Undergraduate/Graduate Course Approval Guidelines

The Office of the University Registrar Academic Governance Staff has prepared this reference to assist faculty in preparing proposal packages for new and revised courses. Our goal is to move proposals as quickly as possible through the approval process while adhering to applicable University policies and standards.

Table of Contents

Overview of Approval Process for New/Revised Course Proposals ................................................................. 2
  Course Revisions NOT Requiring Academic Governance Approval .......................................................... 2
  Course Revisions Requiring Academic Governance Approval ............................................................. 2
  Course Approval Process .......................................................................................................................... 2

Makeup of a Complete Course Proposal Package ............................................................................................ 4

Guidelines for Preparing Course Proposals ..................................................................................................... 4
  Preparing “Coversheet – Proposal for New and Revised Courses” .......................................................... 6
  Proposal ..................................................................................................................................................... 7
  Catalog Description ................................................................................................................................. 10
  Learning Objectives ............................................................................................................................... 12
  Justification .............................................................................................................................................. 13
  Prerequisites and Corequisites ................................................................................................................ 15
  Texts and Special Teaching Aids ........................................................................................................... 16
  Topic Syllabus ....................................................................................................................................... 17
  Old (current) Topic Syllabus (in the case of a revised course) ................................................................. 18
  Example Content for Cross-List Letter ..................................................................................................... 19

FAQs and Helpful Hints ............................................................................................................................... 20
  Frequently Encountered Problems with Proposals ............................................................................... 21
  Helpful Hints ......................................................................................................................................... 23
I. Overview of Approval Process for New/Revised Course Proposals

A. Course Revisions NOT Requiring Academic Governance Approval

- Course prerequisite change (Form) *(Requires a letter of support to use courses from other departments/schools).*
- Request to drop course from Catalog (Form).
- Minor course revisions < 20% *(Requires course proposal with revisions incorporated and supporting documentation).*
- Request to cross-list course with an existing academic governance approved course.
- Request to end cross-listed course status.

B. Course Revisions Requiring Academic Governance Approval

- New course
- Course designator change
- Change in grade mode.
- Course number change:
  - A change in course number for a previously approved course is considered a “new” course (i.e., changing from 3000-level to 2000-level).
- Course title change
- Credit hour change/change in breakdown of instructional credit hours and instructional contact minutes.
- Course content revisions > 20%:
  - When assessing whether a change is < 20%, consider the impact to overall course (i.e., small change to the Catalog Description may also require a revision to the Learning Objectives and/or Topic Syllabus).
- New or revised course for inclusion in Pathways General Education.
- Request to create conjoined courses (4000-5000G):
  - The undergraduate proposal must be approved before the graduate proposal can be reviewed.
- Request to separate currently approved conjoined courses (4000-5000G).

C. Course Approval Process

1. Administrative Review (< 20% Revision)

- After the course is approved by the respective College’s Curriculum Committee (CCC), the proposal package is uploaded into JIRA as a < 20% course revision.
- The proposal package is screened by the Office of the University Registrar Academic Governance staff and Pathways General Education staff, as applicable, to ensure the revision qualifies as < 20% revision and is then processed in Banner.
If deemed > 20% a notification is sent to the College Curriculum Coordinator (designated curriculum contact) and then course is routed to begin 15-Day Review for review through academic governance.

2. Academic Governance Process (> 20% Revision)

- After the course proposal (new, > 20% revised, or discontinued) is approved by the respective CCC, the proposal package is uploaded into JIRA by the College Curriculum Coordinator and is available for 15-Day Review. 15-Day Review is the review period in which the University community can access CCC approved proposals. It begins on the first day of the second week of classes in Fall and Spring terms and only occurs when classes are in session (not during exams, holidays, etc.).

- During 15-Day Review, concerns, suggestions, and comments on the proposal may be directed to the initiating college by the University faculty, staff, and/or Office of the University Registrar Academic Governance staff and Pathways General Education staff, as applicable, to address comments, recommendations, and/or compliance with University standards and policies.

- Responses to concerns, suggestions, and/or comments to the proposal during the 15-Day Review period should be uploaded into JIRA in the form of a comment on the CM, an email, letter, or memo and directed to the initiating College Curriculum Coordinator and the Office of the University Registrar Academic Governance Staff (AcadGov@vt.edu).

- Any major concern or objection should be resolved by the involved academic units before the proposal may move forward to the Undergraduate Curriculum Committee (UCC), Pathways General Education Curriculum Review Committee (PGECRC), or Graduate Curriculum Committee (GCC), as applicable. If major concern or objection cannot be resolved, representatives from each academic unit working to resolve the concerns will be invited to attend the committee meeting when the proposal is on the agenda. Each academic unit representative will be given the opportunity to present their college/department/school position to the committee. Following this discussion, a majority vote for or against by the committee members will approve or decline approval of the proposal.

- It is assumed that "no response" from the University community during the 15-Day Review period represents consent.

- After completion of the 15-Day Review recommendations, the proposal is forwarded to the UCC or PGECRC for undergraduate items, or GCC for graduate items.

- Following approval by UCC, PGECRC, or GCC, final approval is granted by either the Commission on Undergraduate Studies and Policies (CUSP) or the Commission on Graduate and Professional Studies and Policies (CGPSP) via approval of the Committee report for certain actions. Other actions (e.g., new or discontinued degree or major, new department/school) require a Resolution through CUSP/CGPSP to University Council and to the President. Additionally, some actions also require a parallel path of approval or notification to SCHEV.

- For academic governance related questions or to check the status of a course proposal moving through the academic governance process, please contact Office of the University Registrar Academic Governance Staff at AcadGov@vt.edu, 231-1179 or 231-7985.

- The typical approval timeline for a course proposal is approximately three months during the academic year.

- Overview of 15-Day Review, University Academic Governance review, and Graduate Curriculum Committee review of Virginia Tech Carilion School of Medicine Course proposals:
  
  - Unlike other Colleges/Departments/Schools at the University where the course proposal and course syllabus are two distinct documents, course proposals submitted by the Medical School have a combined function allowing them to be used by the faculty teaching the course and to be
provided as the course syllabus to the students.

- In this context and having considered the Medical School faculty’s input stressing that the learning objectives are written in support for the learning outcomes that will be included in the course syllabus and provided to the students, that these learning objectives provide clear expectation for student learning outcomes based upon the syllabus topics covered by the course, and that learning objectives present measurable outcomes as determined and in alignment with Bloom’s Taxonomy and with learning outcomes common to other medical school courses; review of Medical School proposals through the university academic governance process will focus on the Topic Syllabus and Catalog Descriptions (using full concise sentences in alignment with other Medical School Catalog Descriptions) in support for better overall proposal alignment in preparation for GCC review and approval.

