

SPACE MEDICINE

I. Biology

Development of superior plants through use of hormones and growth substances.

Development of the re-useable products from organic waste.

Effect of zero gravity on plant growth.

Photosynthetic gas exchange.

Gravity independent gas exchange.

Algae selection.

Nutritional assay of algae.

Illumination methods.

II. Physiology

1. Physiological effects of prolonged exposure to artificial atmospheres.
2. Composition of artificial atmospheres.
3. Toxicology of artificial atmospheres (ionized air, toxic gases and vapors from equipment, toxicity of gases of biologic origin, etc).
4. Atmospheric Control.
5. Sealed cabin environments.

III. Psychology, Human Engineering, and Behavior Systems

1. Theoretical development and systems design of synthetic behavior systems.
2. Human engineering research on design of equipment and operator performance characteristics in man-machine systems.
3. Effects of space environment characteristics upon human performance.
4. Mission development, task analysis, and crew work regimes for space missions.