MnSGC Quadrotor Project – Year 1 Kickoff Agenda

Century College – Monday, October 13, 2014

9:00 – 9:15 in E2313

Welcome (Grebner), round-robin (advisor and team) introductions

9:15 – 9:25 in E2313

Overview of overall project (who is involved, underlying NASA goals and definition of “success,” talk about the quadcopter project: first look at theELEV-8 hardware, list of project steps (Flaten)

9:25 – 9:45 in E2313

General STEM motivational talk and why to pay attention to today’s lessons about CAD and soldering and 3D manufacturing and microcontrollers (Hanson)

9:45 – 9:50 in E2313

Break up into groups for rotations; do re-introductions in the rotation groups (Peterson, Seifert)

***Breakout session A in E2313***

*Soldering intro, practice with EC3 connectors, bullet connectors, and shrink wrap (instructed by Seifert, Peterson, Jones)*

***Breakout session B in E1371 (the “Fablab”)***

*3D printing and laser cutting; show Century equipment, discuss options/capabilities (instructed by Abel, Grebner, Hanson)*

***Breakout session C in E1375***

*Arduino microcontrollers and sensors; wiring, programming, demonstrations (instructed by Flaten, Highland, Wegner)*

10:00 – 10:50 Rotation #1 (see room numbers above)

11:00 – 11:50 Rotation #2 (see room numbers above)

12:00 – 12:20 in E2313

Lunch(Introduce Prof. Bill Garrard and TA Stephanie Wegner who will arrive during rotations)

12:30 – 1:20 (SolidWorks in E1731; AutoCAD Inventor in E1375)

CAD demo and instruction, SolidWorks and AutoCad Inventor sessions running concurrently (Abel and Grebner) all students hands-on using SolidWorks or AutoCAD Inventor

1:30 – 2:20 Rotation #3 (see room numbers above)

2:30 – 3:30 in E2313 (possibly partly outside in the courtyard)

Quadcopter fundamentals, quadcopter toys, RealFlight simulator, ELEV-8 demos. Introduce TA Alex Pratt when he arrives. Demonstrate a First Person View (FPV) system using a Parrot drone. Demonstrate a GPS/XBEE-enabled Arduino package. (Hanson, Wegner, Pratt)

3:30 – 3:45 in E2313

Lessons learned while building ELEV-8 kits (Wegner, Pratt, with Flaten, Hanson)

3:45 – 4:00 in E2313

Announcement of competition goals, review of tentative timeline (Jones, Highland)

4:00 – 4:30 in E2313

Wrap-up and handling questions – select dates and times for all-team and individual-team telecon/videocons (Flaten, Pratt, Wegner, all advisers)