II. Makeup of a Complete Course Proposal Package

Each course proposal package must include the following items:

1. Completed, signed, and dated “Coversheet – Proposal for New and Revised Courses” (Form)
2. Course proposal
3. Letter(s) of support, as applicable:
   - Statement from Dean, Department Head/School Director or Designee presenting whether the offering or continued offering of the course will require or generate the need for additional department/school and/or University resources (e.g., faculty, library, space, and/or technical support) (Required for all course proposals).
   - Letter(s)/e-mail(s) of support to use another department’s course(s) as a prerequisite or corequisite requirement.
   - Letter of agreement to cross-list course with another department’s course.

Note: Each version of the course proposal package uploaded into JIRA should be viewed as a stand-alone document and include each of the required proposal package items.

III. Guidelines for Preparing Course Proposals

A. Helpful Hints for Preparing Course Proposals:

- Example: Undergraduate Course Proposal
- Example: Graduate Course Proposal

- Not all faculty and staff reviewing course proposals will be familiar with the course content or discipline. To assist in the review process, write all proposal sections so that both primary readers (subject matter experts) and secondary readers (people outside the discipline) will be able to understand what is being taught in the course (e.g., avoid using discipline jargon, define acronyms).

- One of the key areas that the Curriculum Committees consider in the review of a course proposal is the continuity/alignment between the Catalog Description (content), Learning Objectives (outcomes), and Topic Syllabus (topics) sections of the course proposal:
  - Is there a notable alignment between the content in the Catalog Description to the outcomes/topics outlined in the Learning Objectives and Topic Syllabus?
  - Do the Learning Objectives reflect measurable outcomes to assess the student’s
proficiency in these content/topic areas?

- Have key/connecting words and concepts been used throughout the proposal to show alignment between the Catalog Description (content), Learning Objectives (outcomes), and Topic Syllabus (topics)?

- **Conjoint Courses:** Pairs of 4000- and 5000-level courses that offer the same content to undergraduate and graduate students, respectively. When a conjoint course is scheduled (face-to-face or virtually), a section of each course will be scheduled in the same classroom or virtually, at the same time, and taught by the same faculty. The undergraduate proposal must be approved by the UCC before the graduate proposal can be reviewed by the GCC.

- Advantages/Disadvantages of Conjoint versus Standalone courses:
  - Conjoint courses
    - **Advantage** for establishing a conjoint course if the 4000-level course is already approved through governance, the process to approve the 5000G course is minimal (i.e., just adding one or two graduate learning objectives, and explanation in justification section outlining additional work completed by graduate students).
    - **Disadvantage** is that the 4000-level course must be approved through UCC, prior to the 5000G level course review/approval by GCC. Further, whenever scheduled, a section of the 4000 and 5000G courses must always be scheduled together, in the same classroom (online), and taught by the same faculty.
  - Standalone courses
    - **Advantage** for establishing a 4000-level and 5000-level course having similar content approved through governance is that sections of each course may be taught together or separately. Further, courses may move through university academic governance in parallel, the 5000-level does not need to wait for the 4000-level course to be approved.
    - **Disadvantage** is that course proposals for both 4000-level and 5000-level courses require approval through governance. Although content may be similar, the content in all the sections of the 5000-level course will be subject to review/approval during the academic governance process.

- **Cross-Listed Courses:** Courses that are cross-listed between two or more departments/schools. When a cross-listed course is scheduled (face-to-face or virtually), a section of each course will be scheduled and taught in the same classroom or virtually, at the same time, and taught by the same faculty. A single course proposal package is submitted for cross-listed courses.

- Course Proposal should include:
  - Catalog Description
  - Learning Objectives
  - Justification
  - Prerequisites and Corequisites
  - Texts and Special Teaching Aids
  - Topic Syllabus
  - Old (current) Topic Syllabus (if a revised course)
B. Preparing “Coversheet – Proposal for New and Revised Courses”

**General Information**
Proposal Date: The date the proposal was written.
Department/School
Course Designator and Number
Title of Course (75-character limit)

**Credit Hours**
- Reference “Instructional Credit Hour and Instructional Contact Minutes” requirements.
  Course Transcript Title (ADP) *(Automated Data Processing)*

Department/School Contact:
- Who will be contacted regarding needed revisions and statuses:
  - Contact Phone
  - Contact E-Mail

**Scorecard Metrics** (for undergraduate courses only)
- Study Abroad
- Service Learning
- Experiential
- Undergraduate Research

**Note:** The justification for all selected Scorecard Metric areas must be included in the Justification section of the course proposal.

**First Year Experience**
- Include letter of approval from Director of First Year Experiences stating that course is in compliance with FYE requirements.
Check ONLY ONE of the following boxes:

New Course
  - A change in course number for a previously approved course is considered a “New” course.

Revised Course*
  - Select whether course is proposed as “Revision > 20%” or “Revision < 20%.

For Pathways courses, complete proposal documentation found at Pathways General Education website [https://www.pathways.prov.vt.edu/proposal-forms.html](https://www.pathways.prov.vt.edu/proposal-forms.html).

*If proposal is a course revision, include a summary of course revisions in the Justification section of course proposal.

A. Attach statement from Dean or Department/School Representative: Letters of Support

B. Attach appropriate letters of support from affected departments/schools and/or Colleges: Letters of Support

C. Effective Semester:

D. Change in Course Title (From: To:)

E. Change in Transcript Title (ADP) (From: To:)

F. Change in Credit Hours (From: To:)
  - Reference “Instructional Credit Hour and Instructional Contact Minutes” requirements at [https://registrar.vt.edu/faculty-toolbox/instructional-minutes.html](https://registrar.vt.edu/faculty-toolbox/instructional-minutes.html).

G. Change in Lecture and/or Lab Hours (From: To:)
  - Reference “Instructional Credit Hour and Instructional Contact Minutes” requirements at [https://registrar.vt.edu/faculty-toolbox/instructional-minutes.html](https://registrar.vt.edu/faculty-toolbox/instructional-minutes.html).

H. Course Number(s) and Title(s) to be deleted from the Catalog with APPROVAL:

  Note: If course will not be discontinued until a later time, please do not list the information here and submit a “Request to Drop Course from the Catalog” form, located on the Office of the University Registrar website.

Approval Signatures

  - All signatures are required for initial submission:
    - If Coversheet needs to be revised during the academic governance review process, add a revised Coversheet to proposal package, placing on top of original Coversheet, and stating “See attached Coversheet for signatures” in “Approval Signature” section of the revised Coversheet.

