Please attach/submit additional documents as needed to fully complete each section of the form.

I. COURSE INFORMATION

Department: Applied Computing and Engineering Technology  
Course Title: Technical Drafting  
Course Number: DDSN 113

Type of Request:   New   One-time Only   Renew*   Change   Remove

Rationale: This course, taught by ACET faculty with guest speakers from the local design, drafting, and architectural community is offered to students seeking to express themselves in a creative way that will enable the physical embodiment of their creation. For example, many students who are taking the course are interested in pursuing a career in architecture or design. Students are first exposed to free-hand sketching, shading, perspective drawing, and work in small groups explaining their novel ideas in ways that others in the class can understand and create. This leads the student towards a deeper understanding of the relationship between a spoken verbal description of their design and how this is interpreted by another person who is attempting to draw the artifact. Students then move on to exercises that challenge them to draw a picture of an artifact designed to solve a problem. For example, students are asked to design and draw a weed puller. Feedback is then given by the instructor on what aspects are lacking or could be improved to better express the design so that it can actually be prototyped or manufactured by a third party. From here, students move on to learning the “alphabet of lines” of drafting and architecture as well as the standard lettering techniques for technical communication. Once students master these fundamentals they are then guided through the process of orthographic projection, isometric drawing and perspective drawing of simple forms before moving on to drawing artifacts of their own design. Faculty lectures are supplemented by guest lectures from local design firms.

*If course has not changed since the last review and is taught by the same tenure-track faculty member, you may skip sections III-V.

JUSTIFICATION FOR COURSE LEVEL

Normally, general education courses will not carry pre-requisites, will carry at least 3 credits, and will be numbered at the 100-200 level. If the course has more than one pre-requisite, carries fewer than three credits, or is upper division (numbered at the 300 level or above), provide rationale for exception(s).

This is a 100-level course with no pre-requisites.

ADDITIONAL INFORMATION (FOR OCHE DATABASE):

In which MUS Core Category, does this course fit?

Does the course include content regarding cultural heritage of American Indians?

II. ENDORSEMENT / APPROVALS

* Instructor: Bradley Layton  
   Phone / Email: x7865 bradley.layton  
   Signature _______________________ Date_9/27/16_

Program Chair: Steve Shen  
   Signature _______________________ Date__________

Dean: Shannon O’Brien  
   Signature _______________________ Date__________
**III. DESCRIPTION AND PURPOSE**

General Education courses are expected to be introductory and foundational within the offering department or within the General Education Group. They emphasize breadth, context, and connectedness; and relate course content to students’ future lives: (See Preamble)

DDSN 113 Technical Drafting supports The University of Montana's General Education Program in that it offers students considerable flexibility in selecting courses, and fits well within the set of common educational objectives expected of all University of Montana students.

DDSN 113 Technical Drafting develops competency in visual communication. The majority of the students enrolled in the Fall 2016 cohort are students coming back from tours of duty in Iraq and Afghanistan as well as students who have been exposed to the fracking, drilling, and coal mining industries. The majority of these students see the inequity perpetuated by the extractive industries and are working toward informing themselves on the broader vision of renewable energy and sustainable design. Technical drafting is one path towards literacy in a mode of communication that is vital to the technical community and supports the goal of producing engaged citizens of the Montana community as well as the global communities of sustainably minded individuals. As mentioned above, many of these veterans of war and the petroleum industries are already intimately acquainted with issues facing contemporary society, and have thus chosen to participate in the creative arts, with a focus on the role that technical drafting plays in science and technology communication, and how moving towards renewable energy technology design such as the design of art galleries and concert halls will enable the cultivation and enablement of appreciation of the humanities. As mentioned above, many of the students taking Technical Drafting have been a part of making American history and affecting global cultures through war and fossil fuel extraction. As stated above, Technical Drafting requires that students are able to articulate ideas verbally and in through drawing as well as brief technical descriptions such as material types, surface finishes, and dimensional tolerances. Students who complete Technical Drafting understand the relationships among three-dimensional and two-dimensional objects and can critically evaluate not only the simplicity and elegance of their own abstract concepts, but also emerge from the course well prepared to turn their designs into tangible objects through 3D printing. Mathematical skills such as geometry, trigonometry and arithmetic are heavily relied upon in this course and prepare students to adapt to and function well in our technologically-focused society.

