

Resources for the 2017 Iowa FFA Agricultural Mechanics CDE
Iowa State University
AG 450 Farm
June 8, 2017

NOTE: This list is not exclusive to any other resources that you might find. An attempt was made to find as many resources and references as possible, especially those that are web-based. It is highly recommend that your team review the resources and information provided below.

1) Electrical Systems: Electrical Wiring

Skill:

Students will be expected to complete one of the switch diagrams posted on the Iowa FFA Agricultural Mechanics CDE webpage.

Problem-solving:

The problem-solving activities will be pulled from the following resources:

- 1) Agricultural Technical Systems and Mechanics. Koel, Mazur, Moniz, & Radcliff (2013). ATP Publishers, ISBN: 978-0-8269-3663-9
- 2) House wiring simplified 11th Edition or newer. F.M. Mix. Goodheart-Willcox, ISBN: 978-1-59070-902-
- 3) Wiring Handbook for Rural Facilities (MWPS-28, 3rd edition). Midwest Plan Service, Iowa State University, Ames, IA. (2006). <http://www.mwps.org/>
- 4) Electrical Applications for Agriculture. C.J. Bern and D.J. Olson, Wiley-Blackwell, ISBN-10: 0813821991 (2002).

2) Environmental and Natural Resource Systems: Soil and Water Management/Surveying

Skill:

Students will be expected to use surveying equipment to determine the slope and potential concrete needed for a potential building site.

Problem-solving:

The problem-solving activities will focus on land measurement and surveying equipment, and will be pulled from the following resources:

- 1) Landscape Surveying. Harry L. Field. (2004). Delmar Learning, ISBN: 1-4018-0961-8

2) Agricultural Technical Systems and Mechanics. Koel, Mazur, Moniz, & Radcliff (2013). ATP Publishers, ISBN: 978-0-8269-3663-9

3) Structural Systems: Concrete

Skill:

Students will be expected to use measuring tools, cordless power tools, and power saws. For reference, the following website may be helpful:

<http://www.doityourself.com/scat/handtools>

Problem-solving:

The problem-solving activities will be pulled from the following resource:

1) Agricultural Technical Systems and Mechanics. Koel, Mazur, Moniz, & Radcliff (2013). ATP Publishers, ISBN: 978-0-8269-3663-9

4) Machinery and Equipment Systems: Small Engines

Skill:

Students will be expected to identify, remove, inspect, and service small engine parts. The students will also need to be able to read and locate information regarding engine codes, part numbers, and engine specifications within an engine owner's or service manual. The manuals for the engines that the students will be working on will be posted on the Iowa FFA Agricultural Mechanics CDE webpage.

Problem-solving:

The problem-solving activities will be pulled from the following resources:

1) Agricultural Technical Systems and Mechanics. Koel, Mazur, Moniz, & Radcliff (2013). ATP Publishers, ISBN: 978-0-8269-3663-9

2) Small Gas Engines. Radcliff (2010). ATP Publishers, ISBN: ?

5) Metals and Welding: Arc Welding

Skill:

Students will be expected to lay out and perform a butt joint, lap joint, or a tee joint in the flat, vertical, or horizontal position using a 6011, 6013, or 7018 welding electrode.

Problem-solving:

The problem-solving activities will be pulled from the following resources:

1) Agricultural Technical Systems and Mechanics. Koel, Mazur, Moniz, & Radcliff (2013). ATP Publishers, ISBN: 978-0-8269-3663-9

2) Welding Skills. Monzi, B., & Miler, R. (2010). ATP Publishers, ISBN: 978-0-8269-2992-1

NOTE: Instructors can order free desk copies of ALL of the textbooks listed as resources, with the exception of the *Wiring Handbook for Rural Facilities*.