C. Proposal

1. Title of Course
   - 75-character space max, mixed case, printed in the University Catalog.
   - Conjoint Courses: The graduate course title must match the undergraduate course title, except that it must begin with “Advanced.” For example, Biomaterials (undergraduate) and Advanced Biomaterials (graduate).
2. Course Transcript Title (ADP Title-Automated Data Processing)

- **30-character** space max, mixed case, printed on student academic transcript and Timetable.

- When possible, ADP title should be the same as course title or a condensed version of the course title when over 30 characters.

- Use as many of the 30 spaces as is practical and arrange abbreviations to maximize information about course content.

- **Topics Course:** If a course may be repeated with different content for credit, please consider adding “Topics” to the course title. This would have the advantage of allowing different subject topics to be presented on the student transcript. If this direction is taken, begin the course title and ADP title with the word “Topics” on the Coversheet and Catalog Description (e.g., title: Topics in Global Public Policies, ADP: Topics Global Public Policies).

- **Cross-Listed Courses:** List department/school (subject) designator and course number for all cross-listed courses, formatted with the Home department/school listed first and cross-listed departments/schools thereafter in parentheses, i.e., WGS 2264 (AFST 2264) (SOC 2264).

3. Course Number

- Adhere to the University Course Number Policy (see Policy 6900).

- A discontinued course number may not be reused until five years has elapsed.

- Stand-alone courses must end with the digit “4.”

- **Sequenced Course:** The course numbers for multi-semester courses are separated by hyphens if courses must be taken in semester sequence (i.e., XXX5 – XXX6). Do not append I and II to the course title.

- **Connected Course:** The course number for multi-semester courses are separated by a comma, if courses are not required to be taken in sequence (i.e., XXX5, XXX6).

- **Series Courses:** Continuing course content using two separate courses (e.g., ABCD 1234 and ABCD 1244). Different course titles (e.g., HIST 1234 History of Window Glass 1600 – 1900, and HIST 1244 History of Window Glass 1900 – Present), or as often used, the same title with a roman numeral (e.g., HIST 1234 History of Window Glass I and HIST 1244 History of Window Glass II.

- **Cross-Listed Courses:** If possible, it is preferred that course numbers have the same digits. The first and fourth digits must be the same.

- **Conjoint Courses:** The graduate course number ends with G. It is preferred that the undergraduate and graduate courses have the same digits except for the 4 or 5 as the first digit (i.e., 4024 and 5024G). If the parallel graduate course number is already in use, please consult with Office of the University Registrar Academic Governance Staff.
4. Credit Hours

To determine contact to credit hour for a course based on the given instructional delivery, reference the requirements of the Instructional Credit Hour and Instructional Contact Minutes and/or the Instructional Credit Hour and Instructional Contact Minutes Calculator found at [https://registrar.vt.edu/governance.html](https://registrar.vt.edu/governance.html). For quick reference:

- Lecture - 1 contact hour = 1 credit hour
- Lab - 3 contact hours = 1 credit hour
- Design Lab/Studio - 1.5 contact hours = 1 credit hour
- Recitation – 1 contact hour = 1 credit hour

**Example 1:** 3 credit hour course with 1 credit hour lab – state, “(2H, 3L, 3C)” at end of Catalog Description.

<table>
<thead>
<tr>
<th>Lecture Contact to Credit Hour Calculation</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td><strong>Input Proposed Course Lecture Credit Hour(s)</strong></td>
<td>1</td>
<td>contact hour</td>
<td>=</td>
</tr>
<tr>
<td>2</td>
<td>credit hour(s)</td>
<td>X</td>
<td>1</td>
<td>contacthour/credit hour</td>
</tr>
<tr>
<td>100</td>
<td>minutes/week</td>
<td>x</td>
<td>15</td>
<td>weeks/term</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lab Credit Contact to Credit Hour Calculation</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Input Course Proposed Lab Credit Hour(s)</strong></td>
<td>3</td>
<td>contact hour</td>
<td>=</td>
</tr>
<tr>
<td>1</td>
<td>credit hour(s)</td>
<td>X</td>
<td>3</td>
<td>contacthour/credit hour</td>
</tr>
<tr>
<td>150</td>
<td>minutes/week</td>
<td>x</td>
<td>15</td>
<td>weeks/term</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resulting Course Total Credit Hour Breakdown (H, L, C) for Lecture with Lab or Lab only (i.e., Lecture 0 credit hours)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>H(Lecture)</td>
<td>3</td>
<td>(L) Lab</td>
<td>3</td>
</tr>
<tr>
<td>100</td>
<td>minutes/week</td>
<td>150</td>
<td>minutes/week</td>
<td>250</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resulting Course Weekly Meeting Time for Proposed Lecture with Lab or Lab only (i.e., Lecture 0 credit hours)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>aggregated minutes/term</td>
<td>2250</td>
<td>aggregated minutes/term</td>
<td>3750</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proposed Course Total Credit Hours</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proposed Course Total Meeting Time per Week</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Example 2: 3 credit hour course with 1 credit hour design lab/studio – state, “Design Lab/Studio (2H, 2L, 3C)” at end of Catalog Description.

D. Catalog Description

Brief description of the course content as it will appear in the Catalog. Description should align with Learning Objectives (outcomes) and Topic Syllabus (topics). Include contact to credit hour structure (i.e., 2H, 3L, 3C). Unless “P/F only” is indicated, course will be set up as all grade modes (A-F as the default).

Helpful Hints for the Catalog Description:

- To promote consistency in the University catalogs, please use short concise sentences or phrases (declarative statements). In most cases, phrases can be accomplished using statements without verbs and/or removing introductory and transitional words.
- Use key words/concepts to promote continuity/alignment between the Catalog Description (content), Learning Objectives (outcomes), and Topic Syllabus (topics).
- **Repeatability:** If course may be repeated, include statement “May be repeated _____ times with different content for a maximum of ______ credit hours.”
  - Example for a 3-credit course: “May be repeated 2 times with different content for a maximum of 9 credit hours.”
• If there is content duplication between proposed course and another currently approved course and students may not receive credit for completing both, include statement “Duplicates…” or “Course credit will not be awarded for both and” or words to this effect. Do not state “partial duplication.”

