Course Description: Four semester hours, three hours lecture, three hours lab per week. An introduction to modern genetic principles including inheritance patterns, chromosome structure and function, gene expression and regulation, DNA replication and repair, and the behavior of genes in populations. Required lab fee.

Pre-requisites: BIOL 1306 & 1106, 1307 & 1107, CHEM 1311 & 1111, 1312 & 1112
Co-requisites: Bio 3453

Credit Hour Justification. BIOL 3053 “Genetics Lab” is the (0) credit hour co-requisite of BIOL 3453 “Genetics” (4 credits lecture, 0 credits lab) and spans 15 weeks as a fully online experience. The lecture and lab must be taken concurrently. The grades for lecture exams and lab assignments are combined into one single grade for the course. Students are required to complete significant reading prior to attempting laboratory exercises and complete laboratory reports and worksheets. Successful completion of BIOL 3453 (online), including the “0” credit BIOL 3053, will require, minimally, 18 hours per week. This includes the time for BIOL 3453 and the co-requisite BIOL 3053.

Program Learning Outcomes: PLO #2 – Communication (written); PLO #3 – Critical Thinking

Student Learning Outcomes:

• SLO – 1: Be able to collect and professionally report data sets generated by a variety of techniques routinely used in genetic analysis (PLO #2)
• SLO – 2: Be able to analyze both qualitative and quantitative data sets, interpret the results, and effectively communicate those results. (PLO #3)

Course Requirements: Students are required to complete worksheets reflecting the principles and concepts associated with the specific laboratory exercise. Students are expected to read all D2L content modules associated with this class, including correlated material in BIOL 3453.

What you need for this course:

• Access to D2L: It is here that you will find the course units, content modules, worksheets, and other assignments.

• Technology Requirement: As you have elected to enroll in an online course, it is your responsibility to acquire a consistent, stable, dependable computer and internet connection with which to complete the assignments for the course by the deadlines indicated on the Semester Calendar. It is not the responsibility of the instructor to provide additional time for assignments or exams or an alternative means of completing the course due to technological issues on your part. Just as it is your responsibility to acquire and maintain adequate transportation to attend a face-to-face course, it is your responsibility to secure the technological means to participate in and complete this course. If you are having technical issues with D2L, please call the student help line at 936-468-1919 or e-mail at d2l@sfasu.edu; live support is available from 8 am CST to 5 pm CST, Monday through Friday. For general technical issues, you may call the Technical Help Desk at 936-468-4357; they are available M – F from 8 am to 5 pm.
<table>
<thead>
<tr>
<th>Week of...</th>
<th>Lab Topic</th>
<th>Lab Wksht / Other Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 18</td>
<td>Exercise: “Cell Division”</td>
<td>Cell Division Worksheet DUE BY 5 PM, JAN. 25. See syllabus regarding late submissions.</td>
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<tr>
<td></td>
<td>Exercise: “Chi – Square Test In Genetics”; Correlated to “Mendelian Genetics” in BIOL 3453</td>
<td>Chi-Square Test In Genetics Worksheet DUE BY 5 PM, JAN. 25</td>
</tr>
<tr>
<td>Jan. 22</td>
<td>Exercise: “Epistasis”; Correlated to “Extensions of Mendelian Genetics” in BIOL 3453</td>
<td>Epistasis Worksheet; DUE BY 5 PM, JAN. 29</td>
</tr>
<tr>
<td>Jan. 29</td>
<td>Exercise: “Linkage Analysis” Correlated to “Chromosome Mapping in Eukaryotes” in BIOL 3453</td>
<td>Linkage Analysis Worksheet; DUE BY 5 PM, FEB. 5</td>
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<tr>
<td>Feb. 5</td>
<td>NO SCHEDULED LABS</td>
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<tr>
<td>Feb. 12</td>
<td>Exercise: “Cytogenetics”; Correlated to “Chromosome Mutations – Variation in Number and Arrangement” in BIOL 3453</td>
<td>Cytogenetics Worksheet; DUE BY 5 PM, FEB. 19</td>
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<tr>
<td>Feb. 19</td>
<td>Exercise: “Genome Organization”; correlated to “DNA Organization in Chromosomes” in BIOL 3453</td>
<td>Genome Organization worksheet, DUE BY 5 PM, FEB. 26</td>
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<tr>
<td>Feb. 26</td>
<td>NO SCHEDULED LABS</td>
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<tr>
<td>Mar. 4</td>
<td>Exercise: “Graphing”</td>
<td>Graphing Worksheet; DUE BY 5 PM, MARCH 18</td>
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<tr>
<td>Mar. 11</td>
<td>Spring Break</td>
<td>NO NEW ASSIGNMENTS</td>
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<tr>
<td>Mar. 18</td>
<td>Exercise: “Quantitative Genetics”</td>
<td>Quantitative Genetics Worksheet DUE BY 5 PM, MARCH 25</td>
</tr>
<tr>
<td>Mar. 25</td>
<td>Exercise: “Proteins”; Correlated to “Translation and Proteins” in BIOL 3453</td>
<td>Proteins worksheet DUE BY 5 PM, APRIL 1</td>
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<tr>
<td>April 1</td>
<td>NO SCHEDULED LABS</td>
<td>NO NEW ASSIGNMENTS</td>
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<tr>
<td>April 8</td>
<td>Exercise: “Electrophoresis of DNA Restriction Fragments”; Correlated to “Recombinant DNA Technology in BIOL 3453</td>
<td>Electrophoresis of DNA Restriction Fragments Worksheet DUE BY 5 PM, APRIL 15.</td>
</tr>
<tr>
<td>April 15</td>
<td>Exercise: “DNA Databases and Sequence Analysis”; Correlated to “Recombinant DNA Technology in BIOL 3453”</td>
<td>DNA Databases and Sequence Analysis Worksheet DUE BY 5 PM, APRIL 22</td>
</tr>
<tr>
<td>April 22</td>
<td>Exercise: “DNA Diagnostics”; Correlated to “Recombinant DNA Technology” and “Cancer Genetics” in BIOL 3453</td>
<td>DNA Diagnostics Worksheet; DUE BY 5 PM, APRIL 29</td>
</tr>
<tr>
<td>April 29</td>
<td>Exercise: “Population Genetics”; Correlated to “Population and Evolutionary Genetics” in BIOL 3453</td>
<td>Population Genetics Worksheet; DUE BY 5 PM, MAY 6</td>
</tr>
<tr>
<td>May 6</td>
<td>FINALS WEEK – NO LABS</td>
<td>NO NEW ASSIGNMENTS</td>
</tr>
</tbody>
</table>
Grading

