

Recommendation to Implement a Microsoft Excel Topics Course

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Abstract

The purpose of my senior project is to recommend the addition of a Microsoft Excel course to the Cal Poly Construction Management curriculum. My interest in this topic was sparked when I began my internship at Decker Electric in San Francisco during the summer of 2017. As a result of this internship, I discovered how inadequate my Excel skills were and how important Microsoft Excel is to the construction industry. Upon graduation, Cal Poly Construction Management students enter a workforce that relies heavily upon many different types of software programs that analyze information used daily in construction. With a rapidly growing industry that is constantly changing with new technology, Microsoft Excel will always be an important tool. There is currently no other platform by which one can create detailed spreadsheets and analyze and manipulate data. In the future, this senior project could translate into the implementation of a technical elective course that Cal Poly Construction Management students could elect to take and from which they could benefit greatly.

Keywords: Microsoft Excel, Topics Course, Construction Management

Background

This project stems from a personal experience I had while interning for Decker Electric in San Francisco during the summer of 2017. The Project Manager that I worked under was unlike any other I had seen: he did all of his estimating- bid proposals, submittals etc.- with the program Microsoft Excel. During my first day of work, he already let me know that my skills with Excel were not up to par with what he had expected of me as a college student. My task for the second day of work was to complete seven different Excel exercise modules through YouTube and turn them in at the end of the day. From there I realized I really needed to educate myself on the program in order to succeed in my current working environment and so that I could be more valuable to the company that I would work for post graduation. Upon realizing that my Excel skills were not what they should have been, I thought it would be of interest for the Cal Poly Construction Management program to implement this as a Topics course. No matter where a student will work in the industry upon graduating with a Cal Poly Construction Management degree, each graduate will need proper skills with Microsoft Excel in order to be of value to the company they will work for in the future. Our CM 280 BIM class only spends one lecture on Excel and goes through the material far too quickly to really garnish any useful skills with the program. I strongly suggest that a separate Microsoft Excel class for Construction Management students would be a practical and valuable course that would better prepare students for the workforce.

Methodology

The process I went through was to develop a practical and concise way to organize the structure of the course. In order for students to be able to gain the necessary knowledge, I propose that each week consist of a lecture followed by an in-class individual computer assessment on the previous lecture. Each module would be based around a few different concepts (charts and graphs, formatting, pivot tables, basic functions, hyperlinking spreadsheets, etc.) that would teach students how to create and display information on Excel spreadsheets in a clear and concise way. The following class meeting, students would be asked to perform and create a spreadsheet on the topic on which they were most recently lectured. There would also be in-class midterms correlated directly to the information discussed in lecture and one cumulative final. A class structure with this type of format would give students the opportunity to take what they learned in lecture and directly apply it to their assessment during the next class meeting. Week by week, students would obtain knowledge from each module that will prepare them for each assessment as the quarter progresses. A final team project would be an additional way to assess how students could work together in a group where they would be given a set of plans and required to have the following deliverables: complete construction cost estimate, building schedule, submittal and RFI templates, and financial analysis on the building's productivity. This end of quarter project would not only require students to use the knowledge they had obtained from each module, but again, would also assess how each team is able to work together in order to complete each deliverable. This course is designed for any student within the Cal Poly Construction Management program, no matter the academic standing. This course would also be of great value to the program because it would better prepare students for the assignments and labs that they must complete in the six Construction Management labs they must take throughout the curriculum. To summarize, the skills gained through this course would not only better prepare students for estimates and assignments they are faced with in the six big CM labs but would also prepare them for what they will face in the workforce.

Deliverables

This senior project has examined the possibility of a Microsoft Excel Topics course in the Cal Poly Construction Management curriculum. This discovery and Topics course recommendation leaves an opening for any future student or faculty member to research the interest and gauge whether or not it would be a course that students in the program would enjoy taking and find useful as a Topics elective course. This project also suggests how this class could be structured and taught. Please see attached Proposal for Topics Course.

Lessons learned

Because I am recommending an addition to the Cal Poly curriculum, I will also make a few suggestions about how to integrate my idea into the college curriculum. One idea is to require a Microsoft Excel class as a required General Education course for all students. However, that change would have to be made through the state of California in accordance with ABET

accreditation. It would take some time to create and develop a plan to get this class into the state of California's General Education system. In my perspective, the most effective and efficient way to assure that Cal Poly Construction Management students are knowledgeable and comfortable with their Microsoft Excel skills in preparation for the workforce, is to offer a Topics course. The topics course syllabus form created, and content from this report can be used by another senior project student to gauge student interest in the course. It would be a step in the right direction for the Cal Poly Construction Management staff or administrator to implement this course into the CM curriculum and the option to implement a topics course requires only the approval of the Construction Management Curriculum Committee.

Conclusion

Due to the fact that Microsoft Excel will be a valuable tool used in the construction industry for the foreseeable future, the Cal Poly Construction Management administration must find a way to get this training into a Topics course in order to properly educate its students for what they will be faced with once in a real work setting. Learning the ins and outs of Microsoft Excel in a lecture with online computer assessment course format, as stated in this Topics course recommendation paper, will give students the opportunity to gain the knowledge they will need to succeed in the workforce. In the future, another student can take what I have discovered and research the interest level the Cal Poly Construction Management students have for this Microsoft Excel Topics course. From there, they can bring it to the Cal Poly Construction Management Curriculum Committee for approval. If the implementation of this course is indeed a success in preparing students for what they will be experiencing in the workforce, then the course will be considered a success to both the department and its students.

References

Jim Burrows- Project Manager, Decker Electric 7/15/17

Paul Nielsen- Senior Project Manager, Decker Electric 7/15/17

Microsoft Excel