• **Sequenced Courses:** (i.e., XXX5 – XXX6 or XXX5, XXX6) Include content taught in both courses. Begin with statement providing overview, followed by XXX5: content taught in this course; XXX6: content taught in this course. Pre: for XXX5. Pre: XXX5for XXX6. (3H, 3C).
  
  o Example for a 1115, 1116 sequence:

  “Examines the history of the United States through intersections of politics, economics, sciences, the arts, and significant social movements. Considers how the modern United States has emerged through the interactions of diverse ethnic, racial, national, class, and religious groups. 1115: pre-Columbian societies through Civil War; 1116: Reconstruction through present. (3H, 3C)”
  
  o Example for a 1015-1016 sequence:

  “Introduction to oral and written communication. 1015: Focus on oral and written communication in interpersonal, small group, and public contexts, including intercultural communication. Special emphasis on the writing process, audience, listening, conflict resolution, critical analysis, and communication in digital and visual media. 1016: Continued study in oral and written communication skills for small group and public contexts. Focus on practical applications in ethical research and information gathering, audience analysis and adaptation, message development, and oral, written, and visual presentations by individuals and groups. May not receive credit for both 1016 and 2004. Pre: 1015 for 1016. (3H, 3C)”

  o Distinguishing between sequenced and series courses:

  As illustrated above, if the course is a “sequenced” course (e.g., ABCD 1235-1236 (must be taken in order, 1st is usually a pre-requisite for 2nd course in sequence) or ABCD 1235, 1236 (may be taken in either order)), both courses in the sequence would have the same title (e.g., HIST 1235-1236 History of Window Glass). In this context, one proposal will be used. Both courses in the sequence will have the same instructional contact to credit hour structure.

  If the courses are a “series” course using two separate courses (e.g., ABCD 1234 and ABCD 1244), then the course titles will be different (e.g., HIST 1234 History of Window Glass 1600 – 1900, and HIST 1244 History of Window Glass 1900 – Present), or what is often used, the same title with a roman numeral (e.g., HIST 1234 History of Window Glass I and HIST 1244 History of Window Glass II). If this method is employed, the instructional contact to credit hour structure does not have to be the same for both courses. If this option is used, a separate course proposal would be needed for each course.

• **Conjoint Courses:** Catalog Description must be identical for both courses, except the graduate course will include “Pre: Graduate standing.” Both courses should meet for the same number of contact hours and carry the same number of credits.

  o Please reference Section titled “Conjoint Courses” on Page 5 for more detailed information.
E. Learning Objectives

Include following statement and number learning objectives…

Having successfully completed this course, the student will be able to:

1. Learning Objective 1
2. Learning Objective 2
3. Learning Objective 3

Helpful Hints for the Learning Objectives:

- Begin with “Having successfully completed this course, the student will be able to:” or words to this effect.
- What new capabilities, skills, and levels of awareness will students derive from this course?
- The objectives must be measurable (see Attachment A).
- To aid in the committee review process, please number the objectives rather than using bullets.
- Ensure the use of punctuation at the end of the objectives is consistent for all objectives.
- Use key words/concepts/phrases to promote continuity/alignment between the Catalog Description, Learning Objectives, and Topic Syllabus.
- **Sequenced Courses:** (i.e., XXX5 – XXX6 or XXX5, XXX6) structure the Learning Objectives using:
  - Header “XXX5” to present Learning Objectives that align with presentation of content taught in Catalog Description and Topic Syllabus for the XXX5 course.
  - Header “XXX6” present Learning Objectives that align with presentation of content taught in Catalog Description and Topic Syllabus for this XXX6 course.
- **Topics Courses:** Write Learning Objectives broad enough that they support the two to three sample Syllabus topics provided in the course proposal.
- **Conjoint Courses:** Learning Objectives must be identical for both courses, except the graduate course must include one or two additional objectives to address the advanced learning outcomes expected at the graduate level.
- Do not list assignments, but state measurable learning outcomes students are expected to gain from that assignment.
- Although not all inclusive, **Attachment A** provides a list of **action verbs** to use in formulating Learning Objectives:
  - When appropriate, consider using higher graduate academic-level outcomes when writing upper-level undergraduate and graduate course Learning Objectives. Lower academic-level verbs are marked with *.

**Note:**

If applicable to course content, lower-level verbs may be used provided that the majority of the verbs are appropriate for that academic level.
Consideration may be given to action verbs not found on list, but common to discipline. Explanation may be requested to justify during committee review,

- While one action verb per learning objective is preferred, additional action verbs may be used if the verbs are closely aligned, and the learning objective outcome can still be assessed.

Examples:

A) Instead of:
   1. Conduct a review of the literature.
   2. Review journal articles.

   Consider:
   1. Analyze the use of theory in scholarly journal articles.
   2. Evaluate the research designs and analytic methods used in recent publications.
   3. Assess the scientific merits and weaknesses of research published in scholarly journals.

B) Instead of:
   1. Apply analytical methods and communicate results in both written and oral presentation formats.
   2. Write a grant proposal.

   Consider:
   1. Apply analytical methods of to _____ in order to justify conclusions about…
   2. Critique the literature on and develop the rationale for new research.

F. Justification

Address each of the following items, as applicable, to the specific course proposal, in separate paragraphs (headers for the paragraphs are not necessary):

- **Need?** Paragraph to justify why the course is needed. Specify the reason why the proposed course should be taught at VT *(required for all course proposals)*.
  - Include arguments establishing the educational significance/uniqueness of the proposed course with respect to a curriculum or program of study.
  - How course offering will benefit/support students in the pursuit of area of study.
  - Avoid arguments related to staff competence, pressure, and critiques from external entities or student dissatisfaction with existing course(s) as justification for course.

  *Note:* Simply stating that course is not currently taught at VT does not provide an adequate justification. Please include reasoning/explanation for why course is needed.

- **Revision?** If proposal is a revised version of an existing course, include paragraph outlining specific changes made to course (i.e., changes in credit hours, title change, course number change, inclusion in Pathways General Education).

- **Scorecard Metric?** If proposal requests a Scorecard Metric area *(undergraduate courses only)* (i.e., Study Abroad, Service Learning, Experiential,
**Undergraduate Research**, include paragraph of support. Justification should address metric area requirement as outlined by the “Scorecard Metrics Definitions” found at [https://www.registrar.vt.edu/faculty-staff/scorecard-metrics.html](https://www.registrar.vt.edu/faculty-staff/scorecard-metrics.html)

- **Academic Level**: Paragraph to justify and explain why this course is taught at the requested academic level *(required for all course proposals)*.
  
  o Begin paragraph with statement, “Course is taught at the X000-level because…”
  
  o As applicable, frame level justification for course based on the value and/or contribution the placement of the course at the X000-level offers a student toward the successful completion of the course and/or academic program, giving consideration to the following:
    
    - Skills/concepts acquired by students through courses completed during previous academic level(s) that support student success in the course. For example:
      
      - Program courses taken at 1000, 2000, and/or 3000-level for a 4000-level course…
        
        “…use of laboratory equipment, familiarity with circuit design and analysis techniques learned during sophomore year…”
      
      “…requires integration of knowledge learned in required courses normally taken during sophomore or junior years…”
    