DDSN 113 has been designed and developed to provide students with an intellectual foundation that allows them to engage in conversations with architects, engineers, and other technologists and prepares them for professional careers. With DDSN 113 as a foundation, the skills acquired are reinforced, expanded, and refined as students continue through their course of study (per the preamble). As mentioned above most students come into DDSN 113 ready to prepare for productive roles in their chosen fields as they already have civic awareness as a result of witnessing the negative repercussions of the extractive industries and how many of these run counter to democratic society. The acquired skills in DDSN 113 Technical Drafting allow students to express their own human experience and achieve genuine confidence in their drawing, drafting and creative knowledge and abilities. In order for DDSN 113 to be in full alignment with the preamble, students who do not complete their work to a satisfactory level are given additional opportunities thus enabling them to take personal responsibility for their growth and education.
IV. CRITERIA

BRIEFLY EXPLAIN HOW THIS COURSE MEETS THE CRITERIA FOR THE GROUP.

1. Courses guide students, whether in individual or group settings, to acquire foundational skills to engage in the creative process and/or in interpretive performance.

   The course begins with students working in small groups, explaining design ideas to each other. Students then begin with simple sketches. This immediately draws out existing weaknesses and limitations. These first few exercises are supplemented with TED talks where speakers talk on the detriments of being prejudgmental. With this in mind, students steadily progress at their own pace.

2. Through direct experience (for example, attendance and involvement with live performance, exhibitions, workshops, and readings), they will engage in critical assessment of their own work and the work of others.

   Throughout the course student work is evaluated by the instructor who always emphasizes the best work in the course. This exercise is not meant to admonish or discourage students who enter the course less prepared, but rather to raise the quality of the work of all students. As mentioned above, industry experts are invited into the classroom to share their professional experiences as well as to expose students to the standards to which they will be held one employed in their selected profession.

V. STUDENT LEARNING GOALS

BRIEFLY EXPLAIN HOW THIS COURSE WILL MEET THE APPLICABLE LEARNING GOALS.

1. Express themselves in the making of an original work or creative performance.

   Students begin this on the first day of class by describing an artifact to another student who draws it. They then follow this up with an original sketch of their own.

   The course culminates in a technical drawing of each student’s creation.

2. Understand the genres and/or forms that have shaped the medium.

   This is supplemented by textbook readings that dive into the foundations of technical drafting.

   The instructor also shares many of his or her own experiences working as a professional engineer.

   This is also supplemented with guest lectures and assigned online viewing.

3. Critique the quality of their own work and that of others.

   Student work is given back to students with the majority of the errors shown. With the guidance of the instructor, the student is also encouraged to discover his or her own mistakes or areas of the drawing where clarity is lacking.

   The highest quality student work is shared with the course. This encourages the best students to continue to strive for excellence and gives students who are still honing their skills a target to shoot for.
VI. ASSESSMENT

A. HOW ARE THE LEARNING GOALS FOR THE GENERAL EDUCATION GROUP MEASURED?
Describe how you will determine that students have met each of the General Education Learning Goals. This should include specific examples of assignments, rubrics or test questions that directly measure the General Education learning goals. (See Example)
Please attach or provide a web link to relevant assessment materials.

1. Express themselves in the making of an original work or creative performance.

   This is covered in Learning Goal 1. See Assessment Report.

2. Understand the genres and/or forms that have shaped the medium.

   This is covered in Learning Goal 10. See Assessment Report.

3. Critique the quality of their own work and that of others.

   This is covered in Learning Goals 2 & 8. See Assessment Report.

A General Education Assessment Report will be requested with the next rolling review cycle. This will serve to fulfill the University’s accreditation requirements to assess general education and will provide an opportunity to connect with your colleagues across campus and share teaching strategies. Items VI.B- D will be helpful in compiling the report.

B. ACHIEVEMENT TARGETS
[This section is optional. Achievement or mastery targets can be reported if they have been established.]
Describe the desirable level of performance for your students, and the percentage of students you expected to achieve this:

1.

2.
C. ASSESSMENT FINDINGS

[This section is optional. Assessment findings can be reported if they are available.]

What were the results/findings, and what is your interpretation/analysis of the data? (Please be detailed, using specific numbers/percentages when possible. Qualitative discussion of themes provided in student feedback can also be reported. Do NOT use course grades or overall scores on a test/essay. The most useful data indicates where students’ performance was stronger and where it was weaker. Feel free to attach charts/tables if desired.)

D. ASSESSMENT FEEDBACK

[This section is optional. Assessment feedback can be reported if it is available.]

Given your students’ performance the last time the course was offered, how will you modify the course to enhance learning? You can also address how the course could be improved, and what changes in the course content or pedagogy you plan to make, based upon on the findings. Please include a timeframe for the changes.

VII. SYLLABUS AND SUBMISSION

Please submit syllabus in a separate file with the completed and signed form to the Faculty Senate Office, UH 221, faculty.senate@mso.umt.edu. The learning goals for the Expressive Arts Group must be included on the syllabus. An electronic copy of the original signed form is acceptable.