

SPIRIT Summer Institute 2008

Revisions as of July 16, 2008

Blue is CEEN, Red is Education, Purple is Both

Day 1 Monday, July 7, 2008

- 0830 Coffee and Donuts
 Surveys given as people enter (BS/JW)
 Distribution of Temporary Parking Permits (BS/JW)
- 0845 Welcome Winnie Callahan, executive director PKI
- 9:00 Workshop Objectives, Responsibilities and Introduction
- 0915 Comments on Surveys, Questionnaires, Release Forms (NG)
 Surveys retrieved (BS/JW)
- 0930 The State of Engineering Education (BC)
 "Did You Know" video
- 1015 Break/Housekeeping – refreshments, restroom locations, photographs (SE),
phones, etc. (BC)
- 1030 Slide show - CEENBoT and CEEN (RDS)
 Demo of CEENBoT (Ben Barenz)
 What teachers should know about the CEENBoT? (RDS)
 How does the CEENBoT work?
 What are the different parts of a CEENBoT?
 What are the important characteristics of a CEENBoT?
- 1130 Lunch (Scott Conference Center) (PKI sponsored)
- 1230 “Ramp Demonstration” for CEENBoT Lessons Ideas (BS/JW)
 (Participants verbally contribute to ideas)
- 1330 Hands-On (AG/Engineering Staff)
 Soldering 101 – Which end is hot? (AG)
 Solder a connection (PKI 305/311)
 Battery Tester Assembly and Experimentation
- 1530 Adjourn (directly from Labs)

===== Mike Timms Schedule for Monday, July 7th =====

- 18:30 Neal Picks-Up Mike at Hotel
- 19:00 Dinner at Rick’s Boatyard Café
 (SPIRIT Education Team / CEEN as desired)

Day 2 Tuesday, July 8, 2008

- 0830 Announcements (BC/NG/HD) PKI 252 all morning
 Distribution of participant photos (SE)
- 0900 Participant Responsibilities for Lesson Creation / Timeline (NG)
 Lesson Brainstorming Activity
- 0945 Using an engineering notebook (HD)
 (distribution of engineering notebooks)
- 1000 Break
- 1015 Introduction to Engineering (HD/Engineering Faculty)
 Reflections: What is Engineering?
 Who cares?
- 1100 Breakout (Observations/Questions) (HD)
 What has engineering most affected about your day so far today?
 How many computers have you used today?
- 1130 Lunch
- 1230 What teachers should know about the CEENBoT (RDS)
 Resistors, Capacitors, Color Codes, Using DMM
- 1315 Hands-On (RDS/HD) (PKI 252)
 Measuring Resistance and Capacitance with the DMM
 Distribution of materials and parts inventory (KT) PKI 343
 CEENBoT kits
 Toolkits
 Notebooks/Articles (notes (schematics (RDS), assembly
 instructions (RDS), engr profession (HD), battery tester))
- Assemble chassis (RDS/HD/KT) PKI 305/311
- 1530 Adjourn (directly from Labs)

===== **Mike Timms Schedule for Tuesday, July 8th** =====

- 08:30 Mike Observes Morning Activities / Selected Interviews of SPIRIT “Stars”
- 10:30 Sara Bowen (Star) Interview
- 11:30 Lunch
- 12:30 Education Team Brainstorming (SPIRIT 2.0 Cyberinfrastructure)
- 14:30 Education Team Brainstorming (SPIRIT 2.0 Assessment Strategies)
- 16:00 Adjourn
 Mike has free evening

Day 3 Wednesday, July 9, 2008

- 0830 Welcome for the Day (BC/NG/HD and faculty)
- 0900 Lesson development requirements review/ graduate credit options (NG/BS)
Sample Lesson Overview (NG/BS/BG)
- 0930 The scientific method and the Engineering Process (HD) (PKI 252)
Problem identification, Problem definition, Listing of constraints
Brainstorming, Solution alternatives, Means/methods, ITERATION
- 1015 Da Vinci's Lost Robots (HD) (PKI 252)
- 1030 Break
- 1100 Simulation (in PKI 260) (RDS)
- 1200 Lunch
- 1300 Hands-on:
Assembly of sensor board and start of control board (PKI 305/311)
- 1530 Adjourn (adjourn directly from labs)

===== Mike Timms Schedule Wednesday July 9th =====

- 08:30 Mike Observes Morning Activities /Selected Interviews of SPIRIT Stars
- 09:00 Jessica Sledge Interview (SPIRIT Star)
- 10:30 Mel Mays Interview (SPIRIT Star)
- 12:00 Lunch
- 13:00 SPIRIT Team Discussion (CAESL Conference Possibilities / Plans)
- 14:00 Education Team / IS&T Brainstorming (Jerry Wagner Simulation Presentation)
- 16:00 Adjourn
Mike has free evening

Day 4 Thursday, July 10, 2008

- 0830 Welcome for the Day (BC/NG/HD and faculty)
- 0900 AEIOU Lesson Format (NG/BG/EO/Education Team)
Pocket Mod Demonstration
Lesson Writing Samples
- 0945 A Typical Day in Engineering: What do engineers do? (HD)
The morning meeting: engineering work is teamwork.
Brainstorming session
Engineering logbook
Estimation and hand calculations
Computer usage
- 1030 Break
- 1100 Understanding electrical motors (AG)
- 1130 Measuring parameters / motors (HD)
- 1200 Lunch
- 1300 Hands-on:
Continue assembly of Control Board and start chassis assembly.
- 1530 Adjourn (adjourn directly from labs)
- 1600 SPIRIT Staff Meeting (Robotics Competition brainstorming)