    - Program courses taken at UG level for a 5000-level course…
      
      “…builds upon undergraduate skills and knowledge in an applied, professional format while introducing advanced theoretical content…”
    
    - Skills/concepts acquired by students through the completion of the course prerequisite(s) that support student success in the course. For example:
      
      - Content taught in UG prerequisite for an UG course…
        
        “…background in cell regulatory process, protein function, and other biological principles taught in prerequisites enabling student to think in language of chemical structure and reactivity…”
      
      - Content taught in 5000-level prerequisite for a 5000 graduate level course…
        
        “…graduate students who have the knowledge of regression models, statistical inference, and linear models theory acquired through course prerequisites…”
        
        “…builds upon structure and functions of neurons and glial cells, molecular signaling, and the cellular and molecular basis of nervous system diseases taught in course prerequisites…”
    
    - Expectations based upon student ability to comprehend, assimilate, discuss, and/or apply course material appropriate for requested course academic level. For example:
      
      - Academic rigor of course (e.g., introductory, intermediate, or advanced content/material; course workload);
      
      - Tasks (e.g., concept memorization/application, communication skills, problem solving, data interpretation and/or analysis, team projects, research); and/or
- Maturity (e.g., cognitive development, critical thinking skills, life/academic/work experiences, cumulative academic knowledge).

- Rationale presented by the department/school in support for timing of when a course is taken within particular curriculum structure or program of study. The level of difficulty of the subject matter is not the basis for this level justification, but rather the placement of the course in a particular curriculum structure or program of study as determined appropriate by the department/school.

  For Example: A 6000-level course may be used as the school feels appropriate in support for a program requirement. A 6000-level course does not necessarily imply that it is progressively harder than a 5000-level course or that it has a 5000-level prerequisite; rather, the 6000-level course content would be taken later in the program requirements.

- Noting that enrollment and advancement through Virginia Tech Carilion School of Medicine curriculum is based upon defined cohort of students moving through curriculum together, the level justification for each course will be similar.

**Helpful Hints for the Level Justification:**

- The intent of the above is to provide a variety of topical areas that may be used in support of the course level justification. Course level justification should be a concise/succinct statement using only those topical areas that apply.

- Consider the following questions, as applicable, when formulating the level justification:
  - What does the student need to bring to the course to succeed?
  - What does the student need to succeed while in the course?
  - What will the student take from the course and apply toward the successful completion of their area of study?

- **Conjoint Courses:** Although the justification must be parallel for both courses, the graduate proposal must also indicate the need for the course at the 5000-level of instruction. Begin paragraph with statement, “Course is taught at the 5000-level because…”

**G. Prerequisites and Corequisites**

List any required prerequisites and/or corequisites with titles, specifying any “and”/“or” combinations, noting that a comma signifies the “and” indicator. Department/school course designator is only used when prerequisite courses belong to another department/school. Example for a ME course:

“Pre: (3534 Controls Engineering I, ECE 3254 Industrial Electronics) or (ECE 2004 Electric Circuit Analysis, ECE 2704 Signals and Systems)”

**Helpful Hints for Prerequisites and Corequisites:**

- If a specific course (or courses) constitutes a prerequisite(s), consider including a description of material from the prerequisite course that is of significance for the success in this course in order to strengthen level justification in Section III: Justification.

- A prerequisite does not by itself, justify course level nor is a prerequisite necessary for a subsequent level.
When including a minimum grade requirement for a prerequisite course, data/information must be provided to clearly show the need for that minimum grade to be successful in the course. Minimum grade prerequisites are not to be used to limit enrollment in courses. This information should be listed in the “Prerequisite/Corequisite” section of the proposal.

Permission of instructor is implied and does not need to be listed.

Do not list prerequisites for prerequisites.

Conjoint Courses: Prerequisite for the graduate course must be “Pre: Graduate standing.”

Graduate Courses: Prerequisites are required in all graduate course proposals:
- The default prerequisite is “Pre: Graduate standing.”
- “Graduate standing” may be omitted only if a graduate course is a prerequisite.
- Courses numbered lower than 5000 are not permitted as prerequisites for graduate courses.

H. Texts and Special Teaching Aids

Use header to present whether text is “Required” and will need to be purchased by the student. If there is not a required text that students must purchase, state “Required: None” and provide justification as to why there is no required text and include examples of materials that will be used.

For texts that would be helpful to have, but students are not required to purchase, list under “Recommended” header.

If all reading materials will be provided through the course at no cost to the student, include those under header “Provided.”

Under each applicable header, apply consistent use of APA or MLA format to cite reference materials, order citations alphabetically, and include reference to applicable page numbers. For example:

APA - Author Last name, Initials. (Year of publication). Title of work. Publisher name. Pp.

MLA- Author Last name, First name. Title of work. Location: Publisher, Year of publication. Pp.

Include separate header/category for any additional course materials and teaching aids to be used. List in alphabetical order special materials such as supplementary texts, journal articles, periodicals, films, and courseware packets (with examples), websites, etc. Do not attempt to be exhaustive.

Helpful Hints for Texts and Special Teaching Aids:

- If a textbook, readings, or other materials are required, include one or more text or representative examples. If only journal articles are required or recommended, include several representative examples (an exhaustive list is not necessary). For texts where not all content will be used, list applicable chapters and/or pages from textbooks.

- Sequenced (Series or Connected) Courses: (i.e., XXX5 – XXX6 or XXX5, XXX6) structure Texts and Special Teaching Aids using:
  - Header “XXX5” followed by “Required” and/or “Recommended” to present listing of text and/or special teaching aids.
  - Header “XXX6” followed by “Required” and/or “Recommended” to present listing of text and/or special teaching aids.
• **Topics Courses:** Provide at least two example reading lists to illustrate the assigned “Texts and Special Teaching Aids” and/or learning materials for different topics.

• **Seminar Course:** Consider, as/if applicable, including example(s) of reading list to illustrate the assigned “Texts and Special Teaching Aids” and/or learning materials for different seminar topics.

• Conjoint course…G course text...should include same text as UG, but may include additional text/journals in support of additional LO(s).

