Student-Centered Community-Based Service Learning: Connecting Scholarship, Teaching and Service

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HOW WE TEACH AND HOW WE LEARN

• Imitation and mimicry – mama.....
• Sensually
• Rote Recital – Learning our A, B C’s and 1, 2, 3’s
• Experiential and Interactive

5 Senses
- Sight
- Hearing
- Taste
- Touch
- Smell
HOW WE TEACH AND HOW WE LEARN

• Lectures – You talk, they listen: the ol’ chalk and talk
  – Problems sets
  – Reading and Studying

• Interactive Learning
  – Activities
  – Questions, Answers and exploration
HOW WE TEACH AND HOW WE LEARN

• Problem Based Learning
  – Do and learn
  – Inter- and multi-disciplinary approaches

• Group and Team based Learning
  – Do it together and learn more
HOW WE TEACH AND HOW WE LEARN

• Field Based Learning – Taking Teaching and learning to the field
• Service Learning – Taking Teaching and Learning to do Good
Howard University Project on Appropriate Technology – Study Tour
Havana, Cuba, March 15 – 26, 2003
Field Trips and Site Visits

• Museum of the Revolution
• Community Environment Project
• University of Havana
  – Dept of Mathematics
• ISPJAE/CUJAE
• Urban Agricult. Coop.
• Sugar Mill
• Former Head of Center for Genetic Engineering and Biotechnology
Institut Superior Polytechnica Y Arquitectura, Engineering

- Entrance Examination
- Departments
  - Architecture and Civil, Electrical, Industrial, Chemical and Mechanical Engineering
- Students
  - 4500 Undergrads
  - 23,000 Graduates
  - 3,000 M.S./PhD
  - 379 Foreign Students: 45 countries, all scholarships
- Curricular highlights
  - Voluntary projects
  - Taking the University outside the University’s walls
  - Work practice focuses on real problems
  - Final Design Project Community Based
  - CUJAE Intranet: Curriculum and syllabi are all completely on-line.
DESIGN AND IMPLEMENTATION OF A PV BASED SOLAR ENERGY SYSTEM FOR A REMOTE FLUX TOWER AND A RURAL COMMUNITY IN SENEGAL

*John Tharakan, Mandy Mitchell, Janee Moore, Denayja Boone and ²Greg Jenkins.
Department of Chemical Engineering and ²Physics, Howard University, Washington, DC USA
Kawasara, Senegal – Site Installation Planning
Material Sourcing – Dakar Iron, Steel and Construction Hardware Market
Choimim Community Project (Western Kenya) – This partnership with the Nandi Village will involve EWB students in the construction of housing facilities for an orphanage that hosts children infected with HIV/AIDS; the project will also focus on the development of educational programs in nutrition, health and psychosocial areas and also work to develop vocational training for these orphans and vulnerable children. Faculty advisor: Dr. John Tharakan (ChE)
# Engineer’s Without Border’s Nandi Village, Kenya Project Team

<table>
<thead>
<tr>
<th>Name</th>
<th>Major/Classification</th>
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<tbody>
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Assessment of Community Needs - Areas of Need and Prioritization

• Energy
  – Extension of Grid
  – Recommendation for PV Solar and Wind
• Water
  – Quality
  – Accessibility
  – Availability
• Health
  – Medicines and medical supplies
  – Clinic and Hospital
• Education
  – Computers – Cyber café
  – Books and School supplies
• Environment
  – Waste Management
• Facilities
  – Additional School rooms
  – Permanent Kitchen
Nandi Village, Kenya – Renovation of School Kitchen Facility: The old kitchen
Nandi Village, Kenya –
Renovation of School Kitchen Facility: The New kitchen – ventilation and extra space; major reduction in smokiness.
Nandi Village, Kenya – Making plaster to finish second orphanage house – Service learning
Nandi Village, Kenya – Plastering second orphan house wall
Nandi Village, Kenya – Painting the floor in the main Guest house – an ideal site for service learning
Nandi Village, Kenya – Addressing the water problem: Water sampling and analysis
Nandi Village, Kenya – Addressing the waste problem

Open Incineration

Open Dumping

Recommendations:
Collection and segregation
Recycling
Recovery – Biogas production
Moi University in Eldoret, Kenya
QUESTIONS??