September 29, 2014

TO: Council on Academic Affairs
Council on Graduate Studies

FROM: Dr. Rebecca Throneburg

RE: Edits to the Directions for the Course Proposal Format Form

Attached is an updated copy of the Course Proposal form directions. It includes a general suggestion that catalog course descriptions should typically be 4 to 5 lines long or less (See #8 on page 1). In addition, references and suggestions about citations in Appendix C were updated as outlined below.

Let me know if you have any questions.

Updates to the Bibliography for Appendix C of the Directions:

(1) near the top of page 12 -- Ericsson, Krampe, & Tescher-Romer, **2003** -- should be **1993**,

(2) near the middle of page 14 -- Clark, **1989** --- should be **1990**; **also, cut the parenthetical** "(encompassing 70 smaller studies)," as Clark 1990 is a meta-analysis, but it encompasses fewer than 70 studies (although this does appear to be the cited work), and

(3) in References list on page 16 -- Nilson, L.B. (2003) -- was never cited in the text of Appendix C, **this citation was cut from attached reference list**.

Added the following Missing References to Appendix C: Course Design Resources

Berry, D. C., & Broadbent, D. E. (1988). Interactive tasks and the implicit-explicit distinction. *British Journal of Psychology*, *79*(2), 251–272.

Clark, R. E. (1990). When teaching kills learning: Research on mathemathantics. In H. Mandl, E. de Corte, N. Bennett, & H. F. Friedrich (Eds.), *Learning and instruction: European research in an international context* (Vol. 2.2, pp. 1–22). Oxford, England: Pergamon.

Clement, J. (1982). Students' preconceptions in introductory mechanics. *American Journal of Physics*, *50*(1), 66–71.

Cronbach, L. J., & Snow, R. E. (1977). *Aptitudes and instructional methods: A handbook for research on interactions*. New York, NY: Irvington Publishers.

Davis, B. G. (1993). *Tools for teaching* (1st ed.). San Francisco, CA: Jossey-Bass.

Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, *100*(3), 363–406.

Fink, L. D. (2003). *Creating significant learning experiences: An integrated approach to designing college courses* (1st ed.). San Francisco, CA: Jossey-Bass.

Kalyuga, S., Ayres, P., Chandler, P., & Sweller, J. (2003). The expertise reversal effect. *Educational Psychologist*, *38*(1), 23–31.

Klahr, D., & Nigam, M. (2004). The equivalence of learning paths in early science instruction: Effect of direct instruction and discovery learning. *Psychological Science*, *15*(10), 661–667.

Kyllonen, P. C., & Lajoie, S. P. (2003). Reassessing aptitude: Introduction to a special issue in honor of Richard E. Snow. *Educational Psychologist*, *38*(2), 79–83.

Reber, P. J., & Kotovsky, K. (1997). Implicit learning in problem solving: The role of working memory capacity. *Journal of Experimental Psychology: General*, *126*(2), 178–203.

Sun, R., Merrill, E., & Peterson, T. (2000). Knowledge acquisition via bottom-up learning. In C. T. Leondes (Ed.), *Knowledge-based systems: Techniques and applications* (pp. 249–291). San Diego, CA: Academic Press.

Walvoord, B. E., & Anderson, V. J. (1998). *Effective grading: A tool for learning and assessment* (1st ed.). San Francisco, CA: Jossey-Bass.

Eastern Illinois University
Directions (pgs 1-5) and Resources (appendices pgs 6-16)

Banner/Catalog Information (Coversheet)

1. Indicate whether this is a new course or the revision of an existing course.

2. – Enter the course prefix and number (e.g., ART 1234).
   - Include "G" as the 5th digit if this is a general education course.
   - Course number may be up to 5 digits long if the department uses additional numerals or letters at the end of their 4 digit course numbers to distinguish different versions of the course

3. The short title is used for transcripts; it may be up to 30 characters, including spaces.

4. The long title is used for the course catalog; it may be up to 100 characters including spaces.

5. Hours per week
   – Enter the number of hours per week spent in traditional class instruction; 50 minutes of class time equals one hour.
   - Enter the number of hours per week required in lab, studio, practicum, clinical, or internship settings.
   - Enter the semester credits earned for the course; one semester hour of credit represents a minimum of 37.5 hours of total class, lab, studio, practicum, clinical, internship, and out of class student preparation (See IGP 46.1 Credit Hour Policy).