## I. Topic Syllabus

The Topic Syllabus will be reviewed by many people not familiar with the subject matter, therefore, avoid jargon and define any acronyms. List topics or major units with percentage of course time for each topic under heading “Topic.” If a topic contains over 20%, a breakdown of sub-topics is to be listed. Percentage of all topics must total 100% and is to be placed under heading “Percent of Course.” For example:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Percent of Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic 1</td>
<td>30%</td>
</tr>
<tr>
<td>Subtopic 1</td>
<td></td>
</tr>
<tr>
<td>Subtopic 2</td>
<td></td>
</tr>
<tr>
<td>Topic 2</td>
<td>20%</td>
</tr>
<tr>
<td>Topic 3</td>
<td>20%</td>
</tr>
<tr>
<td>Topic 4</td>
<td>15%</td>
</tr>
<tr>
<td>Topic 5</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**Helpful Hints for the Topic Syllabus:**

- Use key words/concepts to promote continuity/alignment between the Catalog Description, Learning Objectives, and Topic Syllabus.
- Avoid beginning Syllabus topics with action verbs that makes topics read like Learning Objectives.
- Do not list Assignments, rather state skill/concept taught in support of the successful completion of assignment.
- **Sequenced (Series or Connected) Courses:** (i.e., XXX5 – XXX6 or XXX5, XXX6) structure Topic Syllabus using:
  - Header “XXX5” followed by topics.
  - Header “XXX6” followed by topics.
- **Topics Courses:** Provide at least two example Topic Syllabi to illustrate the content to be covered when the courses focus on different topics.
- **Conjoint Courses:** Topic Syllabus must be identical for both undergraduate and graduate courses.
J. Old (current) Topic Syllabus (in the case of a revised course)

The Topic Syllabus of the course(s) currently being taught must be included.

- If course proposal includes a change in course number (i.e., making it a new course), the course syllabus for the previous course may be included for clarity.

K. Letters of Support

Include all of the following letter(s) of support depending on the specific proposal:

- Statement from Dean, Department Head/School Director or Designee presenting whether the offering or continued offering of the course will require or generate the need for additional departmental and/or University resources (e.g., faculty, library, space, and/or technical support) *(required for all course proposals).*

- Include letter(s)/e-mail(s) of support to use another department’s course(s) as a prerequisite or corequisite requirement:
  - If a course revision, letter of support is only needed for a prerequisite/corequisite that has been added as a new requirement.

- **Cross-listed Courses:** Include cross-listing letter of support signed by all departments/schools detailing cross-list agreement that includes all of the following information (example on next page):
  - Identification of course Home department/school (first listed) and cross-list department/school(s).
  - Acknowledgment that when cross-listed course is scheduled (face-to-face or virtually) that a section of each course will be scheduled in the same classroom or virtually, at the same time, and taught by the same faculty.
  - Acknowledgment that if Home department/school course is inactivated that cross-listed course department/school(s) will submit a new course proposal through academic governance if they wish to continue teaching the course.

- Include letter of approval from Director of First Year Experiences stating that the course is in compliance with FYE requirements, if applicable (www.fye.vt.edu)
Example Content for Cross-List Letter

Date:

To: University Registrar
Cc: Gary Costello, Associate Registrar & Becki Smith, Governance Coordinator

Re: Cross-Listing of ABCD 1234 (EFGH 1234) (IJKL 1234)

The Department of ABCD would like to request the ABCD 1234 (EFGH 1234) (IJKL 1234), Course Title, course cross-listing effective [term year].

It is understood that when this cross-listed course is scheduled that a section of each course will be taught in the same classroom, at the same time, and by the same faculty.

It is also understood that if the ABCD 1234 (Home Department) course is inactivated that the EFGH and/or IJKL Department must submit a new course proposal through the academic governance system if they wish to continue teaching the course offering.

ABCD 1234 (Home Department/School) / Dean, Department Head/School Director, or Designee / Date

EFGH 1234 (Cross-listing Department/School) / Dean, Department Head/School Director, or Designee / Date

IJKL 1234 (Cross-listing Department/School) / Dean, Department Head/School Director, or Designee / Date
IV. FAQs and Helpful Hints

A. FAQ

**How do I get my course proposal into JIRA?**

Each College has designated a Curriculum Coordinator who facilitates uploading course proposals into JIRA. Please contact the Office of the University Registrar Academic Governance Staff if help is needed to identify this contact.

**I just received 15-Day Review feedback from Academic Governance Staff, what do I do now?**

After the requested revisions are complete, please send the proposal to your College’s designated Curriculum Coordinator for uploading into JIRA.

**I just received feedback from the Curriculum Committee, what do I do now?**

After the requested revisions are complete, please send the proposal to your College’s designated Curriculum Coordinator for uploading into JIRA.

**How can I find out if a course number is available for use?**

Please contact the Office of the University Registrar Academic Governance Staff for support at AcadGov@vt.edu or (540) 231-6252.

**What is an ADP title? Is this different from a course title?**

ADP is the abbreviated course title listed on the student transcript.

When possible, ADP title should be the same as the course title or a condensed version of the course title when over 30 characters.

**What is a conjoint course?**

Pairs of 4000- and 5000-level courses that offer the same content to undergraduate and graduate students, respectively. They are scheduled in the same classroom (face-to-face or virtually), at the same time, and taught by the same faculty. The undergraduate proposal must be approved by the UCC before the graduate proposal can be reviewed by the GCC.

The graduate course title must match the undergraduate course title, except that it must begin with “Advanced.” For example, Biomaterials (undergraduate) and Advanced Biomaterials (graduate).

The graduate course number ends with “G.” It is preferred that the undergraduate and graduate courses have the same digits except for the 4 or 5 as the first digit (i.e., 4024 and 5024G). If the parallel graduate course number is already in use, indicate a different (available) number.

Catalog Description must be identical for both courses, except the graduate course will include “Pre: Graduate standing.” Both courses should meet for the same number of contact hours and carry the same number of credits.

Learning Objectives must be identical for both courses, except the graduate course must include one or two additional objectives to address the advanced learning outcomes expected at that level.

Justification must be parallel for both courses. The graduate proposal must indicate the need for the course at the graduate level of instruction and must provide justification for receiving
graduate credit.

Prerequisite for the graduate course must be “Pre: Graduate standing.” The Topic Syllabus must be identical for both courses.

The GCC will not act on requests for graduate credit for a conjoint 4000-5000G course until the 4000-level course is approved by UCC, thus adding time to the process for obtaining graduate credit for the 5000G course. Submit the approved 4000-level course proposal with the proposal for the 5000G counterpart course.

**What is a cross-listed course?**

Courses that are cross-listed between two or more departments/schools. When a cross-listed course is scheduled (face-to-face or virtually), a section of each course will be scheduled in the same classroom or virtually, at the same time, and taught by the same faculty. A single course proposal package is submitted for cross-listed courses.

List department/school (subject) designator and course number for all cross-listed courses formatted with the Home department/school listed first and cross-listed departments/schools thereafter in parentheses, e.g., WGS 2264 (AFST 2264) (SOC 2264).

If possible, it is preferred course numbers have the same digits. The first and fourth digits must be the same.

