Alignment Grid for BIO 364 Techniques in Cancer Biology

Learning Objective Students will be able to:	Taxonomy Level/Category	Formative Assessments	Summative Assessment
summarize the prevailing theories of cancer development and treatment	Understanding	Summary paragraphs on research papers (3/sem) Discussion board on redefining cancer	Questions on 2 exams that ask the students to choose appropriate phrases
use specific terms appropriately as they relate to cancer research/treatment/diagnosis	Remembering	Anticipatory set vocabulary lists Laboratory activity summary assignment Discussion board on describing cancer to a patient	Lab reports, group oral presentation, final paper
describe a least 4 of the major signaling pathways central to the development of cancer that are presented in the course	Understanding	Research paper summaries, 3 during semester	Multiple choice question on the exam in which students choose the best term or phrase, final paper on group project
predict the effect of specific mutations in four major pathways	Apply	Discussion board on pathways to cancer	Group worksheet assignment
construct a model of cancer that incorporates at least two of the major signaling pathways presented in the course	Create	Concept maps Discussion board on redefining cancer	None, maybe final presentation
differentiate between interventions that prevent cancer and interventions that treat cancer	Analysis	Class discussion worksheets in recitation Research paper summaries	Exam questions
explain at least one type of experiment used in cancer research	Understanding	Lab activity summary sheet Post-hoc flow charts	Lab report (2), lab meeting presentations (3) final presentation
appraise data from an research paper for relevance and significance	Evaluation	Lab discussion worksheets	Lab quiz (2), lab meeting presentations (3)
read and summarize a research paper in cancer biology	Evaluation	Lab discussion worksheets	Final presentations and final paper
recognize and use safe practices in the laboratory	Understanding and application	Cell culture supervision	Safety quiz

Objective	Taxonomy level	Formative Assessment	Summative Assessment
Students will recognize and use safe practices in the laboratory	Understanding and application	Cell culture supervision	Safety quiz
explain at least one type of experiment used in cancer research		Research paper summary of single figure(Snider)	Research paper quiz (Snider)
differentiate between interventions that prevent cancer and interventions that treat cancer			Research paper summary (NFkB)
summarize the prevailing theories of cancer development and treatment		Research paper summary, indiv	Research paper quiz (individ)
Collect, organize and analyze data		Equipment worksheet	Protein assay graph and legend
Choose relevant information from commercial sources		ATCC worksheet	Antibody summary
Evaluate experimental methods		Inept investigator activity	
Organize and present their conclusions drawn from their experimental data		Immunoassay presentation	Immunoassay analysis paper
Describe procedures used in the laboratory and identify significant steps in the procedure		Flow charts post-hoc	
Appraise data from an research paper for relevance and significance and compare the published results to their own			NFkB lab report
Appraise data from an research paper for relevance and significance		Lab meeting presentation	Final presentation

Summarize prevailing theories of cancer development/treatment		Lab meeting presentation	Final presentation
			Final paper
			Exam 1
			Exam 2
Describe prevailing theories in cancer research		Anticipatory set vocab lists	