6. Check the terms in which the course will be typically offered each academic year.

7. Check the term and enter the calendar year in which the course will first be offered.

8. -Write the course description exactly as it will appear in the course catalog (Typically not more than 4-5 lines long.).
   -List WI or WC at the end of the course description if the course is a writing-intensive or writing-centered course.
   - Include the IAI code if a course is being revised and already has an existing approved IAI code.
   -Once the course proposal form is approved, the Academic Affairs and/or Graduate College staff will include in the council minutes the complete course description (course prefix/number, title, credit hours, prerequisites, co-requisites, restrictions, etc.) for insertion into the undergraduate and/or graduate catalogs.

9. Course attributes
   - If this is a general education course, enter the appropriate general component (Complete general education assurance section in part I, #4)
   - Check applicable attributes for cultural diversity, honors, writing-centered, writing-intensive, or writing active designation. (Justification/description included in part I, #3 or #4)
   Leave the items blank if none of the course attributes apply.

10. Check all instructional delivery attributes which apply to this course.
    - Refer to EIU Credit Hour policy (IGP 46.1) describing type of courses if needed.
    - In "online" courses, 100% of instruction is conducted online.
    - In "hybrid" courses, some—but not all—instruction is conducted online; some face-to-face instruction is delivered. (online and hybrid justification and assurances completed in Part I, #5)

11. List course(s) to be deleted from catalog once this course is approved. Indicate "None" if there are no courses to be deleted.

12. Equivalent course(s)
    - List any existing courses that are equivalent to this course. Indicate "None" if there are no equivalent existing courses. (Justification included in part I, #3)
    - Check whether or not equivalent courses may be taken for credit

13. Prerequisite(s)
    – Identify the prerequisite(s), including required test scores, courses, grades in courses, and technical skills. Indicate "None" if there are no prerequisites. (Justification for pre-requisites and co-requisites described in part I, #3)
    -Indicate whether any prerequisite course(s) MAY be taken concurrently with the proposed/revised course.
    - Indicate whether or not coding should be entered in Banner to enforce course prerequisites.
    - If coding is to be entered into Banner, then identify the minimum grade required of the prerequisite course(s). For example: "C" or better.
    - Indicate who, if anyone, may waive course prerequisite(s).

14. Co-requisite(s). List all co-requisite courses which must be taken during the same term as this course. Indicate "None" if there are no co-requisites

15. Enrollment restrictions (justification included in part I, #3). Indicate if there are groups of students who may or may not take the course.
    -If enrollment in the course is limited to specific degrees, colleges, majors, levels, or classes, indicate so here. If enrollment is not limited, indicate "All."
    -If students in specific degrees, colleges, majors, levels, or classes are prohibited from enrolling in the course, indicate so here. If on-campus students may not take a technology-delivered course, note that here as well. If there are no prohibitions, indicate "None."

16. Indicate if the course may be repeated for credit or not.
    Despite a "No" answer here, courses in which grades of D, F, NF, NNC, or NC (NOT A, B, C, or CR) were received may be repeated. A student who receives a grade of D, F, NF, NNC or NC in an undergraduate course may repeat the course at Eastern. The highest grade received for the course, taken at Eastern, will automatically be included in the computation of the cumulative GPA. The initial grade and the repeat grade will appear on the student's record. The student must not have been previously enrolled in or received credit for a higher level course for which the repeat course is a prerequisite, nor may he/she repeat a course which substantially duplicates, at a lower level, a course or courses which he/she has already successfully completed. However, students who successfully completed a prerequisite course with a "D" are allowed to enroll in a subsequent course and its repeated prerequisite simultaneously.

17. Enter any limit on the number of hours from this course that may be applied to a major or minor.

18. Enter the appropriate grading method: Standard (A-B-C-D-F), CR/NC (credit/no credit), Audit, or ABC/NC (A-B-C-no credit).

19. Indicate which, if any, special grading provisions apply to this course.

20. Describe additional costs for supplemental packets, hardware/software, or any other additional instructional, technical, or technological requirements.

Students may be required purchase certain supplementary material for a course. Workbooks, study guides, laboratory manuals, periodicals, or software can be required for purchase by the students. See IGP #49 for supplemental materials and software policy and procedures.

- Course Charges (see IGP #125) Course charges are defined as amounts to be paid by students for supplies, materials, or other expenses of a course or program which are directly related to student participation and which may vary in amount from one student to another. Examples: materials used for class projects which the student retains; materials which are used, broken, or destroyed; cost of maintenance of supplies such as towels/laundry; and transportation expenses for field trips. Students shall be notified in the online schedule for registration which courses have approved course charges and the amount of the course charges. Fees for courses are charged directly to the students when they register for the class. Requests for a new course charge, including a detailed justification shall be submitted by the Department Chair for review by the Dean and by the Vice President for Academic Affairs. If endorsed by the Vice President for Academic Affairs, the request will be routed to the President's Council for consideration and recommendation by the President. Therefore, a fee listed here is not official until approved through that process.

