**Online lectures:**

- Recorded screencast of Keynote/Powerpoint for each lecture. Used a headphone/microphone to record voice.
- Used Camtasia to record/edit (Echo360 and/or Powerpoint also work).
- Each lecture was between 5-25 minutes, averaging 10-15 minutes. Shorter is better, even if it means breaking up lecture arbitrarily.
- Uploaded mp4 file to Echo360 for conversion to streaming video.
- Linked streaming lecture to Kodiak.

**First Week/Beginning of every class:**

Class one:

- Have them read syllabus for class two.
- Assign “Tips for Students” for class two; have them write their reaction.
- Describe how this class is different.
- Have them choose groups and do a group activity (e.g., “What is the most important body system?”).
- Content survey (for assigning groups)

Class two:

- Assign students to group (by color; each group has 4 members). Describe folder system.
- Describe how group work will work (peer review, group work contribution to grade, etc).
- Assign activity for group ice-breaker.
- Have them create and sign group conduct sheet (for next class; to be put in folders permanently).

Every class:

- Entry ticket
- Today we will/For next time
- End of class: metacognition

**Student Misconceptions about Learning**

(Adapted from: http://www.facultyfocus.com/articles/teaching-professor-blog/four-student-misconceptions-learning/)

1. **Learning is fast** – Students think that learning can happen a lot faster than it does. Take, for example, the way many students handle assigned readings. They think they can get what they need out of a chapter with one quick read through (electronic devices at the ready, snacks in hand, and ears flooded with music). Or, they don't think it's a problem to wait until the night before the exam and do all the assigned readings at once…

2. **Knowledge is composed of isolated facts** – Students who hold this misconception demonstrate it when they memorize definitions….For example, the commonly used student practice of making flash cards with only one term or concept on each card. The approach may enable students to regurgitate the correct definition, but they "never develop a connected understanding or how to reason with and apply concepts." (p.216)…

3. **Being good at a subject is a matter of inborn talent rather than hard work** – [There are students who claim] with great assurance that they can't write, can't do math, are horrible at science, or have no artistic ability….[I]f students hold these beliefs about their abilities, they don't try as hard in those areas and give up as soon as any difficulty is encountered. Then they have even more evidence about those absent abilities. Students need to bring to learning a "growth mindset," recognized by statements like this, "Yes, I'm pretty good at math, but that's because I've spend a lot of time doing it…."

4. **I'm really good at multi-tasking, especially during class or studying** – …"The evidence is clear: trying to perform multiple tasks at once is virtually never as effective as performing the tasks one at a time focusing completely on each one." (p. 217) …There is also "inattentional blindness" which refers to the fact that when our attention is focused on one thing, we aren't seeing other things. "The problem of not knowing what we missed is that we believe we haven't missed anything." (p.217)

## Team Policies[†]

Your team will have a number of responsibilities as it completes problem and project assignments.

- Designate a coordinator, recorder and checker for each assignment. Add a monitor for 4-person teams. Rotate these roles for every assignment.

- Do the required individual preparation.

- Meet and work. Coordinator keeps everyone on task and makes sure everyone is involved, recorder prepares the final solution to be turned in, monitor checks to makes sure everyone understands both the solution and the strategy used to get it, and checker double-checks it before it is handed in. Agree on next meeting time and roles for next assignment. For teams of three, the same person should cover the monitor and checker roles.

- Checker turns in the assignment, with the names on it of every team member who participated actively in completing it. If the checker anticipates a problem getting to class on time, it is his/her responsibility to make sure someone turns it in.

- Review returned assignments. Make sure everyone understands why points were lost and how to correct errors.

- Consult with your instructor if a conflict arises that can't be worked through by the team.

- Dealing with non-cooperative team members. If a team member refuses to cooperate on an assignment, his/her name should not be included on the completed work. If the problem persists, the team should meet with the instructor so that the problem can be resolved, if possible. If the problem still continues, the cooperating team members may notify the uncooperative member in writing that he/she is in danger of being fired, sending a copy of the memo to the instructor. If there is no subsequent improvement, they should notify the individual in writing (copy to the instructor) that he/she is no longer with the team. The fired student should meet with his/her instructor to discuss options. Similarly, students who are consistently doing all the work for their team may issue a warning memo that they will quit unless they start getting cooperation, and a second memo quitting the team if the cooperation is not forthcoming. Students who get fired or quit must either find another team willing to add them as a member or get zeroes for the remaining assignments. As you will find out, group work isn't always easy and conflicts often result from differing skill levels and work ethics. When teams work and communicate well, however, the benefits more than compensate for the difficulties. One way to improve the chances that a team will work well is to agree beforehand on what everyone on the team expects from everyone else. Reaching this understanding is the goal of the assignment on the Team Expectations Agreement handout.

[†]Adapted from R. M. Felder & R. Brent, Effective Teaching, North Carolina State University, 2000.

# Team Expectations Agreement*

On a single sheet of paper, put your names and list the rules and expectations you agree as a team to adopt. You can deal with any or all aspects of the responsibilities outlined above—preparation for and attendance at group meetings, making sure everyone understands all the solutions, communicating frankly but with respect when conflicts arise, etc. Each team member should sign the sheet, indicating acceptance of these expectations and intention to fulfill them. Turn one copy into the professor, and keep a remaining copy or copies for yourselves. These expectations are for your use and benefit—they won't be graded or commented on unless you specifically ask for comments. Note, however, that if you make the list fairly thorough without being unrealistic you'll be giving yourselves the best chance. For example, "We will each solve every problem in every assignment completely before we get together" or "We will get 100 on every assignment" or "We will never miss a meeting" are probably unrealistic, but "We will try to set up the problems individually before meeting" and "We will make sure that anyone who misses a meeting for good cause gets caught up on the work" are realistic.