Your grade in lab is determined by your cumulative score on (13) lab worksheets, each worth 30 points, for 390 points total. All worksheets are to be submitted in digital format to the appropriate DropBox on D2L. Only (4) file formats are acceptable: pdf, "docx" (Word), "xlsx" (Excel) and "pptx" (PowerPoint); I will specify which of them is required for specific labs in the laboratory instructions. If you submit any other format, you will receive a "0". For cybersecurity reasons, assignments are only accepted if submitted to Dropbox – DO NOT email worksheets to me as I will simply delete the message. To calculate your grade, I will determine your percentage, with respect to the maximum possible 390 points. All grades will be posted on D2L.

Worksheet due dates are stipulated in D2L – late papers will be accepted, with possible loss of credit, based on the sliding scale below:

- The worksheets are due by 5 pm on the stipulated due dates. Since I don't begin grading till the next day, you may submit your worksheet UP TO 12 HOURS LATE WITH NO PENALTY. Simply upload it to the Dropbox. You will probably get it flagged as late but, so long as it is within the 12 hour window, you will not lose points.
- Between 12 and 24 hours late. You will receive a maximum of 75% credit. In other words, I will grade the worksheet and then multiply by 0.75 to determine your score.
- Between 24 and 36 hours late. You will receive a maximum of 50% credit.
- Between 36 and 48 hours late. You will receive a maximum of 25% credit.
- Over 48 hours late. A "0" will be recorded and no late submission will be accepted.

The assignment dropboxes will be open and accessible from the official due date until 48 hours later. Once the 48 hours has passed, the dropbox will close and no further submissions will be accepted. When you are uploading a worksheet, don’t wait till the last minute; not waiting until the last minute will give you an opportunity to re-submit if something goes wrong. It is your responsibility to ensure that the correct file(s) are submitted.