21. Indicate the relationship between this course and community college courses.

Rationale, Justifications, and Assurances (Part I)

1. Impact

-Specify whether this course will be required (for a major, minor, certificate program) or used as an approved elective.

- If the proposed course changes a major, minor, or certificate program in or outside of the department, you must submit a separate proposal requesting that change along with the course proposal. Provide a copy of the existing program in the current catalog with the requested changes noted

2. Rationale

– If this is a new course, describe the rationale for developing it, focusing on how the new course fulfills program need or addresses a gap in curriculum.

- If this is a revised course, summarize the rationale for revision, focusing on the most significant changes being made.

3. Justifications

Provide appropriate rationales or descriptions for:

- the similarity of this course to an existing course.
  If the content substantially duplicates those of an existing course, the new proposal should be discussed with the appropriate chairpersons, deans, or curriculum committees and their responses noted in the proposal.
- the prerequisites or co-requisites for the course. (indicated in Coversheet, #13 & #14)
- the enrollment restrictions for the course (indicated in Coversheet, #15).
- how the course meets the expectations for the designation of writing-active, -intensive, or –centered. (if indicated in Coversheet, #9) See Appendix B for description of writing levels.

4. General Education Assurances

If the course will be used to fulfill a general education requirement,

a. Describe how the course meets expectations of the general education requirement. (See Appendix A for University Learning Goals.See Appendix B for definitions components of Geneal Education.

See Appendix C for Course Design Resources related to learning objectives, instructional, and assessment practices.)
b. Describe how practices in each of the following will support student attainment of the undergraduate University Learning Goals:
Curriculum - To what degree does this course's curriculum address this learning goals. That is, to what degree do the course's content and learning objectives relate to the skills in the learning goals or sub-goals?
Instruction - In this course, how frequently are skills from the learning goals taught in an explicit or direct manner? That is, to what degree do the course's instructors use class time and/or activities to directly deliver instruction to help students learn the skills of the goals or sub-goals?
Assessment - To what degree does this course's assessment of student learning relate to learning goal skills? That is, to what degree do the assignments, projects, and exams directly assess if students can do the skills, and to what degree does that assessment factor into a students' grade in the course?

5. **Online Delivery Justification & Assurances**
Standards and implementation of online courses and programs should mirror the academic rigor, assurance of academic integrity, and close faculty-student interaction that on-campus courses provide. Online courses should be taught by trained and responsive faculty who make quality instruction and student needs their priority (See Appendix C for Course Design Resources)

Explain why the course or section of the course will be delivered in an online or hybrid format and specifically:
   a. Describe how the instructional materials and assessments in the online course will be used to support students' achievement of the specified learning objectives
   b. Describe how the integrity of student work will be assured
   c. Describe provisions for and requirements of instructor-student and student-student interaction, including the kinds of strategies that will be used to promote the interaction (e.g., peer discussion, collaborative learning strategies, video conferencing, etc.)

Note: If students with disabilities enroll in the course, provisions for accommodating students with disabilities must be made.
Also note: Any instructors of technology delivered courses/sections (which include online and hybrid courses with more than 50% online delivery) must submit proof of having completed the Online Course Development Institute (OCDI), Illinois Online Network's "Master Online Teacher" certificate or another documented and equivalent training activity before teaching the courses/sections for the first time.

Model Syllabus Information (Part II)

1. List the course number, title, and credit hours.

2. Include the catalog course description.

3. List the course's learning objectives (See Appendix C for Course Design Resources for writing objectives.)
   - If this is a undergraduate course, learning objectives reflecting the undergraduate university learning goals (see Appendix A) should be included and labeled appropriately.
   - If this is a graduate course, learning objectives reflecting the university's established goals for learning at the graduate level (see Appendix A) should be included and labeled appropriately.

4. List textbooks (include author, publisher, and publication date), supplemental readings, and required materials

5. List the topical outline of the course, organized for a 15-week semester (Note it should be evident how the instructional time and student work complies with the Credit Hour Policy, IGP 46.1, for the various planned modes of delivery as indicated on the coversheet, #10).

6. List the categories of assignments and evaluations used to determine student grades (Appendix C offers resources that instructors could consider in planning assignments and evaluations to assess student learning).
   - Include the relative weights (percentage) for each category; be sure the weights total 100%.

   For courses numbered 4750-4999, specify additional or more stringent requirements for students enrolling for graduate credit; these include:
   - Projects that require application and analysis of course content.
   - Separate methods of evaluation for undergraduate and graduate students.

7. Grading scale to be used in the course.

8. Include a table that correlates the course's learning objectives to the course's categories of assignments and evaluations. The learning objectives should be listed in the left column; the categories of assignments and evaluations (including grading weights) should be listed across the top row. An "X" should be placed in the appropriate cells to indicate which assignments and evaluations correspond to each learning objective.

