

BIO 430 Biological Illustration (3 credits)

Time: Mondays & Thursdays, 3:30-4:50

Location: CAS 222

Instructor: Dr. Loren B. Byrne
Office: 243 MNS

Phone: X 3890

Email: lbyrne@rwu.edu

Office Hours: Mon, & Wed. 11am-Noon, Thursday 1-2, or by appointment

Course description:

Scientific illustrations are useful means of communicating information about biological subjects, especially in reports and publications; often, it is easier to explain and understand something with a drawing than via words. In a complementary way, illustrations are also legitimate art works that can move the viewer to contemplate the beauty and wonder of nature. Further, scientists and artists can utilize the practice of illustration to improve their critical observation and thinking skills. This course serves all of these purposes by training students in the scientific, artistic and technical aspects of “seeing” biological subjects and creating realistic illustrations that convey basic scientific information about them (i.e., the drawing as data) in interpretable and visually appealing ways.

A range of subjects and media will be explored to expose students to a variety of illustration techniques. The course will begin with a series of basic exercises to help students improve their critical observation, visual interpretation and drawing skills. Subsequently, a series of projects will help students iteratively refine their skills for finishing illustrations in forms suitable for exhibition or publication. A final project will allow students free reign for exploring more personal, creative and expressionistic dimensions of biological illustration. Throughout the course, the practice of illustration will be complemented by discussions about relationships between art and science. Also, critique sessions will allow students to discuss and evaluate each other’s work.

No prior drawing experience is required; the instructor will work with students individually to improve their skills beyond those they already possess.

Note: This course is not approved to fulfill requirements for the Biology or VARTS majors, minors or core concentrations

Required materials:

No required textbook. Reading selections will be provided.

Students are responsible for obtaining all materials required for completing exercises and projects. (See appended list.)

Students may also obtain their own biological subjects but some will be provided.

Course outcomes:

After this course students should be able to:

- Create detailed and realistic illustrations in a range of media that clearly convey essential scientific information about the subjects
- Explain essential considerations for making decisions about effective illustration (e.g., choice of medium, scaling, reduction, scientist goals) & provide constructive critique of illustrations
- Discuss relationships between art and science, including their personal reflections about the value of exploring these relationships for both artists and scientists

Assessment:

Students will be assessed using the following criteria (with percent of final grade):

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| • Completion of all in-class and homework exercises & assignments | 30% |
| • Numbered projects (% equally divided among them) | 30% |
| • Attendance & participation in discussions & critiques | 15% |
| • Demonstrated awareness of the student’s own evolving abilities (via on-on-one discussions, reflective writing & critique contributions) | 15% |
| • Observed commitment to & improvements in basic skills through the semester | 10% |

Grading scale and the meaning of grades:

A= ≥ 93% Excellent	A- = 90-92.9% Great	B+ = 87-89.9% Very Good	B = 83-86.9% Good	B- = 80-82.9% Good
C+ = 77-79.9% Average	C = 73-76.9% Average	C- = 70-72.9% Average	D = 60-69.9% Poor	F = ≤ 59.9% Failure

Assignment submission & class communications:

The online system *Bridges* will be used for submission of writing assignments and to provide course materials. Email (.rwu accounts only) is used to provide course information and communicate important reminders. Students are responsible for using these resources and should communicate any concerns to the professor ASAP.

Attendance policy:

Because we form a learning *community* in this course, the presence and participation of each student in each class benefits us all. Thus, attendance is expected (*read: required*) for all class meetings. Excused absences will be granted only for legitimate reasons (severe illness or other extenuating circumstances such as family emergencies) and only when the student informs the professor (by email is OK) in advance of the expected absence (ASAP or at least 12 hours notice for emergencies or illness).

- If you will miss class for legitimate religious observances, you must inform the professor ASAP.
- You will not receive credit for missed in-class work or exams due to unexcused absences.
- NO MAKE-UP or extra credit work will be given in place of missed in-class work (incl. drawing exercises).
- Students are responsible for turning assignments in on time even if they miss the class period when the assignment is due. Points will be deducted from all assignments turned in late and dates will be established after which assignments will not be accepted and a score of zero will be assigned.