Your grade in BIOL 3053 constitutes 25% of your grade in BIOL 3453. Please see the BIOL 3453 syllabus for the formula used to derive your grade. The same letter grade will be recorded for both BIOL 3453 and BIOL 3053.

Expectations for Students in BIO 3053 online

1. Technical Preparation: The technical nature of the course demands preparation on your part. Students should submit all assignments early enough to account for technical difficulties. In the event of a technical catastrophe (e.g. the university’s main fiber optic line gets severed, a hurricane floods telecommunications hubs in Houston, the D2L server goes down, etc.—all of these things have happened), please do not inundate the Biology Department with phone calls. I will communicate with the class as soon as is technically possible.

2. This course is not self-paced. It is your responsibility to read and analyze the information in each module, participate in the module activity, and complete any pertinent assignments by the due date(s). This course demands a high degree of student involvement. You are not sitting in a lecture hall listening to me three hours each week. Instead, you must discipline yourself to (a) devote the time you normally would spend in the classroom to being logged in to this online class and digesting the week's material, and (b) study a respectable amount in addition to the "in-class" time. Most universities recommend that for every hour a student spends learning in the classroom, they spend three hours studying outside of class. If you were taking this class in a face-to-face format, you would be expected to spend 3 hours per week in lab AND, as this is effectively a one-hour course, you would expect to spend roughly three hours a week OUTSIDE OF CLASS reading, analyzing, synthesizing, studying, and completing assignments. This equates to, minimally, 6 hours per week of course engagement. As this is an asynchronous online class, you can expect to spend, minimally, the same 6 hours per week studying material, preparing lab reports, etc. And this is JUST FOR THE "LAB" PORTION OF BIOL 3453 – the co-requisite lecture will require additional effort. Online learning is far more active than traditional lectures and requires much more self-discipline to put in the time necessary to succeed.

3. You should be logging onto D2L on a regular basis. In addition to the detailed course calendar, all assignments are entered into the D2L calendar.

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4. **Due dates are firm.** Late assignments are not accepted other than as stipulated in the “Grading” section. The only exceptions are in the event of a natural disaster and / or an SFA closing.

**E-mail Policy:**

I will be periodically communicating with you via e-mail. I use your OFFICIAL SFA E-MAIL ADDRESS FOR THIS PURPOSE. It is your responsibility to check your e-mail regularly and, if you have your SFA account forwarded to some secondary account, to be certain this is not full and can receive messages (the University policy regarding e-mail can be read here). As per the referenced SFA policy, D2L email IS NOT CONSIDERED OFFICIAL. If you wish me to see your email AND respond, DO NOT USE THE D2L e-mail function – ALWAYS USE YOUR OFFICIAL SFA address. As this is an online course, you will probably be communicating with me via e-mail. For efficient responses, please follow the “e-mail etiquette” suggestions below:

- **Include a subject line:** Include your course number, section, and reason for reaching out (for example, PSYC-2301-53240: Help with Assignment 3).
- **Be courteous:** Begin your email with a greeting that addresses your instructor respectfully and professionally, such as "Dear Mr. Smith" or "Hi Dr. Jones."
- **Provide detail:** Be specific about why you are reaching out and what you are having problems with. For example, "in section 6.1.2 Neurons, I’m not clear on…". E-mail should be considered a professional form of communication – you should use proper grammar and spelling.
- **Close with your full name:** After your message, end with a closing and signature, such as "Sincerely, Jane Doe" or "Thanks, John Doe."
- **A response may take time:** I will try to get back quickly, but don’t expect a response within a few minutes. It can take up to 24 hours (or more in some cases) for an instructor to respond. If you need a response ON THE SAME DAY, your best option is to attend the virtual office hours on ZOOM. If e-mails arrive during office hours, I will do my best to answer them on the same day as well. For e-mails that arrive AFTER office hours, it may take 24 hours or more for a response; this is especially true if you send the e-mail in the evening, on weekends, or on a holiday. I do not check e-mail in the evenings, weekends, or on holidays.

