Curricular Unit Template

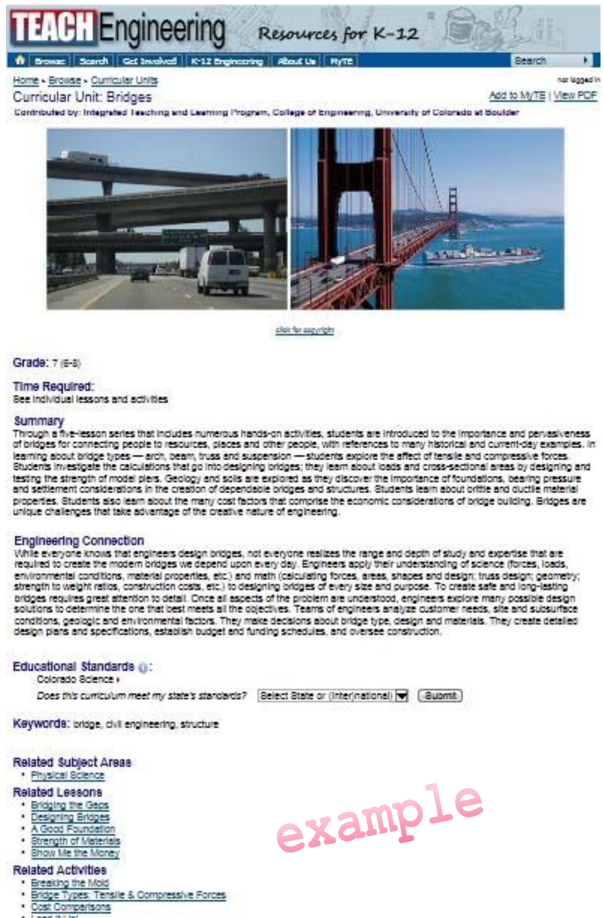
A published unit on *TeachEngineering* might look like this example ➔

The curricular unit template is the shortest one. It is basically a shell that ties together associated lesson(s) and activity(ies) into a curricular unit.

Information in the unit document (➔) provides teachers with key information to quickly review the unit to see if it meets their needs, before they look at the unit's lessons and activities.

From this point on, this template describes the **required** and optional components for all units published in the TE digital library collection.

Visit http://TeachEngineering.org > Browse > Curricular Units to see examples of unit content and how they render on the website.



Curricular Unit Title

[Provide the title of the unit. No formatting, such as italics or bold, permitted.]

Header

[(optional) Use Header to add an image or text at the top of the unit document.]

Image 1

ADA Description: Photo shows a female pilot reviewing a checklist while sitting in an airplane cockpit.

Caption (optional): Engineers design the control systems and human interfaces for flying airplanes.

Image file: cub_airplanes_unit_image1.jpg

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For more info: See **Requirements & Tips for Using Images** on the Submit Curriculum page.

Grade Level __ (__-__)

[What grade(s) is (are) targeted in this unit? "It is targeted for grade _, but could work for grades __ to __." *Example*: 8 (7-9) or 8 (8-8) for just eighth grade, or 8 (5-9) if it also works for lower-grade students.]

Summary

[Provide a brief paragraph summarizing the unit and the topics covered. Must be one paragraph of plain text, no images or formatting. Write in present tense, not future.]

Engineering Connection

[Provide 60-100 words or ~3 sentences clarifying how the scientific and mathematical concepts being studied in this unit pertain to real-world engineering. Do not recap the unit. It often works to associate big concepts to particular fields of engineering. Must be one paragraph of plain text, no images or formatting.]

Engineering Category = #_

[(optional for lessons and units; required for activities) Indicate which of the following three engineering categories best describes this unit's amount or depth of engineering content:

1. Relating science and/or math concept(s) to engineering
2. Engineering analysis or partial design
3. Engineering design process

Anecdotally, category 1 is primarily science/math with some engineering, category 2 items are primarily engineering with some science/math, and category 3 presents full engineering design. For more complete descriptions of each category, see the **TE Engineering Categories Description** document (pdf) on the Submit Curriculum page. In most cases, units and lessons will either not have a category or use the category of the most relevant lessons and activities below them. In rare instances, activities work as a whole, in terms of their level of engineering design content, so that the lesson or unit actually has a different category than the activities below it. For example, a unit might be category 3 because its lessons and activities contain all of the steps in the engineering design process even though none of those individual lessons and activities is categorized as providing the complete engineering design process.

Subject Area(s)

[Identify subject area(s) that are in common for every lesson and activity of the unit; all a unit's "child" documents will be linked to these same subject areas. Choose from: algebra, biology, chemistry, computer science, data analysis & probability, earth & space, geometry, life science, measurement, number & operations, physical science, physics, problem solving, reasoning & proof, science & technology. Users can browse TE for curricula by subject area.]