Include letter of support signed by all departments/schools detailing cross-listing agreement that includes all of the following information:

- Identification of course Home department/school and cross-listed department/school(s).
- Acknowledgment that when cross-listed course is scheduled (face-to-face or virtually) that a section of each course will be scheduled and taught in the same classroom or virtually, at the same time, and by the same faculty.
- Acknowledgment that if the Home department/school course is inactivated, the cross-listed course department/school(s) will submit a new course proposal through academic governance if they wish to continue teaching the course.

**If my proposed class is 3 credit hours, how many hours per week do we need to offer for the lecture and the lab respectively?**

Reference the Instructional Credit Hour and Instructional Contact Minutes found at https://www.registrar.vt.edu/faculty-staff/instructional-minutes.html.

Reference the Instructional Credit Hour and Instructional Contact Minutes Calculator found at https://www.registrar.vt.edu/faculty-staff/instructional-minutes.html.

**Can I change the lecture/lab contact hours without changing the course credit hours or vice versa?**

Reference the Instructional Credit Hour and Instructional Contact Minutes found at https://www.registrar.vt.edu/faculty-staff/instructional-minutes.html.

**B. Frequently Encountered Problems with Proposals**

- Missing resource letter with course submission.
- Missing support letter from other department/school and/or College.
- Inappropriate Course Transcript Title (ADP) - Exceeds maximum character spaces or lack
of alignment with the long title, or not identical when long title is less than 31 characters.
• No indication if course is new or revised.
• Missing effective semester or effective semester has already expired (lack of lead-time).
• Not clear if course replaces or duplicates another course.
• Inconsistency in University requirement for lecture and lab contact hours to credit hours.
• Incomplete approval signatures and dates.
• Non-measurable Learning Objectives, or Learning Objective(s) are not appropriate for academic level.
• Incomplete textbook, teaching aid information, text not listed in alphabetical order, citation not in APA or MLA format, and/or missing page numbers.
• Lack of Topic Syllabus breakdown for topics greater than 20%.
• Editing the wrong version of the proposal package throughout the academic governance process.
• Subsequent revisions of course proposal uploaded into JIRA do not include all letters/documents.

C. Helpful Hints

• The Coversheet should be completed in its entirety.
• All areas of course proposal should be reviewed for completeness and inclusion of required information such as department/school name, course number, textbook pages, etc.
• Errors which frequently cause a course to not be approved or to be tabled for future action are principally related to clarity and alignment of wording between the Catalog Description (content), Learning Objectives (outcomes), and Topic Syllabus (topics). If inconsistent information is supplied and the Committee’s College representative offers no clarification, the course may be tabled for action until clarification is available.

• Conjoint Courses: The GCC will not act on requests for graduate credit for a conjoined 4000-5000G course until the 4000-level course is approved by the UCC, thus adding time to the approval process for the 5000G course. Submit the approved 4000-level course proposal with the proposal for the 5000G counterpart course.

Please do not hesitate to contact the Office of the University Registrar Academic Governance Staff (AcadGov@vt.edu) - we are standing by to help!
Bloom’s Taxonomy of Measurable Verbs

Benjamin Bloom created a taxonomy of measurable verbs to help us describe and classify observable knowledge, skills, attitudes, behaviors and abilities. The theory is based upon the idea that there are levels of observable actions that indicate something is happening in the brain (cognitive activity.) By creating learning objectives using measurable verbs, you indicate explicitly what the student must do in order to demonstrate learning.

Verbs that demonstrate Critical Thinking

<table>
<thead>
<tr>
<th>EVALUATION</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appraise</td>
<td>Argue</td>
</tr>
<tr>
<td>SYNTHESIS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arrange</td>
<td>Assess</td>
</tr>
<tr>
<td>ANALYSIS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assemble</td>
<td>Choose</td>
</tr>
<tr>
<td>APPLICATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Appraise</td>
<td>Combine</td>
</tr>
<tr>
<td></td>
<td>Analyze</td>
<td>Collect</td>
</tr>
<tr>
<td></td>
<td>Apply</td>
<td>Categorize</td>
</tr>
<tr>
<td>COMPREHENSION</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Complete</td>
<td>Compare</td>
</tr>
<tr>
<td></td>
<td>Compare</td>
<td>Construct</td>
</tr>
<tr>
<td>KNOWLEDGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Describe</td>
<td>Demonstrate</td>
</tr>
<tr>
<td></td>
<td>List</td>
<td>Discuss</td>
</tr>
<tr>
<td></td>
<td>Name</td>
<td>Explain</td>
</tr>
<tr>
<td></td>
<td>Recall</td>
<td>Express</td>
</tr>
<tr>
<td></td>
<td>Record</td>
<td>Identify</td>
</tr>
<tr>
<td></td>
<td>Relate</td>
<td>Recognize</td>
</tr>
<tr>
<td></td>
<td>Repeat</td>
<td>Restate</td>
</tr>
<tr>
<td></td>
<td>State</td>
<td>Tell</td>
</tr>
<tr>
<td></td>
<td>Tell</td>
<td>Translate</td>
</tr>
<tr>
<td></td>
<td>Underline</td>
<td>Use</td>
</tr>
</tbody>
</table>
Bloom’s Taxonomy Action Verbs

* Considered lower-level action verbs, consider using higher-level action verb appropriate for academic level, as/if applicable.