===== **Mike Timms Schedule Thursday July 10th** =====

- 08:30 Mike Observes Morning Activities / Selected Interviews of SPIRIT “Stars”
- 10:30 Jack Northrup Interview
- 12:00 Lunch
- 13:00 SPIRIT Education Team Discussions (Wrap-Up Conversation with Mike)
- 16:00 *Mike brought back to hotel as needed for flight*

Day 5 Friday, July 11, 2008 (includes morning/afternoon schedule swap)

0830 Welcome for the Day (BC/NG/HD and faculty)

0845 Poster Session on Expanding Your CEENBoT ideas (NG/Education Team)
Participants post their ideas on a poster

1015 Break

1030 Participants look at other posters and add their ideas (NG/Education Team)
(Participants move around the room with sticky notes)

1200 Lunch

1300 Finish assembly of CEENBoT and begin testing.

1530 Adjourn (adjourn directly from education activity)

Day 6 **Monday, July 14, 2008**

- 0830 Welcome for the Day (NG/HD and faculty)
Math/Science/Technology Standards distribution (NG)
Remind teachers of 5-minute sharing session on Friday
- 0845 Short Panel Presentation (Earlier Cohort Teachers / NG Moderates)
Name, Teaching Responsibilities, TekBot Experiences
- 0945 Engineering Design Tools (HD)
Objectives and Constraints
Scheduling
Technical Writing
- 1015 Breakout (Observations/Questions) (HD?)
Is engineering for everyone in the 21st century?
Who would be good at engineering?
- 1045 Break
- 1100 Reflections of a TekBot (Caleb Hogan - Westside)
- 1115 What teachers should know about the CEENBoT (HD)
Sensors, Light, Force
Sensors, Sound, Position
- 1200 Lunch
- 1300 Hands-On
Finish Chassis, Install PlayStation remote control.
- 1530 Adjourn (adjourn directly from labs)
- 1600 SPIRIT Staff Meeting?

Day 7 Tuesday, July 15, 2008

0830 Welcome for the Day (NG/HD and faculty)

0845 Robotics Websites and Resources (EO/JW)

1000 Break

1015 Robotics in the media presentation (HD/RDS)
"Did You Know" video and breakout
(Various movie/TV video segments/Great Robot Race)
Hand out R.U.R. books

1115 Breakout (Questions) (HD)
Where do you believe modern life and technology are taking us?
Will engineering activities help lead us toward an improved world?

1200 Lunch

1300 Hands-On – CEEN Lab Work on CEENBoTs
Completing needed modifications to CEENBoTs in Labs
Begin experimenting with the CEENBoT

1530 Adjourn (adjourn directly from labs)

Day 8 Wednesday, July 16, 2008

0830 Announcements (NG)

0845 “Snap Circuits” Demonstration and Practice (EO)

1045 Break

1100 Modern Engineering Constraints (HD)
Manufacturability, Affordability, Reliability, Sustainability, Quality

1130 Engineering Disciplines (HD)
Civil, Mechanical, Electrical, Chemical, Industrial, BioX

1200 Lunch

1300 Experimenting with your CEENBoT (NG)
(Teachers create various navigation exercises)
(Focus on navigating mazes, ramp exercises, springs, etc.)

(or individual technical assistance in lab as needed by some teachers)

1530 Adjourn (adjourn directly from experimentation exercise)

Day 9 Thursday, July 17, 2008

- 0830 Announcements
 Attendance check, making up sessions policies (NG)
- 0845 Other Robots Demonstration (JW/BS/NG)
 (Participants continue to contribute to ideas)
- 1000 Break
- 1030 Recruiting of Women and Minorities into Engineering (AG)
 Thoughts and Small Group Discussion
- 1100 Engineering Special Topic (HD)
- 1130 Tour of PKI and viewing of KUKA Robot (AG)
- 1200 Lunch
- 1300 Catch up Session for CEENBoTs
 • CEENBoT repair and troubleshooting
- 1300 Experiment with Other Robotics (JW/BS/NG)
 • General Lesson Writing / Presentation Assistance (NG/Education Team)
- 1530 Adjourn (adjourn directly from labs or action research)

Day 10 Friday, July 18, 2008

- 0830 Announcements (NG)
Introduction of Guests (Cohort1/Mike Timms/others)
- 0845 Teacher 5-Minute Presentations on Their Lesson Ideas
(Group Written Feedback and Suggestions)
- 1000 Break
- 1015 Teacher 5-Minute Presentations on Their Lesson Ideas
(Group Written Feedback and Suggestions)
- 1200 Lunch (Scott Conference Center) (PKI sponsored)
- 1300 Teacher 5-Minute Presentations on Their Lesson Ideas
(Group Written Feedback and Suggestions)
- 1400 Overview of SPIRIT Next Steps and Fall Activities
Closing Ceremonies (NG)
Group Picture (SE)
- 1530 Adjourn (Group Hug)