Howard University

Initial Evaluation of The WSU Engineering MathematicsModel At HU

Mohamed F. Chouikha, PhD
Indianapolis, IN

6-17-2014



Howard University is an extensive research private historically black university that was established in 1867

Howard University
Schools & Colleges

- ***College of Arts and Sciences***
- *School of Business*
- *School of Communications*
- *School of Education*
- ***College of Engineering, Architecture, and Computer Sciences***
- *College of Nursing and Allied Health Sciences*
- *College of Dentistry*
- *School of Divinity*
- *School of Law*
- *College of Medicine*
- *College of Pharmacy*
- *Graduate School of Arts and Sciences*
- *School of Social Work*

Howard University



College of Engineering, Architecture and Computer Sciences

College of Engineering, Architecture, & Computer Sciences

Mission

- ***Produce outstanding graduates, and generate new knowledge***

- ***Development of individuals who will become world leaders***

Today

- ***Departments***

  Architecture - B,M

  Chemical Engineering - B,M,I

  Civil Engineering - B,M

  Electrical Engineering - B,M,D,I

  Computer Engineering

  Mechanical Engineering - B.M,D,I

  Systems & Computer Sciences - B,M

College of Engineering, Architecture, & Computer Sciences

Today

Enrollment (typical)

500 Undergraduates Students

80 Graduate Students

180 EE/CpE

(AA Student population upper 80%)

Electrical and Computer Engineering Programs

Undergraduate Programs

- Two bachelor degrees:
- **Computer Engineering (CpE)**
  - Started in 2002
  - 4 year program (120 credits)
  - **Electrical Engineering**
  - 4 year program (120 credits)

Structure of the Undergraduate Curriculum

Basic General –
(Math, Physics, Chemistry, Programming, etc..)

Math lab | **Engineering Math** ← FOCUS

Fundamentals EE/ECE -
(circuits, electronics, Digital systems , Emag, Signals and Systems etc…)

Elective and advanced EE/CpE
(capstone courses, research experience for undergrad)

Key characteristics : Hands –on : lecture+ lab (Mobile studio)

The Initial Implementation SP 14



The Initial Implementation

Spring 2014:

EECE-160

- Engineering Math (3Cr)
- Meet 2X (80 min/session)
- Spring Semester course (same as Fundamentals of Circuit Theory EECE-203)
- No co/pre requisite
- Offered first time
- Get students ready for EE and CpE courses

The Initial Implementation (continues)

14 Students (Sophomore)

- EECE-203 and EECE-160
- No background in Diff. , Complex numbers etc…
- Calculus I & Calculus II ? (3)

Course

- Lecture/Recitation
- Weekly Homework assignment
- In class quizzes (participation)
- 3 exams (one hour each) and a final exam

The Initial Implementation (continues)

Course content

- covers almost the material provided by WSU (not in the same order)

- Use the Textbook (last three weeks of the semester)

Result (?)

- 13 passed (A-D), 1 dropped EECE-180

- 11 also passed EECE-203 (A-D)

- 1 Student (took too many credits)

Assessment (None) but student opinion (mostly positive) - Liked the course and instructor,

- Helped with the EECE-203

Next Steps

Department Level AY 14-15

- Offer EECE-203 and EECE-160 in AY 14-15
- Revise content to fit program requirement
- Calculus Requirement (No but advisor opinion is important)
- Assessment

College /University level (not earlier than AY 15-16)

Discussion - Physics requirement (Deans)

- Intro. to engineering I or II

(Engineering Chairs and curriculum Cmtes)

Implementation

THANK YOU