



Association of periOperative Registered Nurses (AORN)
2170 Parker Road
Denver, CO 80231

Contact Hour Calculation for Enduring/Web-based Materials

Enduring materials are designed for completion by learners, independently, at the learner's own pace and at a time of the learner's choice. The applicant designs the educational program, and, through a pilot study or other defensible mechanism, determines the number of contact hours to be awarded. The applicant must demonstrate the rationale for determining the number of contact hours to be awarded. Examples of methods to determine contact hours include pilot testing or word count formulas, such as the Mergener formula, a popular and widely accepted method of estimating the number of hours a written (or online) continuing education project will take to complete. A Mergener Formula calculator, provided by *Stephen Z. Fadem, M.D., FACP, FASN*, can be found online at <http://touchcalc.com/calculators/mergener>

Mergener Formula

Constants included in the Mergener Formula Sample:

Number of words:	3774
Number of questions	16
Difficulty of material	2.5

Determining difficulty of material--depends on target audience:

Very easy = 1; Somewhat easy = 2; Moderate = 3; Difficult = 4; Very difficult = 5

Mergener Formula using above sample: $0.9 \times [22.3 + (0.00209 \times \text{number of words}) + (2.78 \times \text{number of questions}) + (15.5 \times \text{difficulty of material})]$

Subtotal of Sample = 68.81766×0.9

Total minutes: $61.93589 = 1$ contact hour (always round down when determining actual contact hour)

See also: Mergener, MA, "A Preliminary Study to Determine the Amount of Continuing Education Credit to Award Home Study Programs," *American Journal of Pharmaceutical Education*, Vol. 55, Fall 1991 (263-266).



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Pilot-Testing

In order to identify potential problems and provide evidence of the effectiveness of a program, a pilot-test is conducted with a group of representative learners from the target audience before finalizing the education activity for distribution and use. A pilot test also documents the time required for the learner to achieve the objectives.

The number of RN pilot-testers varies depending on the purpose and design of the activity as well as the size of the target audience. The entire learning package should be completed by the pilot-testers as if they were completing it for continuing education credit, including posttest (self-assessments), return demonstrations or other requirements, and evaluations. Feedback from the pilot-testers enables the planning committee to improve the activity prior to making it available for CE credit. Conducted prior to implementation of the activity, the pilot-test provides evidence of the:

- a. Effectiveness of the design and the teaching/learning materials
- b. Time required to complete the activity.
- c. Basis for determining the number of contact hours to be awarded for successful completion of the activity.

The contact hours must reflect the documented time required by the pilot-test group to achieve the stated objectives. This may be an average of all time required or an average time of the majority of pilot-testers after discarding very short or very long time frames.

Upon completion of the pilot-test, the planners and content specialist(s) should carefully review the feedback/findings of the group to note if changes should be adopted before the activity is finalized or completed. In the application, you will be asked to describe what changes were made based on this evaluation. You may also want to provide supportive documentation of the rationale used to determine the number of contact hours to be awarded is submitted with application