Appendix A: University Learning Goals

Undergraduate University Learning Goals

Critical Thinking (CT) - EIU graduates question, examine, evaluate, and respond to problems or arguments by:

CT-1. Asking essential questions and engaging diverse perspectives.

CT-2. Seeking and gathering data, information, and knowledge from experience, texts, graphics, and media.

CT-3. Understanding, interpreting, and critiquing relevant data, information, and knowledge.

CT-4. Synthesizing and integrating data, information, and knowledge to infer and create new insights

CT-5. Anticipating, reflecting upon, and evaluating implications of assumptions, arguments, hypotheses, and conclusions.

CT-6. Creating and presenting defensible expressions, arguments, positions, hypotheses, and proposals.

Writing and Critical Reading (WR) - EIU graduates write critically and evaluate varied sources by:

WR-1. Creating documents appropriate for specific audiences, purposes, genres, disciplines, and professions.

WR-2. Crafting cogent and defensible applications, analyses, evaluations, and arguments about problems, ideas, and issues.

WR-3. Producing documents that are well-organized, focused, and cohesive.

WR-4. Using appropriate vocabulary, mechanics, grammar, diction, and sentence structure.

WR-5. Understanding, questioning, analyzing, and synthesizing complex textual, numeric, and graphical sources.

WR-6. Evaluating evidence, issues, ideas, and problems from multiple perspectives.

WR-7. Collecting and employing source materials ethically and understanding their strengths and limitations.

Speaking and Listening (SL) - EIU graduates prepare, deliver, and critically evaluate presentations and other formal speaking activities by:

SL-1. Collecting, comprehending, analyzing, synthesizing and ethically incorporating source material.

SL-2. Adapting formal and impromptu presentations, debates, and discussions to their audience and purpose.

SL-3. Developing and organizing ideas and supporting them with appropriate details and evidence.

SL-4. Using effective language skills adapted for oral delivery, including appropriate vocabulary, grammar, and sentence structure.

SL-5. Using effective vocal delivery skills, including volume, pitch, rate of speech, articulation, pronunciation, and fluency.

SL-6. Employing effective physical delivery skills, including eye contact, gestures, and movement.

SL-7. Using active and critical listening skills to understand and evaluate oral communication.

Quantitative Reasoning (QR) - EIU graduates produce, analyze, interpret, and evaluate quantitative material by:

QR-1. Performing basic calculations and measurements.

QR-2. Applying quantitative methods and using the resulting evidence to solve problems.

QR-3. Reading, interpreting, and constructing tables, graphs, charts, and other representations of quantitative material.

QR-4. Critically evaluating quantitative methodologies and data.

QR-5. Constructing cogent arguments utilizing quantitative material.

QR-6. Using appropriate technology to collect, analyze, and produce quantitative materials.

Responsible Citizenship (RC) - EIU graduates make informed decisions based on knowledge of the physical and natural world and human history and culture by:

RC-1. Engaging with diverse ideas, individuals, groups, and cultures.

RC-2. Applying ethical reasoning and standards in personal, professional, disciplinary, and civic contexts.

RC-3. Participating formally and informally in civic life to better the public good.

RC-4. Applying knowledge and skills to new and changing contexts within and beyond the classroom.

Graduate Goals for Learning

1. Depth of content knowledge.
2. Effective critical thinking and problem solving.
3. Effective oral and written communication.
4. Advanced scholarship through research or creative activity

Appendix B: Special Course Attributes

Writing-Active, -Intensive, and –Centered Courses

In **writing-active courses**, frequent, brief writing activities and assignments are required. Such activities -- some of which are to be graded – might include five-minute in-class writing assignments, journal keeping, lab reports, essay examinations, short papers, longer papers, or a variety of other writing-to-learn activities of the instructor's invention. Writing assignments and activities in writing-active courses are designed primarily to assist students in mastering course content, secondarily to strengthen students' writing skills.

In **writing-intensive courses**, several writing assignments and writing activities are required. These assignments and activities, which are to be spread over the course of the semester, serve the dual purpose of strengthening writing skills and deepening understanding of course content. At least one writing assignment is to be revised by the student after it has been read and commented on by the instructor. In writing-intensive courses, students' writing should constitute no less than 35% of the final course grade.

In **writing-centered courses** (English 1001G, English 1002G, and their honors equivalents), students learn the principles and the process of writing in all of its stages, from inception to completion. The quality of students' writing is the principal determinant of the course grade. The minimum writing requirement is 20 pages (5,000 words).