<table>
<thead>
<tr>
<th>Bloom’s Definition</th>
<th>Knowledge</th>
<th>Comprehension</th>
<th>Application</th>
<th>Analysis</th>
<th>Synthesis</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloom’s Definition</td>
<td>Remember previously learned information.</td>
<td>Demonstrate an understanding of the facts.</td>
<td>Apply knowledge to actual situations.</td>
<td>Break down objects or ideas into simpler parts and find evidence to support generalizations.</td>
<td>Compile component ideas into a new whole or propose alternative solutions.</td>
<td>Make and defend judgments based on internal evidence or external criteria.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Verbs</th>
<th>Verbs</th>
<th>Verbs</th>
<th>Verbs</th>
<th>Verbs</th>
<th>Verbs</th>
<th>Verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Arrange</td>
<td>• Classify</td>
<td>• Apply</td>
<td>• Analyze</td>
<td>• Arrange</td>
<td>• Appraise</td>
<td>• Appraise</td>
</tr>
<tr>
<td>• Define*</td>
<td>• Convert</td>
<td>• Change</td>
<td>• Appraise</td>
<td>• Assemble</td>
<td>• Argue</td>
<td>• Argue</td>
</tr>
<tr>
<td>• Describe*</td>
<td>• Defend</td>
<td>• Choose</td>
<td>• Breakdown</td>
<td>• Categorize</td>
<td>• Assess</td>
<td>• Assess</td>
</tr>
<tr>
<td>• Duplicate</td>
<td>• Describe*</td>
<td>• Compute</td>
<td>• Calculate</td>
<td>• Collect</td>
<td>• Attach</td>
<td>• Attach</td>
</tr>
<tr>
<td>• Identify*</td>
<td>• Discuss*</td>
<td>• Demonstrate</td>
<td>• Categorize</td>
<td>• Combine</td>
<td>• Choose</td>
<td>• Choose</td>
</tr>
<tr>
<td>• Label</td>
<td>• Distinguish</td>
<td>• Discover</td>
<td>• Compare</td>
<td>• Comply</td>
<td>• Compare</td>
<td>• Compare</td>
</tr>
<tr>
<td>• List</td>
<td>• Estimate</td>
<td>• Dramatize</td>
<td>• Contrast</td>
<td>• Compose</td>
<td>• Conclude</td>
<td>• Conclude</td>
</tr>
<tr>
<td>• Match</td>
<td>• Explain*</td>
<td>• Employ</td>
<td>• Criticize</td>
<td>• Construct</td>
<td>• Contrast</td>
<td>• Contrast</td>
</tr>
<tr>
<td>• Memorize*</td>
<td>• Express*</td>
<td>• Illustrate</td>
<td>• Diagram</td>
<td>• Create</td>
<td>• Defend</td>
<td>• Defend</td>
</tr>
<tr>
<td>• Name*</td>
<td>• Extend</td>
<td>• Interpret</td>
<td>• Differentiate</td>
<td>• Design</td>
<td>• Describe*</td>
<td>• Describe*</td>
</tr>
<tr>
<td>• Order</td>
<td>• Generalized</td>
<td>• Manipulate</td>
<td>• Discriminate</td>
<td>• Develop</td>
<td>• Discriminate</td>
<td>• Discriminate</td>
</tr>
<tr>
<td>• Outline</td>
<td>• Give example(s)</td>
<td>• Modify</td>
<td>• Distinguish</td>
<td>• Devise</td>
<td>• Estimate</td>
<td>• Estimate</td>
</tr>
<tr>
<td>• Recognize*</td>
<td>• Identify*</td>
<td>• Operate</td>
<td>• Examine</td>
<td>• Explain*</td>
<td>• Evaluate</td>
<td>• Evaluate</td>
</tr>
<tr>
<td>• Relate</td>
<td>• Indicate*</td>
<td>• Practice</td>
<td>• Experiment</td>
<td>• Formulate</td>
<td>• Explain*</td>
<td>• Explain*</td>
</tr>
<tr>
<td>• Recall*</td>
<td>• Infer</td>
<td>• Predict</td>
<td>• Identify*</td>
<td>• Generate</td>
<td>• Judge</td>
<td>• Judge</td>
</tr>
<tr>
<td>• Repeat</td>
<td>• Locate</td>
<td>• Predict</td>
<td>• Illustrate</td>
<td>• Plan</td>
<td>• Justify</td>
<td>• Justify</td>
</tr>
<tr>
<td>• Reproduce</td>
<td>• Paraphrase</td>
<td>• Recognize*</td>
<td>• Infer</td>
<td>• Prepare</td>
<td>• Interpret</td>
<td>• Interpret</td>
</tr>
<tr>
<td>• Select</td>
<td>• Predict</td>
<td>• Rewrite</td>
<td>• Model</td>
<td>• Prepare</td>
<td>• Relate</td>
<td>• Relate</td>
</tr>
<tr>
<td>• State*</td>
<td>• Review</td>
<td>• Review</td>
<td>• Schedule</td>
<td>• Rearrange</td>
<td>• Predict</td>
<td>• Predict</td>
</tr>
<tr>
<td>• Classify</td>
<td>• Select</td>
<td>• Schedule</td>
<td>• Outline</td>
<td>• Reconstruct</td>
<td>• Rate</td>
<td>• Rate</td>
</tr>
<tr>
<td>• Convert</td>
<td>• Summarize*</td>
<td>• Show</td>
<td>• Point out</td>
<td>• Relate</td>
<td>• Select</td>
<td>• Select</td>
</tr>
<tr>
<td>• Defend</td>
<td>• Use</td>
<td>• Sketch</td>
<td>• Question</td>
<td>• Separate</td>
<td>• Summarize*</td>
<td>• Summarize*</td>
</tr>
<tr>
<td>• Describe*</td>
<td>• Write</td>
<td>• Solve</td>
<td>• Revise</td>
<td>• Support</td>
<td>• Support</td>
<td>• Support</td>
</tr>
<tr>
<td>• Discuss*</td>
<td>• Write*</td>
<td>• Use</td>
<td>• Revise</td>
<td>• Value</td>
<td>• Value</td>
<td>• Value</td>
</tr>
</tbody>
</table>
Watch Out for Verbs that are not Measurable

In order for an objective to give maximum structure to instruction, it should be free of vague or ambiguous words or phrases. The following lists notoriously ambiguous words or phrases which should be avoided so that the intended outcome is concise and explicit.

<table>
<thead>
<tr>
<th>WORDS TO AVOID</th>
<th>PHRASES TO AVOID</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Believe</td>
<td>Evidence a (n):</td>
</tr>
<tr>
<td>• Hear</td>
<td>To Become:</td>
</tr>
<tr>
<td>• Realize</td>
<td>To Reduce:</td>
</tr>
<tr>
<td>• Capacity</td>
<td>• Appreciation</td>
</tr>
<tr>
<td>• Intelligence</td>
<td>• Acquainted</td>
</tr>
<tr>
<td>• Recognize</td>
<td>• Adjusted to</td>
</tr>
<tr>
<td>• Comprehend</td>
<td>• Awareness of</td>
</tr>
<tr>
<td>• Know</td>
<td>• Capable of</td>
</tr>
<tr>
<td>• See</td>
<td>• Comprehension</td>
</tr>
<tr>
<td>• Conceptualize</td>
<td>• Cognizant of</td>
</tr>
<tr>
<td>• Listen</td>
<td>• Enjoyment of</td>
</tr>
<tr>
<td>• Self-Actualize</td>
<td>• Conscious of</td>
</tr>
<tr>
<td>• Memorize</td>
<td>• Familiar with</td>
</tr>
<tr>
<td>• Think</td>
<td>• Interest in</td>
</tr>
<tr>
<td>• Experience</td>
<td>• Interested in</td>
</tr>
<tr>
<td>• Perceive</td>
<td>• Knowledge of</td>
</tr>
<tr>
<td>• Understand</td>
<td>• Knowledgeable</td>
</tr>
<tr>
<td>• Feel</td>
<td>• Understanding</td>
</tr>
</tbody>
</table>