**Class Attendance**

You can find SFA’s official policy regarding absences [here](#). Below is a relevant excerpt:

“**At the discretion of the instructor, students may be excused from attendance for reasons such as health, family emergencies, or student participation in approved university-sponsored events. When possible, students should notify their instructors in advance about absences. Students are responsible for providing documentation in a timely manner to the instructor for each absence. The instructor determines whether such documentation is satisfactory.**”

“**Students with accepted excuses may be permitted to make up work for absences equaling no more than 15% of the scheduled course meeting time for the term, depending on the nature of the missed work. The timeline for completing make-up work will be determined by the instructor.**”

**ALL REQUESTS FOR AN EXCUSED ABSENCE MUST BE MADE THROUGH THE SFASU DEAN OF STUDENTS WEBSITE (as per new UT policy). You may navigate to: https://www.sfasu.edu/deanofstudents/about/welcome. Once there, select “Student Outreach & Support” and then “Notify Faculty of Absence”. As per new policy, you will be required to provide documentation when requesting absence notification. If your documentation or reason for absence is accepted by this office, they will in turn notify me. There are time limits to this process so, if you miss for any reason, be sure to submit a request in a timely fashion. UNDERSTAND, EVEN IF THE OFFICE APPROVES YOUR REQUEST, IT IS STILL AT THE DISCRETION OF THE FACULTY TO ACCEPT YOUR REQUEST FOR MAKE UP WORK. IF THIS OFFICE DOES NOT APPROVE YOUR REQUEST FOR NOTIFICATION, NO ACCOMMODATION WILL BE MADE. In some cases of illness (with the exception of a COVID diagnosis), the Dean of Students will not issue an absence notification. In this case, it is up to you to provide documentation of the illness from a medical provider.”
The pertinent applications in BIOL 3053 are:

- Assignments are open for ONE WEEK before being due; If you know you are going to be absent on a due date for a University sponsored outing, TURN IN THE ASSIGNMENT EARLY;

- Being ill on the day an assignment is due IS NOT AN EXCUSED ABSENCE, as you had a week to complete the assignment. Don’t wait till the last minute to turn in assignments; for make-up work to be allowed, you must proceed through the procedure detailed above. To be accepted, your excused absence, as approved by the Dean of Students (or documented illness from a medical provider), will have to cover the complete time period during which the laboratory exercise was open;

- DUE DATES ARE FIRM AND WON'T, EXCEPT IN THE CASE OF A NATURAL DISASTER OR SCHOOL CLOSING, BE EXTENDED. Again, late work will be accepted as stipulated in the “Grading” section.

- You will be permitted to make up a maximum of 15% of GRADED ASSIGNMENTS (as per policy above). This equates to 3 worksheets. Missed work beyond this will be recorded as “0”s. It will be your responsibility to provide me with documentation to support an excused absence – it will have to substantiate your absence from the University for the entire week(s) during which the assignment was open.

**Academic Integrity (4.1)**

The Code of Student Conduct and Academic Integrity outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.

Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.

**Withheld Grades Semester Grades Policy (5.5)**

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the coursework because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future
terms the WH will automatically become an F and will be counted as a repeated course to compute the grade point average. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.

Students with Disabilities

To obtain disability-related accommodations, alternate formats, and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services promptly may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

TEA Statement

This course meets educator preparation standards for one or more certification programs; a complete listing of all the educator preparation standards this course meets can be found at: https://sfasu.edu/docs/jacksteach/jacksteach-standards-alignment-chart.xlsx

Student Wellness and Well-Being

SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc.

If you are experiencing concerns, seeking help, SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

On-campus Resources:
The Dean of Students Office (Rusk Building, 3rd floor lobby)
www.sfasu.edu/deanofstudents
936.468.7249
dos@sfasu.edu

SFA Human Services Counseling Clinic Human Services, Room 202
www.sfasu.edu/humanservices/139.asp
936.468.1041

The Health and Wellness Hub “The Hub”
Location: corner of E. College and Raguet St.

To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:

- Health Services
- Counseling Services
- Student Outreach and Support
- Food Pantry
- Wellness Coaching
- Alcohol and Other Drug Education
www.sfasu.edu/thehub
936.468.4008
thehub@sfasu.edu

Crisis Resources:
- Burke 24-hour crisis line: 1.800.392.8343
- National Suicide Crisis Prevention: 9-8-8
- Suicide Prevention Lifeline: 1.800.273.TALK (8255)
- johCrisis Text Line: Text HELLO to 741-741