General Education Components / Cultural Diversity Designation

General Education at Eastern Illinois University offers students an intellectual foundation for their future academic, professional, and personal lives. Mindful scholarship necessitates not only dedicated study but also reflection on the purposes and consequences of that study. By fostering serious and enthusiastic learning, Eastern Illinois University seeks to instill the value of intellectual curiosity and lifelong education in its students. Equipped with the values and traditions of scholarship, students will be better prepared to fulfill their duties as responsible citizens and capable leaders in a diverse world. The general education curriculum is designed to develop and strengthen those attitudes and behaviors integral to responsible global citizenship—ethical behavior, civic participation, an understanding of history, and an appreciation of diversity both at home and abroad. Responsible citizens not only comprehend world-shaping forces and events and the varied experiences that have shaped human culture, but also use that understanding to make informed, objective, and ethical decisions. They understand their responsibility as educated members of society and actively participate in their communities. Finally, responsible global citizens appreciate the diversity of the world in which they work and live.

To receive the CULTURAL DIVERSITY designation, courses will:

1. Include one or more of the following as their focus or as a means to explore some other topic: a. the study of diverse peoples (including issues of class, disability, ethnicity, gender, race, and sexual orientation) in the U.S. and abroad; b. the history, language, and/or traditions

(anthropological, artistic, literary, philosophical, political, or sociological) of other countries or cultures; c. the role of cultural sensitivity in making informed and ethical decisions.

2. Reinforce the importance of attending to a plurality of voices (including those from traditionally underrepresented groups) to better understand human history, culture, and decision making.

3. Include among their outcomes the goal of enabling students to appreciate, live, and work with people who are different from them

General Education Components

In **physical and biological science courses**, students experience the rigor and practice of scientific inquiry through classroom and laboratory experiences. They learn to consider analytically the methods of describing, predicting, understanding, and explaining physical and biological phenomena. In these courses, students confront the social, economic, political, and ethical implications of science and technology as well as the dilemmas they create.

The **social and behavioral sciences** focus more directly on understanding society and the individual. In these courses, students will have the opportunity to apply various methods of inquiry and analysis, both quantitative and qualitative, to the study of the human condition. These sciences emphasize the importance of understanding the diversity of human cultures, their socio-historical context, and one's personal responsibility for being not only a good citizen, but also a steward of the environment.

The **humanities** provide sources and methods for reflection upon human experience in its historical, literary, philosophical, and religious dimensions. The basis of instruction in these disciplines is primarily the interpretation and critical analysis of written texts. The goal of humanities courses is to provide students with the foundations and methods necessary for a critical understanding of languages, cultures, and traditions, including those that are different from their own.

Courses in **the fine arts** provide students with a basis for understanding and evaluating musical, theatrical, and visual works in terms of their production and aesthetic reception. In these areas students learn to apply historical, philosophical, and critical concepts to specific works and genres. The goal of instruction in the fine arts is to provide students with the foundations and methods necessary for a critical appreciation of various artistic and aesthetic traditions, as well as the evaluation of particular musical, theatrical, or visual works.

Senior Seminars

The Senior Seminar at Eastern Illinois University is designed to be a cross-disciplinary culminating experience that will provide students with an opportunity to apply concepts and use skills developed in both their general education and major courses. Information about topics of major importance (e.g. the Holocaust, Social Movements, Women in Science, Technology, Controversies in Education, Sociobiology, etc.) will be read, analyzed, discussed, and written about in a three semester-hour seminar led by a qualified faculty member of a discipline different

from those of the students. As an element of the general education curriculum, each senior seminar shall focus on some aspect of citizenship. The senior seminar should give students experiences in synthesizing, analyzing, and refining ideas/concepts while practicing oral and written communication.

To this end, students should

1. have the opportunity to obtain information on a topic from a variety of written sources, some including quantitative data.
2. demonstrate their critical thinking skills by processing information from diverse sources.
3. practice their ability to conduct a rational dialogue with others on topics generated by course materials and outside research.
4. express in written and oral forms their synthesis of a topic and a reasoned defense of conclusions flowing from the synthesis.
5. bring the skills and viewpoints acquired in their major curricula to bear on problems/situations not directly studied in their major field.
6. find links between their formal course work and contemporary problems/events.
7. learn to analyze their own views in light of readings and discussions in order to make informed, responsible, and ethical civic and personal decisions.

The senior seminar carries three hours of credit because:

1. It provides faculty adequate time to deliver a challenging and intellectually rigorous course whose credit hours parallel those of other senior-level offerings; and
2. It facilitates senior-level assessment of general education.

