

# Term Project Expectations

- Perform the preliminary design of the elements of a crewed space systems with direct impact on humans
- Pressurized volume(s)
- Life support
- Habitat design and habitability
- Mission support (e.g., EVA)

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UNIVERSITY OF  
MARYLAND

**Psychosocial Issues in Space Flight**  
**ENAE 697 - Space Human Factors and Life Support**

# Evaluation Criteria

- Pressurized volume
  - Size and shape
  - Rationale for choice of interior volume
  - Single vs. multiple modules
- Life support systems
  - Atmosphere design (total pressure / % O<sub>2</sub>)
  - Completeness (e.g., air revitalization / water reclamation / thermal / nutrition / waste management)
  - Trade studies on candidate systems
  - Equivalent systems mass analysis
  - Required mass / volume / power of each system



# Evaluation Criteria

- Habitat design
  - Interior layout
  - Utilization- based layout (e.g., quiet/ noisy, clean/ dirty)
  - Safety (nominal and contingency egress)
- Logistics
  - Consumables resupply (O<sub>2</sub>/N<sub>2</sub>)
  - Internal/ external stowage
- EVA support
  - Egress (e.g., airlock/ suitport, nominal/ contingency, surface accessibility)
  - Denitrogenation analysis for safe egress in 4 psi suit
  - Suit support (e.g., ingress/ egress, servicing, recharge)



# Evaluation Criteria

- Windows
  - Window size/number/placement
  - Sight line analysis for critical functions (e.g., driving windows)
- CAD images
  - External dimensioned three-view (top/side/front)
  - Interior layouts
  - “Glamour shot(s)” – rendering of overall system (use notional images of items not covered in this class - e.g., wheels and suspension for rover)

