Week	Day/date	Meet	Lab Exercise	Lab Specifics –see handout
1	Thurs Sept 27		*C. elegans* Mendel Revisited	Brief Intro to Course Cross WT males X DU moms
2	Mon Oct 1	*Intro to Course and Models*		
	Tues Oct 2		*Arabidopsis* Direct detection of aha- 3 genotype *C. elegans:* Mendel Revisited Optional Workshop on Homework #1	Examine seedlings Pick WT F1 progeny allele symbols, calculating freq of genotypes; phenotypes, etc
	Thurs Oct 4 **LAPTOPS**	**Meet in CF105 at 1:30 pm** *Genetic Model Organisms & Intro to Genes We Share Exercise*	*C. elegans:* Mendel Revisited *Arabidopsis:* Direct detection of aha- 3 genotype Genes We Share	After lecture in CF105 Remove F1 parents Examine Seedlings & assess phenotypes If time: Finding info online about the *mutator* gene family
3	Mon Oct 8	**Meet in LAB**	*C. elegans:* Mendel Revisited	Pick WT F3s
	Tues Oct 9	**Meet in AH 16 at 1:30pm** *Intro to the Chi Square Test*	*C. elegans:* Mendel Revisited	Score F2s & Chi square analysis
	Thurs Oct 11		*C. elegans:* Mendel Revisited	Score F3s and deduce genotypes of F2 parents; Data analysis
4	Mon Oct 15	*Forward & Reverse Genetics & the aha gene family*		
	Tues Oct 16		*Arabidopsis:* Direct detection of aha- 3 genotype	Assess phenotypes Prep genomic DNA; Set up PCR
	Thurs Oct 18		*Arabidopsis:* Direct detection of aha- 3 genotype	Gel analysis of PCR products Data analysis and discussion

Week	Day/date	Lecture Topic	Lab Exercise	Lab Specifics –see handout
5	Mon Oct 22 Quiz review	*Loose ends from Mendel Rev* *Mutation Rates and E. coli as a model organism*		
	Tues Oct 23 **Wed Oct 24**		**QUIZ 1 one hour** *E.coli:* Spontaneous & Induced rifR & lac- Mutations	Mendel Revisited & Chi Square Intro to asceptic technique Selection/screen for rifR & lac- **Check for white colonies on WED Oct24**
	Thurs Oct 25		*E.coli:* Spontaneous & Induced rifR & lac- Mutations	Collect & analyze data Factors that affect mutation frequency Streak rifR colonies
6	Mon Oct 29 MEET IN LAB		*E.coli:* Spontaneous & Induced rifR & lac- Mutations	Set up overnight rifR cultures Streak lac- colonies Discuss minimal media
	Tues Oct 30		*E.coli:* Spontaneous & Induced rifR & lac- Mutations	Prep & quantitate rifR DNA Set up PCR using rifR template Set up lac- cultures
	Thurs Nov 1		*E.coli:* Spontaneous & Induced rifR & lac- Mutations if TIME: lecture	Gel analysis of PCR products Set up lac – reversion expt Look at rpoB gene and Mutagenesis part 3
7	Mon Nov 5	*Forward and Reverse Genetics & complementation*		
	Tues Nov 6	Meet in ES80 at 1:30 for lecture on ***rpoB & AR in E. coli & Into to HGT*** ***LAPTOPS?***	*Lecture in ES80* *E.coli:* Spontaneous & Induced rifR & lac- Mutations	***rpoB & AR in E. coli & Into to HGT*** Short discussion of agarose gels & nanodrop data Lac reversion data collection & analysis Factors that affect mutation freq & the Ames TEST & why we care about reverse mutations
	Thurs Nov 8	***LAPTOPS***	*E. coli:* Conjugation and horizontal gene transfer *E.coli:* Spontaneous & InducedrifR & lac- Mutations	Cross F'XF- and plate on various media **Fri: Score Mac plates** ***LAPTOPS: Mutagenesis Part3***

8	Mon Nov 12	*VETERANS DAY*		
	Tues Nov 13		*E. coli:* Conjugation and horizontal gene transfer *Nasonia:* Complementation	Data collection & analysis Set up scarlet crosses
	Thurs Nov 15	Meet in **** at 1:30 for lecture on sequence analysis & loose ends on Conjugation experiment	**After lecture: QUIZ 2** *Nasonia:* Complementation	Quiz covers E. coli experiments, mutation rates, selective media, etc. Check crosses and remove females

Week	Day/date	Lecture Topic	Lab Exercise	Lab Specifics –see handouts
9	Mon Nov 19	*Forward genetics*		
	Tues Nov 20 **LAPTOPS**		*E.coli:* Spontaneous & Induced rifR & lac- Mutations **LAPTOPS** *Nasonia:* Complementation	Analysis of rifR sequence data Check crosses & primer on pupae cracking
	Thurs Nov 22		**THANKSGIVING**	
10	Mon Nov 26	*Introduction to RNAi*		
	Tues Nov 27		*C. elegans: Gene knockdown using RNAi* *E.coli:* Spontaneous & Induced rifR & lac- Mutations	Plate worms on "RNAi media" Discussion of data analysis and lab report
	Thurs Nov 29		*Nasonia:* Complementation *Forward Genetics*	Score progeny of crosses & work up genotypes Students work on presentations
11	Mon Dec 3	*Using RNAi in a Forward Genetic Screen*		
	Tues Dec 4		*C. elegans: Gene knockdown using RNAi* *Exploring Biological Processes using Forward Genetic Screens*	Score plates and discuss results **Student Presentations: primary literature**
	Thurs Dec 6		*Exploring Biological Processes using Forward*	**Student Presentations: primary literature**

			Genetic Screens	
	Tues Dec 11 10:30am	**FINAL QUIZ**		