It is appropriate that university assessment occur during the senior seminar so that valid and meaningful data can be obtained to guide faculty and administration in ensuring that the university is achieving its mission and that the senior seminar is fulfilling its mission and purpose. As a result, various required activities in the senior seminar will assess Eastern's undergraduate learning goals. All senior seminars must assess students' performance in these areas. Additional assessment of an individual senior seminar is the responsibility of the instructor and should be based on the instructor's established learning objectives for the course. Assessment activities should be scheduled in ways that minimize disruption of the academic content and flow of the course.

Appendix C: Course Design Resources

(Used with permission from Marsha Lovett, Ph D, Director of the Eberly Center for Teaching Excellence and Innovation at Carnegie Mellon at http://www.cmu.edu/teaching/designteach/)

The following information is provided purely as a resource that faculty choose to consider when new courses are being developed and existing courses are being revised. It is not meant to be prescriptive or constraining as faculty develop courses.

•Consider where the course fits into the university/department/major's curricular goals and course sequences

- Determine the broad goals of the course and then articulate learning objectives for the course. Design the course with a strong internal structure conducive to student learning. Alignment among three main course components ensures an internally consistent structure. Alignment is when the:
  - OBJECTIVES articulate the knowledge and skills you want students to acquire by the end of the course;
  - ASSESSMENTS allow the instructor to check the degree to which the students are meeting the learning objectives; and
  - INSTRUCTIONAL STRATEGIES are chosen to foster student learning towards meeting the objectives.

LEARNING OBJECTIVES

We should think in terms of what we want the students to be able to do at the end of the course. It is very helpful to articulate learning objectives by completing this prompt:
"At the end of the course, students should be able to _____."

Keep in mind that declarative and procedural knowledge are not the same, nor do they enable the same kinds of performance. It is common, for instance, for students to know facts and concepts but not know how or when to apply them. In fact, research on science learning demonstrates that even when students can state scientific facts (for example, "force equals mass times acceleration"), they are often weak at applying those facts to solve problems, interpret data, and draw conclusions (Clement, 1982). Studies have also shown that students can perform procedural tasks without being able to articulate what they are doing or why (Berry & Broadbent, 1988; Reber & Kotovsky, 1997; Sun, Merrill, & Peterson, 2000). For example, business students may be able to apply formulas to solve finance problems but not explain their logic or the principles underlying their solutions. Similarly, design students may know how to execute a particular design without being able to explain or justify the choices they have made.

Use active verbs, avoiding such terms as "understand," "recognize," "appreciate," etc. Include a range of learning objectives that reflect learning from lower-order (knowledge, comprehension, application) through higher-order (analysis, evaluation, and synthesis/creation).

PLANNING COURSE CONTENT

The course structure refers to the choice of topics and the organization and sequencing of course content. Remember that the choice of topics and their organization should always support the learning objectives for the course.

Woolvard and Anderson (1998) point out that although all teachers want and need their students to (1) master course content and (2) learn how to use that content in some way, a great many instructors devote their time to the first task and neglect the second. Focusing too much on coverage – i.e., including too many topics – can actually impede student learning by crowding out opportunities for students to practice

applying the skills and knowledge they gain. It is important to determine a reasonable scope for your course, that includes essential content but which also provides opportunities for students to engage actively with this content so that deeper learning occurs. Research has shown that learning and performance are best fostered when students engage in practice that (a) focuses on a specific goal or criterion for performance (again, learning objectives/outcomes), (b) targets an appropriate level of challenge relative to students' current performance, and (c) is of sufficient quantity and frequency to meet the performance criteria. Specifically, research shows that the amount of time someone spends in *deliberate practice* is what predicts continued learning in a given field, rather than time spent in more generic practice (Ericsson, Krampe, & Tescher-Romer, 1993). One of the key features of deliberate practice is that it involves working toward specific goals (aka learning objectives/ outcomes).

To develop a reasonable set of topics, Davis (1993) recommends creating a list of all the content areas you *could* cover that are relevant to the subject of the course, and then "severely" paring down the topics you have listed, distinguishing what you consider absolutely essential from the rest. Build your course around these essential topics, choosing materials (books, articles, films, speakers, etc.) that will speak to these topics and help you accomplish your learning goals.

There are many – often equally effective -- ways to organize a course to accomplish a particular set of objectives. For example, a course could be arranged in any one of the following ways: chronologically, from concrete to abstract (or vice versa), from theory to application (or vice versa), around a set of questions, around a set of practical problems or case studies, according to disciplinary classifications and categories, etc. In general, courses should build towards greater complexity, starting with component pieces and working towards synthesis and integration. As Fink (2003) puts it: "The goal is to sequence the topics so that they build on one another in a way that allows students to integrate each new idea, topic, or theme with the preceding ones as the course proceeds" (p. 128). Another way to think about it is that the course should tell a story and thus have a beginning (that introduces the key issues, tensions, and players), a middle (that develops and explores these issues), and an end (in which the various threads come together or relevant new questions are introduced). However you choose to organize the course, the goal should be to create a structure that supports the learning objectives.

