Course Outline  
VS-511-Arch  
Instructor: Samar Salim

1. **Introduction**  
   Green Architecture as an APPROACH to architectural styles

2. **Sustainability and the Building Industry**  
   Green Roofs  
   Storm water Retention  
   Reduction of heat loads to the internal spaces of buildings  
   Reduction of CO2  
   Providing habitat for wildlife

3. **Current Trends and Approaches in Green Architecture**  
   Sustainable site Design and Ecological Restoration  
   Energy Efficiency  
   Water Conservation  
   Conservation of building materials and resources  
   Indoor environmental quality of buildings

4. **Building Life Cycle Assessment**

5. **Effective Green Architecture Practice**  
   Sustainable Site Design and Ecological Restoration  
   Goals to minimize the impact on the land and ecosystems  
   Efficient Use of energy, water, and natural resources  
   How to decrease transportation impacts  
   Study of climatic conditions / The Multivariate Condition  
   The Comfort Zone  
   Solar Geometry  
   Designing to the Comfort Zone vs. Comfort Point
6. The Genzyme Center Analysis – Case study

7. Student Presentations (Short) – Their own selected projects

8. Energy Efficiency Techniques

   Energy efficiency techniques
   What is Passive Design?
   The Tiered Approach to Design
   Solar Chimney
   Evaporative cooling
   Shading devices
   Energy-Conserving Landscapes

   Renewable Energy Sources:
   Solar
   Biomass
   Water
   Wind
   Geothermal
   Net Zero Energy

9. Materials
   Conservation of Building Materials and Resources
   Recycling materials for future use
   Reclaiming existing materials:
   Adapting and reusing materials in renovation projects to reduce material

10. Ventilation / Daylight

    Indoor Environmental Quality of Buildings
    Sick Building Syndrome:
    Personal Comfort / Individual Thermal comfort
    Interior access to sunlight and views
    Lighting – Sunlight vs Daylight
11. Water and Sanitation
   Water Conservation
   Rainwater: Water collectors
   Gray water

12. Project Tour / Documentary / Q&A

13. Organizations / Certifications
   USGBC (United States Green Building Council)
   LEED, (Leadership in Energy and Environmental Design)
   LEED v1
   LEED v2
   Tiers of LEED
   Certified, Silver, Gold, Platinum
   GBCI (Green Building Certification Institute)
   WorldGBC

14. Project Working Session 1 – Group Assignment
   Design a Living Building Challenge:
   "A building designed and constructed as elegantly and efficiently as a flower."
   Using the following notes
   Site: Restoring a healthy coexistence with nature.
   Water: Creating water-independent sites
   Energy: Relying only on current solar income
   Health: Maximizing physical and psychological health
   Materials: Endorsing products that are safe for all species through time
   Equity: Supporting a just, equitable world
   Beauty: Celebrating design that creates transformative change.

15. Project Working Session 2 – Group Assignment

16. Final Presentations

   GRADING:
   Assignment = 40 Marks, Final Assignment = 30 Marks, Final Exam = 30 Marks