Keywords

Example: biomedical, biotechnology, body, health, human body, medical

[(optional) Provide 0-10 keywords. They should be words the layperson and a K-12 teacher would know and **might use to search** for the unit. They should apply to all lessons/activities in the unit, which means there might be few keywords. List in A→ Z order, lower-case unless proper nouns. Usually, make nouns singular. Avoid highly-technical or lingo words. It is likely you have used these words in the summary. Even though TE provides full text search capability, often these become the few keywords that are seen by other websites that search the collection.]

Educational Standards

[(optional) List any educational standards common to every lesson and activity of the unit. At least one must be from the International Technology and Engineering Educators Association (ITEEA), as described below. Choose the educational standards addressed in the activity from the state and national standards available at the online ASN viewer at http://www.jesandco.org/asn/viewer/default.aspx. These should be **specific standards, not just the broader objectives of the standards**. Please include the source, year, standard number(s) and text of each standard, and for ITEEA, provide the standard number, grade band, benchmark letter and text. *Examples:*

North Carolina, science, 2004, 1.01: Identify and create questions and hypotheses that can be answered through scientific investigations.

ITEEA, Standard 8, Grades 3-5, C. The design process is a purposeful method of planning practical solutions to problems.]

[Note: From the International Technology and Engineering Educators Association (ITEEA) standards, at least one of the ITEEA grade specific benchmarks must be identified as aligning with this curriculum to compensate for the fact that most states do not have engineering standards, while ITEEA does. (For example, look at the grade-specific benchmarks under ITEEA standards 8 and 11 for the engineering design process, and standards 14-20 for engineering applications.)]

[Special note for Massachusetts: The middle school science standards are written in the same format except that instead of a "strand" there is a number: 1 for Earth and Space Science, 2 for Life Science and 3 for the Physical Science strand. For example, 1.12 stands for the "Relate the extinction of species to a mismatch of adaptation and the environment" standard in the earth and space science strand.]

Related Lessons & Activities

[To make sure that all the associated lessons and activities of a unit are linked together in the *TeachEngineering* collection, list every one of them in this section. For each, provide its title.]

Related Lessons

- Lesson titles here in 1, 2, 3 order…

Related Activities

- Activity titles here…

Time Required __ minutes, hours, days or weeks *Example:* 6 hours

[(optional) To help in teacher planning, provide an estimate of time to complete the entire unit and its lessons and activities. Cannot be a time range, however you may include an optional text note for a brief explanation, such as: *Spread over six, one-hour class periods.* If summing up a total unit time does not make sense, add a note, such as: *See individual lessons and activities.*]

Unit Overview

[(optional) If it helps explain the unit, provide an overview to describe the parts and/or steps within a unit, or a recap of topics by lesson number.]

Unit Schedule

[*(*optional) If it helps explain the unit, provide a suggested schedule or describe how the various lessons build upon or relate to each other.]

Summary Assessment

[(optional) If you want, provide summary assessment tools to help teachers gauge students' comprehension of the unit topic(s), such as pre-/post-unit quizzes and tests.]

Attachments

[(optional) If the unit has any attachments, such as a test or quiz, list them here. On TE, they will be hot linked to files. In addition to PDF versions, provide original format versions (Word, Excel, PowerPoint) so teachers can modify. In listing the attachment names, include the file format (see example, below), to help teachers choose what to download/print. When naming files for attachments, use lower-case letters only (no caps). This includes file extensions: jpg, .doc, pdf, ppt, etc. Also, leave no spaces in the file names; use underscores instead.]

Examples:
Flying Solo Unit Pre/Post Quiz (pdf)
Flying Solo Unit Pre/Post Quiz (doc)
Flying Solo Unit Pre/Post Quiz Answers (pdf)
Flying Solo Unit Pre/Post Quiz Answers (doc)

Other

[(optional) This component is available for information that doesn't seem to fit in anywhere else.]

Redirect URL

[(optional) Provide one URL to direct teachers to required internet materials; URL will be rendered in *TeachEngineering* by a note in the document, like this: **Attention:** This unit requires the following internet resource: URL here.]

Contributors

[(optional) List the name(s) of who contributed to developing, testing, reviewing and editing this unit. List the primary creator first. Role and organization may be included, too.]

Example: Jay Shah, Malinda Schaefer Zarske, Janet Yowell

Copyright

[(optional) To include a brief copyright citation for the source of this curricular content, provide a copyright year and owner name. Check with your institution for the appropriate copyright text.]

Example: Copyright © 2010 by Regents of the University of Colorado. This digital library content was developed by the Integrated Teaching and Learning Program under National Science Foundation grant no. 0338326.

Supporting Program

[Briefly provide the name and organization of the source of this curricular content.]

Example: Integrated Teaching and Learning Program, College of Engineering, University of Colorado at Boulder

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