

Scientific Research and Design 2024 - 2025

Ms. Rancifer

Room: 133

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I. Course Description

This course focuses on developing a career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

The Science, Technology, Engineering, and Mathematics (STEM) Career Cluster focuses on planning, managing, and providing scientific research and professional and technical services, including laboratory and testing services, and research and development services.

Scientific Research and Design is a broad-based course designed to allow districts and schools considerable flexibility to develop local curriculum to supplement any program of study or coherent sequence. The course has the components of any rigorous scientific or engineering program of study from the problem identification, investigation design, data collection, data analysis, formulation, and presentation of the conclusions.

All of these components are integrated with the career and technical education emphasis of helping students gain entry-level employment in high-skill, high-wage jobs and/or continue their education

II. The aims and objectives of the course are:

HAIS/HISD expectations

- To conduct laboratory and field investigations using safe, environmentally appropriate, and ethical practices
- Use scientific methods and equipment during laboratory and field investigations
- Use critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom.

Know:

- demonstrate the use of content, technical concepts, and vocabulary when analyzing information and following directions;
- employ verbal skills when obtaining and conveying information;
- use informational texts, scientific websites, and technical materials to review and apply information sources for occupational tasks;
- evaluate the reliability of information from informational texts, scientific websites, and technical materials and resources;
- interpret verbal and nonverbal cues and behaviors to enhance communication;
- apply active listening skills to obtain and clarify information;
- use academic skills to facilitate effective written and oral communication

III. Role of the areas of interaction in Scientific Research and Development

The areas of interaction will be at the core of teaching scientific research and development at the Houston Academy of International Studies. The science department will map the areas of interaction for all units taught during the school year.

IV. Methodology

Group activities, laboratory activities, demonstration, and guided practice.

V. Methods of assessment

- Observation
- Class discussion
- Lab Notebooks
- Lab activities
- Exams
- Investigative report

VI. Grading policy

A. Formative Assessment	50 %
B. Summative Assessment	40 %
C. Self Evaluation	10 %

VII. Late Work/ Missing Assignments

- Please Do Not wait to turn in missing assignments. If late, students will receive 10% off their grade per class period. Assignments will only be accepted until the 5th class period.

VIII. Conduct

- In this classroom, we must and will treat all others with great respect. There will be consequences for those that do not.