Academic integrity and classroom civility (including cell phone policy)

By becoming an RWU student, you have agreed to abide by the Academic Integrity pledge (“...to pursue the highest ideals of academic life... to be honest...”) which means that you will not cheat, fabricate information, plagiarize, be fraudulent or interfere with others’ work. The University Statement on Plagiarism in the Undergraduate Catalog reads: “A first offense may result in failure of the course involved, plus an entry on the student’s permanent record. A second offense is punishable by expulsion from the University.” **So don’t plagiarize!** The professor of this course is skilled in identifying plagiarism, uses a program in *Bridges* to identify it and will document this or any other instances of academic dishonesty in any student’s permanent file and/or will allow a student to fail the course. In art, plagiarism would include turning in work that is not yours.

In addition, maintaining academic integrity (e.g., civility) includes respecting others and learning how to disagree with ideas while not being disagreeable. All students should respect their classmates and the learning environment of a classroom; this includes not being disruptive by talking out of turn, texting on mobile devices or using computers for non-class purposes! **Such disruptions are distracting and disrespectful to the professor and other students and will not be tolerated.** Any student who violates these classroom policies will bear the consequences following the definitions, policies and procedures described in the University Catalog. In addition students engaging in such behaviors may be identified by name in the class, or be asked to leave the classroom if they do not conduct themselves civilly or cannot refrain from texting in class. In such instances, the student will receive an unexcused absence with loss of credit for in-class activities.

Academic support services

If you are a student with a disability and you wish to receive academic accommodations for any aspect of this course, you must first register with Disability Support Services on the second floor of the University Library in the Center for Academic Development. All students wishing to receive accommodations must inform the professor and submit required forms **7 days** (\pm 1 day) in advance of every date for which an accommodation is sought.

Important dates:

Feb 13 - last day to drop the course without receiving a W

March 26 - last day to drop the course and receive a W

Appended materials list

- Small gooseneck desk lamp with 40 or 60 watt bulb
- Drawing pencils in a range of graphite hardnesses; a basic set to have includes: 6H, 4H, 2H, H, HB, B, 2B, 4B, 6B and you can fill in with others as you wish to expand your collection. If you’re unfamiliar with the pencil grading scale read more here: <http://www.pencils.com/hb-graphite-grading-scale>
- A nice pencil sharpener
- A couple of kneaded erasers; these are the ones that are like silly putty, often blue in rectangular forms.
- Several sizes of blending stumps (S, M, L)
- 12 or 16 inch ruler
- A nice sketchbook with good quality paper that is at least 14 X 17”
- Nice quality technical drawing pens, ideally in a range of nib or point sizes (see overview here: http://en.wikipedia.org/wiki/Technical_pen). The really nice ones are Rapidograph but they can be expensive.

If you can find three inexpensive ones that would be sufficient. But if you are really interested in pen work (stippling and lines) then you might want to buy a wider range of sizes.

- If you're interested in doing more ink work, you could also obtain dip-ink style pens (which are trickier to use but very fun).
- Your choice of media for color work; just make sure it's high quality artistic media (no crayons or markers!): watercolor, acrylic or oil paint, pastels, pencils, etc.
- Any other materials needed for work with the color materials (canvas, watercolor paper, nice heavy paper for pastels, other creative materials)
- Other media that you'd like to experiment with
- And finally, any cool specimens or subjects you have or can find that you'd like to draw such as shells, bones, flowers, fruits, stuffed creatures, etc. (I will provide a lot of subjects to draw though so this isn't critical)

Course schedule:

Week	Main Topics	Exercises & Projects (some may be homework)
1&2	Introduction & goals Drawing as seeing Right & left brain modes	Making marks on paper The power & meaning of lines Vase, Upside-down & blind & modified contour drawings Negative space & or still life Portrait
3	Importance of light & shadow Rendering, shading and blending Drawings as data: measuring & scaling Proportion & perspective	Clay "amoeba" drawings Invertebrate & or skull drawings
4 & 5	What's the scientist's story? Clear and interpretable illustrations Reducing & the publication process	Project # 1 (pencil)
6 & 7	Ink & stippling	Projects #2a and 2b (ink)
8 & 9	The biological world is colorful	Project #3 (color, student choice of medium)
10 & 11	The biological world is dynamic Conveying dynamism, process & change	Project #4 (student choice of medium)
12 & 13	Stop moving! Drawing living organisms	Sketching in the field (incl. required zoo trip)
14 & 15	Creative expression with illustrations See how far we've come!	Final Project #5 Revisit the beginning exercises

*****The professor reserves the right to adjust this schedule and modify, add or reorder exercises or projects as needed.*****