ASSESSMENTS

Assessments should provide the instructors and the students with evidence of how well the students have learned what we intend them to learn. What we want students to learn and be able to do should guide the choice and design of the assessment. There are many different types of activities that can be used to assess students' proficiency on a given learning objective, and the same activity can be used to assess different objectives. To ensure more accurate assessment of student proficiencies, it is recommended to use different kinds of activities so that students have multiple ways to practice and demonstrate their knowledge and skills.

When deciding on what kind of assessment activities to use, it is helpful to keep in mind the following questions:

- What will the student's work on the activity (multiple choice answers, essays, project, presentation, etc) tell about their level of competence on the targeted learning objectives?
- How will assessment of their work help guide students' practice and improve the quality of their work?
- How will the assessment outcomes for the class guide teaching practice?

The table presents examples of the kinds of activities that can be used to assess different types of learning objectives, and the ways that we can analyze or measure performance to produce useful feedback for

teaching and learning. The categorization of learning objectives is taken from the revised Bloom's Taxonomy.

Type of Learning Objective	Examples of Types of Assessment	How to Measure

Remember
Students will be able to:
• recall
• recognize
	• Objective Test items that require students to recall or recognize information:
	  ○ Fill-in the Blank
	  ○ Multiple Choice items with question stems such as, "what is a…", or "which of the following is the definition of)
	  ○ Labeling diagrams
	• Reciting (orally, musically, or in writing)
		• Accuracy – correct vs number of errors
		• Item Analysis (at the class level, are there items that had higher error rates? Did some items result in the same errors?)

Understand Students will be able to: • interpret • exemplify • classify • summarize • infer • compare • explain	Papers, oral/written exam questions, problems, class discussions, concept maps, homework assignments that require (oral or written): • Summarizing readings, films, speeches, etc. • Comparing and/or contrasting two or more theories, events, processes, etc. • Classifying or categorizing cases, elements, events, etc., using established criteria • Paraphrasing documents or speeches • Finding or identifying examples or illustrations of a concept, principle	• Scoring or performance rubrics that identify critical components of the work and discriminates between differing levels of proficiency in addressing the components
Apply Students will be able to: • execute • implement	Activities that require students to use procedures to solve or complete familiar or unfamiliar tasks; may also require students to determine which procedure(s) are most appropriate for a given task. Activities include: Problem sets, performances, labs, Prototyping, Simulations	• Accuracy scores, Check lists, Rubrics, Primary Trait Analysis
Analyze Students will be able to: • differentiate • organize • attribute	Activities that require students to discriminate or select relevant from irrelevant parts, determine how elements function together, or determine bias, values or underlying intent in presented materials. These might include: Case studies, Critiques, Labs, Papers, Projects, Debates, Concept Maps,	• Rubrics, scored by instructor, juries, external clients, employers, internship supervisor, etc. • Primary Trait Analysis
Evaluate Students will be able to: • check • critique	A range of activities that require students to test, monitor, judge or critique readings, performances, or products against established criteria or standards. These activities might include: Journals, Diaries, Critiques, Problem Sets, Product Reviews, Case Studies.	• Rubrics, scored by instructor, juries, external clients, employers, internship supervisor, etc. • Primary Trait Analysis

Create Students will be able to: • generate • plan • produce	Research projects, musical compositions, performances, essays, business plans, website designs, prototyping, set designs	• Rubrics, scored by instructor, juries, external clients, employers, internship supervisor, etc. • Primary Trait Analysis

INSTRUCTIONAL STRATEGIES

As instructors, we want our students to become independent, self-directing learners. However, getting there is a developmental process, beginning with the acquisition of basic content knowledge and disciplinary skills, and evolving to encompass greater creativity, risk-taking, and autonomy. Because what novices need to learn is not necessarily what advanced students need, it is critical to set course objectives that provide the appropriate balance of guidance and autonomy for students' level of sophistication. Research on learning supports the conclusion that novice to intermediate learners benefit from direct, strong instructional guidance, while advanced learners may benefit from more autonomy and opportunities for exploration (Kyllonen and Lajoie, 2003; Cronbach and Snow, 1977; Klahr & Nigam, 2004). Indeed, one meta-analysis showed that novice students who were given tasks with insufficient guidance and instruction showed not only lack of learning gains but actual learning losses (Clark, 1990). On the other hand, studies also suggest that providing too much direct instruction to advanced students can interfere with learning by creating split-attention and redundancy effects (Kalyuga, Ayres, Chandler,& Sweller, 2003). These studies indicate that student level matters profoundly when determining appropriate instruction. For example, what might constitute "spoon-feeding" to an advanced student may be a necessary and systematic building of skills to a relative novice.

