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Org-Coursepack: A Modular and Reusable Teaching Materials Template in Org-mode

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Software

- Review
- Repository
- Archive

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Summary

The Org-Coursepack provides a template for developing and managing teaching materials using Org mode, a major mode in GNU Emacs. The template is designed to be self-explanatory, as the documentation for it consists of an example course developed with this template.

Org-Coursepack started as an attempt to solve challenges authors experienced in creating and managing teaching materials. The key benefits of using the template as an instructor are summarized below.

First, sharing materials across courses becomes more effective and efficient with the template than with traditional means of creating lecture slides (e.g., PowerPoints or Beamer). This is because the template heavily relies on the file inclusion functionality of Org mode and is designed to be as modular as possible. As a result, a course topic can be used across multiple sections of the same course or across multiple courses—this means that making improvements on one lecture file will be automatically propagate across all sections and courses covering the topic, reducing redundancy and potential for inconsistency. Thus, Org-Coursepack would be especially useful when an instructor has multiple courses which share some common course materials.

Second, the flexible export system and output-specific export options of Org mode allow instructors to generate outputs in multiple formats. Any course-related material, whether a syllabus, exam review, or lecture, can be easily exported in the form of slides (e.g., via Reveal.js or Beamer backends) or handouts (e.g., via the LaTeX backend) while maintaining consistent content regardless of format. This allows instructors to create properly formatted, document-like handouts for their lectures, which have better presentation and legibility compared to scaled-down slides. In addition, instructors can choose to selectively present certain components (e.g., images, charts, or notes) depending on output format. These features eliminate the need for instructors to maintain separate files for different output formats.

Third, the template contains a) utility functions written in Emacs Lisp, b) shortcuts to Org mode functions, and c) basic class structures, all of which contribute to automating a variety of instruction-related tasks. The features include, but are not limited to, automatic class numbering and automatic creation of key content, such as course schedule for syllabi, summary of class materials, and exam keys.

In sum, the template can improve instructors' efficacy by minimizing redundancy and automating various tasks. This is important because repetitive, tedious, and tangential tasks—and the psychological distractions associated with them—can pull instructors' attention away from core instructional responsibilities. Removing such elements makes

course preparation more seamless, and redirecting the newly found time and mental resources to positive educational outlets can enhance instructors' intrinsic motivation and creativity (Csikszentmihalyi 2014).

We believe that students are the ultimate beneficiaries of this approach, as their overall learning experience can be enhanced through consistent, properly-formatted, and strategically presented course materials that are more engaging and are easier to comprehend. Such materials are also easier to digest and review outside the classroom.

Two business courses related to marketing analytics, which share about 60% of the course materials, were successfully created and managed using this template. We have received positive feedback from students about the benefits of having well-organized, quality teaching materials, as shown by the following comments from students' course evaluations:

> The slides are extremely helpful and I appreciate that because textbooks are expensive and unnecessary when the lecture material is of this caliber.

> The teaching materials could not be any better. It was very helpful to expect a handout at the beginning of each class, one that was formatted identically to the others and was very clear about communicating the content of the lecture.

The documentation provided in the Org-Coursepack is designed to be straightforward so that instructors with basic knowledge about Org mode can customize it to meet their unique needs, whether they are creating new course content or converting existing ones. Outside a traditional classroom setting, the tool maybe used for a wide range of instructional purposes, such as employee training sessions, workshops, and consumer education. Well-organized and effectively presented course materials can enhance fluency in self-regulated learning; hence the template may be especially beneficial for online courses where independent work and learner-content interaction are critical in student satisfaction and success (Kuo et al. 2014).

More broadly, Org mode is useful not only for instructors, but also for practitioners across a variety of fields. For instance, businesses can use the approach when documenting multiple and often overlapping products and services either for internal recording purposes or for presenting to external clients. It is also useful to those managing a myriad of legal or other administrative documents that often refer to one another or contain common elements. We hope that the Org-Coursepack, and Org mode in general, would contribute to the productivity of both those who use it and those who are served by it.

Csikszentmihalyi, Mihaly. 2014. *Flow and the Foundations of Positive Psychology*. https://doi.org/10.1007/978-94-017-9088-8.

Kuo, Yu Chun, Andrew E. Walker, Kerstin E.E. Schroder, and Brian R. Belland. 2014. "Interaction, Internet self-efficacy, and self-regulated learning as predictors of student satisfaction in online education courses." *Internet and Higher Education* 20. Elsevier B.V.:35–50. https://doi.org/10.1016/j.iheduc.2013.10.001.