*R. M. Felder & R. Brent, Effective Teaching, North Carolina State University, 2000.

Remember to rate yourself!

# Peer Rating of Team Members[†]

Your Name_____ Your Team _____

Please write the names of all of your team members, INCLUDING YOURSELF, and rate the degree to which each member fulfilled his/her responsibilities in completing the team assignments. *DO NOT LEAVE ANY COMMENTARY BLANK!* Place this form in a sealed envelope, with your team name/number on the outside, and give it to your instructor. The possible ratings are as follows:

**Excellent:** Consistently carried more than his/her fair share of the workload.
**Very good:** Consistently did what he/she was supposed to do, very well prepared and cooperative.
**Satisfactory:** Usually did what he/she was supposed to do, acceptably prepared and cooperative.
**Ordinary:** Often did what he/she was supposed to do, minimally prepared and cooperative.
**Marginal:** Sometimes failed to show up or complete assignments, rarely prepared.
**Deficient:** Often failed to show up or complete assignments, rarely prepared.
**Unsatisfactory:** Consistently failed to show up or complete assignments, unprepared.
**Superficial:** Practically no participation.
**No show:** No participation at all.

***These ratings should reflect each individual's level of participation and effort and sense of responsibility, not his or her academic ability.***

| Name of team member | Rating | Commentary (DO NOT LEAVE BLANK!) |
|---|---|---|
| _____ | _____ | _____ |
| | | _____ |
| | | _____ |
| _____ | _____ | _____ |
| | | _____ |
| | | _____ |
| _____ | _____ | _____ |
| | | _____ |
| | | _____ |
| _____ | _____ | _____ |
| | | _____ |
| | | _____ |

Your Signature _____

[†]Adapted from R. M. Felder & R. Brent, *Effective Teaching*, North Carolina State University, 2000.

# Autorating System[†]

1. Determine group project grade.

2. Convert individual verbal ratings from the Peer Rating form to numbers, as follows:

   Excellent = 100
   Very good = 87.5
   Satisfactory = 75
   Ordinary =62.5
   Marginal = 50
   Deficient = 37.5
   Unsatisfactory = 25
   Superficial =12.5
   No show = 0

3. On a spreadsheet, enter numerical ratings received by team members in rows.

4. Average individual marks, calculate overall team average, calculate adjustment factors as individual average divided by team average. If an adjustment factor is greater than 1.05, reset it to 1.05.

5. Individual project grade = (team grade) ´ (adjustment factor).

Example

| Team project grade | 80 | | | | | | | Indiv. Proj. Grade |
|---|---|---|---|---|---|---|---|---|
| Name | Vote 1 | Vote 2 | Vote 3 | Vote 4 | Indiv. Avg. | Team Avg. | Adj. Fctr. | |
| Betty | 87.5 | 87.5 | 75 | 87.5 | 84.4 | 82.0 | 1.02 | 82 |
| Carlos | 87.5 | 100 | 87.5 | 87.5 | 90.6 | 82.0 | 1.05 | 84 |
| John | 62.5 | 75 | 50 | 75 | 65.6 | 82.0 | 0.80 | 64 |
| Angela | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 82.0 | 1.05 | 84 |

[†]Kaufman, Felder, and Fuller (2000). This sheet is for instructor to use and is not handed out to students. Adapted from Brown, R. W. (1995). *Autorating: Getting individual marks from team marks and enhancing teamwork. 1995 Frontiers in Education Conference Proceedings*, Paper 3C24.

**Bio 215**

**Class number:** 30

**Lecture(s) or book section(s) covered:** Ch 13.5-13.8

**Today We Will:**
1. Announcements
2. Mini lecture: monosynaptic vs. polysynaptic reflexes
3. Case study (group; put group answers in folder)
4. Review answers
5. Peer review and most important point (on back)

**Activities:**
1. Printout 2 case studies per group. Have them hand in sheet. Peer review. Most important point on back of peer review.

**For Next Time:**
1. Read, watch, and review for Ch 14.1-14.8
2. Muddiest point for above

**In-Class Activities:**

- Jigsaw
- Jeopardy
- Memory matrix
- Worksheets
- Crossword puzzle
- Demonstrations
- Skits
- Model building
- Case study
- Concept map
- Flow chart
- Group quiz (the class before an exam)

**Metacognition (usually at end of class to hand in):**

- 3 things you learned
- K-W-L (What you knew, what you wanted to learn, what you learned)
- Clearest point
- Muddiest point
- Explain it to a 7-year-old
- Taking stock surveys (what's working, what isn't)
- One minute break to share notes
- Most significant/important point
- Most surprising point
- Exam post-mortem

**Group Quiz:**

1. Students take the quiz individually (15-20 minutes).
2. Students turn in the quiz. Each group has one clean copy of the quiz, which they will complete together in the remaining class time.

**Grading:**

1. Grade the individual quizzes. If a student gets less than 50%, they fail and get no bonus points.

2. Calculate the individual quiz average of the group members who have passed the quiz.

3. Grade the group exam. If the group exam score is higher than the individual average, add the difference to each individual score.