker: Principal in a search and consulting firm; experienced human resource professional.	Due: Company research assignment.
11	Various jobs and job searches of one computer science major. Guest Speaker: Computer science alumnus and software developer.	
12	Tips for a successful job search. Guest Speaker: Chemical engineering alumna, currently Vanderbilt Sustainability Outreach Coordinator	
13	Internships, job search ethics, and negotiating offers. Guest Speaker: Assistant Director of the career center.	Due: LinkedIn Profile online and e-mail to instructor
14	Cover letter	
15	Wrap-up Discussion. Student questionnaire.	Due: Cover letter with job description and revised resume