

HIGHER EDUCATION COORDINATING BOARD
SCIENCE COLLEGE READINESS DEFINITIONS

PRELIMINARY

JANUARY 2007

STUDENT ATTRIBUTES

The student attributes common to English, Science and Math college readiness are in black type; the attributes applicable only to science college readiness are in *blue italic* type.

The personal attributes described below are essential for success in entry level college courses.

COMPONENT	EVIDENCE of LEARNING
Demonstrate intellectual engagement.	<ul style="list-style-type: none"> • Perceive that every discipline is a way of understanding and not just a sequence or compilation of discrete information. • Develop intellectual curiosity: actively explore new ideas, posing questions about meaning, significance, and implications <i>by designing and conducting scientific investigations and engaging in scientific inquiry.</i> • Demonstrate curiosity, honesty, cooperation and skepticism in scientific investigations. • Recognize one's own assumptions, take risks and be challenged as part of the learning process. • Recognize and interpret patterns – as well as variation from previously learned or observed patterns – in data, diagrams, symbols, and words. • Question, integrate, synthesize and connect new ideas to previously learned concepts. • Actively seek to use the resources, tools, <i>technologies</i> and strategies necessary for effective learning.
Take responsibility for own learning.	<ul style="list-style-type: none"> • Engage in self reflection and self evaluation (i.e. examine and learn from errors, seek help when needed and understand that failure is part of the learning process). • Proactively seek input and feedback on ideas and work. • Seek help addressing issues outside the classroom that may interfere with the learning process. • Participate in class sessions and when absent, seek ways to learn the material covered in class. • Devote the time necessary to be successful and plan ahead to meet deadlines. • Conscientiously prepare work assigned for class (for example on time, neatly presented, and taken seriously). • Use effective strategies to learn independently. • Take advantage of available resources - class time, notes, textbook, assignments, tutoring services, supplemental materials, instructor, peers, equipment and electronic resources. • Participate effectively in groups to discuss or complete an assignment. • Contribute to and benefit from group problem-solving activities.

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Persevere through the learning process.	<ul style="list-style-type: none"> • Demonstrate sustained effort as an important component of successful learning. • Successfully complete tasks that require organizing and applying multiple steps, concepts or techniques, and which may be time-consuming. • <i>Persist in working on problems that require time and thought and demonstrate original critical thinking.</i> • <i>Recognize when an approach is unproductive and make logical modifications and/or switch to another approach.</i> • Accept ambiguity as part of the learning process.
Pay attention to detail.	<ul style="list-style-type: none"> • Correctly and independently follow oral and written directions. • Work toward precision in the use of discipline-specific language and conventions. • Review or edit work prior to submission.
Demonstrate ethical behavior.	<ul style="list-style-type: none"> • Treat others with respect. • <i>Demonstrate respect for different cultural perspectives.</i> • <i>Recognize that plagiarism is dishonest and unethical.</i> • <i>Respect the intellectual and creative work of others by refraining from academically dishonest behaviors, such as copying another's assignment, copying and pasting from the internet, or using sources without attribution.</i> • <i>Evaluate the intended and unintended consequences of one's actions on people, society and the environment prior to making decisions.</i>
Communicate effectively across a variety of audiences and purposes.	<ul style="list-style-type: none"> • Choose language appropriate to the academic, social and cultural conventions of the particular audience. • Contribute relevant ideas, clear illustrations and clarifying examples. • Express disagreement in ways that permit continued dialogue.
<i>Effectively read, parse, and organize information presented in questions/problems in order to formulate solutions.</i>	<ul style="list-style-type: none"> • <i>Employ reading strategies appropriate to scientific literature.</i> • <i>Identify the key components of a question to determine what is being asked.</i> • <i>Recognize that similar problems may be presented differently and that different problems may, at first, appear similar.</i> • <i>Apply discipline-specific knowledge in new situations or contexts</i> • <i>Generate possible approaches to unfamiliar problems.</i> • <i>Develop a solution to a complex problem that combines multiple concepts.</i>