

## **Curriculum Integration**

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### *IQP Student Schedule*

For a more in-depth discussion of writing an IQP, please see:  
<http://www.wpi.edu/Academics/Depts/IGSD/IQPHbook/ch8d.html>

The following is a guide, to be discussed and modified by your team and project advisor

- I. A-term
  - a. *Clearly* define problem statement: (*final form by end of A-term*)
  - b. Read “Yardsticks” in its entirety (*finish reading before beginning other work – truly valuable*)
  - c. Conduct **Literature Review** (*final form by end of A-term*)
    - i. Obtain *at least* 10 relevant sources – *discuss with advisor*
    - ii. Summarize relevant articles
    - iii. Interview MA educators
      - 1) Find other schools using kits – conduct interviews
    - iv. Create **Bibliography** (*final form by end of A-term*)
  - d. Create **Glossary**, if necessary (*final form by end of A-term*)
  - e. Create electronic **Table of Contents** within working IQP draft (*final form by end of A-term*)
  - f. Write working draft of **Methodology** (*finish draft by end of A-term*)
    - i. Use “Problem Statement” (see I.a. above)
    - ii. Write *short* “Introduction” to Methodology – describe *why* your team chose the given methodology
      - 1) briefly describe why this methodology is relevant
      - 2) briefly describe how the PIEE project works and how you are sponsored – (see <http://www.wpi.edu/Academics/PIEE/About/> and <http://www.wpi.edu/Academics/PIEE/Publications/nsfproposal.pdf>, to start)
      - 3) describe your sampling strategy or planned statistical analysis (if relevant)
        - a. determine access to necessary data
        - b. ex. Analyzing student test scores, fall versus spring
        - c. ex. Analyzing *all* students or a “random” sample...discuss with advisor
      - 4) describe any tangible products you might create (ex. Set of lesson binders (K-6), assessment sheets – discuss with MA educators and WPI advisors)
        - a. explain how these products relate science/technology to society (definition of an IQP)
  - g. Develop a standard format for lesson organization – list lessons in spreadsheet or database by WPS Benchmark and seasonality: (*final form by end of A-term*)
  - h. Survey students regarding perceptions of engineering in the fall (*finish survey by end of Sept. 2005*) – repeat survey in C- or D-term – discuss with advisors
- II. B-term
  - a. Rework and refine **Methodology** (*final form by end of B-term*)

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- b. Collect “perfect” lesson plans from other IQP groups – content and format should be in publishable form, revisions should have already taken place following teacher commentary (*begin in mid B-term, continue throughout C- and D-term*)
    - i. Ensure lessons were labeled correctly based on grade and sequence (ex. 4.C. for the third (“C”) lesson in the fourth (“4”) grade binder) – each page in the 4.C. section should be numbered – (ex. 4.C.1., 4.C.2...4.C.12, if there were 12 pages).
    - ii. Ensure that “student worksheets” or other “supplementary” pages included in each lesson plan do NOT have numbers – numbering may confuse students: only the actual lesson should contain numbers
    - iii. Collect data from tables on page 1 of all lessons: this will allow you to organize lessons by benchmark and seasonality
  - c. Collect **Findings** – based on “Problem Statement” or Hypothesis
    - i. Organize into relevant, readable format
- III. C-term
- a. Check test scores of students in spring (*now, or in D-term*) – *discuss with advisor*
    - i. determine whether PIEE has improved technology / engineering scores
  - b. Continue to collect “perfect” lesson plans from other IQP groups – content and format should be in *publishable* form, revisions should have already taken place following teacher commentary (*begin in mid B-term, continue throughout C- and D-term*)
    - i. See sections II.b.i-iii
    - ii. Compile set of binders, K-6 in paper and electronic formats – one CD for each grade, with working Table of Contents
  - c. Using organized grid of benchmarks, ensure that each grade has *more than one* lesson plan targeting *each* benchmark – teachers should have a selection of lessons from which to choose – discuss with your advisor whether other IQP teams *have* or *have not* provided sufficient lessons to cover all benchmarks more than once – teams that *have* done so should be congratulated! (*nearly complete by end of C-term – do final lesson collection in early D-term*)
  - d. Write **Analysis of Findings** (of assessments, scores, interviews, etc.) (*final form by end of C-term*)
  - e. Write **Conclusions** based on **Analysis** and **Findings** (*final form by end of C-term*)
  - f. Write **Recommendations** based on **Conclusions** (*final form by end of C-term*)
  - g. Write **Abstract**, essentially a *very* short summary of your entire IQP (*final form by end of C-term*)
  - h. Write **Abstract** (up to 80 words, strictly enforced) and **Executive Summary** (*final form by end of C-term*)
  - i. Create **Appendices A - ?** – for each “product” (ex. Grade 3 Binder), you will most likely reference it as an Appendix (*begin to in C-term, continue to collect and polish through D-term*)
    - i. Tangible products are technically *not* the purpose of your IQP: they are wonderful by-products that will benefit the Worcester Public School System and K-6 educators all over the United States.
- IV. D-term
- a. Finish collecting “perfect” lesson plans from other IQP groups – all lessons should be ready for general dissemination in MA (*finish by mid D-term*)

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- b. Finish compiling set of binders, K-6, in paper and electronic formats – one CD for each grade, with working Table of Contents
  - i. Distribute electronic and paper copies as determined by PIEE advisors and fellows
- c. Complete and print final copy of IQP – include with final copy electronic versions (CDs) of all binders and other “products”
- d. Thank your advisors; prepare to win President’s Award for Best IQP of 2005 – 2006!