Fink distinguishes overall teaching strategies from particular instructional strategies or techniques. A teaching strategy involves combining and sequencing a number of different instructional activities to help students accomplish the learning goals of the class. To determine an effective teaching strategy, think about what you want students to be able to *do* when they leave the course (e.g., apply certain formulas? create an interactive animation? debate the merits of particular policies? create a stage design that reflects a critical reading of an historical play?).

Having identified the broad learning objectives, work backwards, asking yourself: What particular skills and knowledge will students need in order to accomplish these objectives? Then address the following questions:

- What kinds of activities will students need to engage in to acquire the necessary skills and knowledge?
- How can you organize these activities to provide sufficient practice?
- How can you sequence them so that skills build upon one another?

For example, if one of your course objectives is for students to be able to identify the key theoretical positions in a topic area, discuss them critically, and apply them to particular issues, the teaching strategy might combine lecture (to introduce the theories and their proponents), discussion (to critique the theories and discuss their applications), and a writing assignment (to apply them to a specific problem or topic.) If one of the course objectives is for students to compare different approaches to theatrical costume design, then a teaching strategy might combine mini-lectures to identify key issues in costume design, student observations of different theatrical productions, group discussion, and an individual written assessment. Many instructional strategies are flexible, and can be used in service of several learning objectives, but

some of them are better suited for a particular set of objectives. In most cases, we will need to use a combination of instructional strategies.

As experts, instructors tend to access and apply knowledge automatically and unconsciously (e.g., make connections, draw on relevant bodies of knowledge, and choose appropriate strategies) and so we often skip or combine critical steps when we teach. Students, on the other hand, don't yet have sufficient background and experience to make these leaps and can become confused, draw incorrect conclusions, or fail to develop important skills. They need instructors to break tasks into component steps, explain connections explicitly, and model processes in detail. Though it is difficult for experts to do this, we need to identify and explicitly communicate to students the knowledge and skills we take for granted, so that students can see expert thinking in action and practice applying it themselves. Even though students are ultimately responsible for their own learning, the roles we assume as instructors are critical in guiding students' thinking and behavior. We can take on a variety of roles in our teaching (e.g., synthesizer, moderator, challenger, commentator). These roles should be chosen in service of the learning objectives and in support of the instructional activities. For example, if the objective is for students to be able to analyze arguments from a case or written text, the most productive instructor role might be to frame, guide and moderate a discussion. If the objective is to help students learn to defend their positions or creative choices as they present their work, our role might be to challenge them to explain their decisions and consider alternative perspectives. Such roles may be constant or variable across the semester depending on the learning objectives.

Instructional Strategy	
Lectures	Transmit information which supplements or enhances reading; promote understanding via explanations; respond to student misconceptions or difficulties; create or engage interest in a new area; motivate reading or other assignments
Discussions	Practice thinking and communicating in the subject/discipline; evaluate positions, arguments, or designs; defend own position; identify problems, conflicts and inconsistencies; get feedback from/about students; draw on students' expertise and prior knowledge
Case studies	Actively involve students in learning; apply disciplinary methods of analysis; practice problem solving; practice high-level cognitive skills (i.e., application, analysis, synthesis, evaluation); think critically; blend cognitive and affective dimensions (if the case has ethical or controversial dimensions); develop collaborative skills; relate knowledge to real world; formulate arguments and counterarguments
Writing	Develop systematic relationships among ideas; application, analysis, synthesis and evaluation; reflect on own thinking; record the evolution of own thinking; practice disciplinary conventions (e.g., APA style); practice responding to feedback and revising
Labs/Studios	Develop disciplinary and process skills; obtain immediate feedback and respond to it; develop metacognitive skills (e.g., awareness of own strategies); evaluate results or product of own work; approximate real life situations

Group Projects	Compare and contrast perspectives; practice high-level cognitive skills (i.e., application, analysis, synthesis, evaluation); develop meta-skills such as leadership, communication, conflict resolution; strategize and plan how to tackle complex problems and distribute work
Recitations	Practice problem solving; review material; check student understanding; identify and correct misconceptions; individualize instruction; answer questions
Public Reviews	Evaluation; practice giving constructive feedback; self-reflection; defend vision for own work
Service-Learning	Sometimes called community-based instruction, service-learning places equal emphasis on the service component of the experience and the learning outcomes for the student
Independent Student Projects	Explore areas of interest in depth; conceive of, plan, and execute a research or creative project from beginning to end; work independently; seek mentorship from an expert in the field.

References for Appendix C: Course Design Resources

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