Questions to Consider: Using the “Backwards Design” Process to Infuse Undergraduate Research into your Courses

What tangible artifact would you like your students to produce?
Poster, paper, lab report, web page, magazine, slide show—or perhaps software, art work, engine or device, or?

What class(es) would you like to concentrate on?
First or second year? Junior or Senior year? For majors or for general education students? Required or elective?

The class (level and audience) that you wish to infuse may influence both how you structure the research process for the students, and what you wish to accomplish with them. In other words:

First and Second year classes may, perhaps, focus on skills development and opportunity to understand disciplinary or interdisciplinary methodology. The topics that student research might be faculty-initiated or assigned. The projects might more appropriately be collaborative. The necessary decisions on your part would then include—Content: what skills do you wish them to learn? What methods? In this more process-oriented approach to teaching research skills: How will the desired final artifact show the skills and methods learned? If the research topic will be faculty-initiated, will you offer them a master list from which to select a topic, or will you simply assign a topic outright? If the projects will be collaborative, what structure will you use? 1) Size of groups 2) Method for selecting groups 3) Outcome for groups: single artifact for all? Or single artifact for whole team plus individual artifacts? Or simply individual artifacts for all? Will you offer formatting guidelines for the artifact(s)? 4) Will class time be used for group work, or will students be expected to work together outside of class, and if so, how much? 5) How will the project outcomes be disseminated? In-class or online presentations? What format or structure will you use for the class or virtual presentations? Will you also recruit for campus URSCA presentation events? System, state or national conferences? 6) How will presentations be assessed? How will the actual artifacts created be assessed? How will class participation in presentations be assessed?

Junior and Senior level courses with embedded research projects are often more heavily discipline-based, outcome-oriented, individualized, and with potential to be of interest to a professional audience. The same issues of content and structure to achieve the desired outcome will apply: will you assume a methodology or will you need to incorporate skills and methods training into the project? Will you assign topics or allow students to self-select? If self-selected, what general guidelines will you offer to help them make good topic decisions, and what topic-approval process will you build into the course schedule. Will you allow them to work in groups or will the projects be wholly individualized? How will the project outcomes be disseminated? Class presentations? Campus URSCA presentation events? System, state or national conference?

Once these decisions have been made, then you can begin to build the research project design into your syllabus, working backward from the presentation day to each of the deadlines or milestones you deem necessary for student success, and what outcome you need at those junctures. For myself, with upper level and lower division courses, I develop plans and schedules that include: date for general class discussion of project and distribution of materials explaining the project and deadlines; date for determining whether group or individual project, and for finalizing group members; date for approval of groups (where relevant); date for submission of topic requests; date for receipt of green light approvals to proceed with topic; date for project check-ins; date(s) for in-class group work (where relevant); dates for in-class presentations and process for determining order of presentations; process for assessing both presentations and the actual artifacts being presented.

These kinds of projects can be fun, and very interesting to assess and supervise. Chances are, you are already making these kinds of project and syllabus decisions on a regular basis. In spelling out some of these decision-making processes, I am probably emphasizing things with which most faculty are deeply familiar, and applying them explicitly to the process of infusing UR into your courses.

More questions? Contact Dr. Lissa Schneider-Rebozo, URSCA Director, University of Wisconsin-River Falls