FACILITIES FOR
AGRICULTURAL SCIENCE & BUSINESS PROGRAMS

1. Classroom - 825 sq. ft. based upon 25 students @ 33 sq. ft.
   If plan to have computer stations in classroom area - add 300-400 sq. ft. for a total of 1125 sq. ft. plus science lab set-up and storage cabinets

2. Laboratory area/shop - 2,400 sq. ft. Based upon 20 students @ 120 sq. ft. If having an agricultural science laboratory area with bench type space, etc - add 43 sq. ft. per student.

3. Office/conference/research area - 350 sq. ft.

4. Storage - 400 sq. ft.

5. Greenhouse - Min. 1600 sq. ft.
   Primary greenhouse should be “hard surface house.” Need head house prep area and sales area in addition to the 1600 sq/ ft. growing space approximately 1150 sq. ft. Secondary greenhouse if needed: recommend two poly layers with air.

6. Land laboratory - 1 acre minimum – Nursery, turf research, etc.

Other learning/teaching areas:
   a. Aquaculture/hydroponics - 150 sq. ft. / student
      - Large, medium and small tanks
   b. Small animal - 30 sq. ft. / student
      - Research
   c. Food Science - 43 sq. ft. / student
      - Lab as above

Revised 1/23/07
LIST OF POTENTIAL EQUIPMENT/SUPPLIES
FOR AGRICULTURAL SCIENCE & BUSINESS

ANIMAL SCIENCE

ALS Lab Kit
Animal specimens from reputable sources
Aquaculture system - purchase complete or build your own
Backfat probe
Balling gun
Clippers
Cover slips
Drencher
Ear notcher
Ear punch
Filet knives
Fish tanks/aquariums
Grooming kit - Large & Small Animal
Hanging scale
Hog holder
Hoof rasp
Hoof pick/brush
Incubators
Light microscopes
Medicine droppers
Methylene blue/iodine stain
Microwave oven
Needle teeth clippers
Nylon animal syringes
Plastic gloves
Plastic aprons
PVC fittings to build student aquaculture research systems
PVC pipe
Scalpels
Scissors
Small animal cages
Stethoscope
Suture needles
Tail docker/emasculator
Video - microscope (if possible)
Water heaters for aquaculture tanks
Water test equipment
Water pumps, large tanks, biofilter materials
Waterers /feeders for small animals, birds, etc.

PLANT/SOIL SCIENCE
ALS Lab Kit
Calculators
Compound microscopes
County Soil Survey Manual
Crop seed samples
Dissection kits
DNA staining kit
Ear plugs
Eye dropper
Eye safety goggles
Hand-held GPS receiver
Hydrometer cylinder
Insect kits
Light microscopes and supplies
Magnifying glasses
Models
Monoliths trays
Particle masks
PH meter
Plant specimens
Plant cloning kit
Plant tissue test kits
Plastic or metal sieves
Rulers
Science lab equipment
Seed ID kits
Soil color charts
Soil samples
Soil probes
Soil augers
Soil sterilizer
Soil test kits
Soil monolith
Soil compaction tester
Triple beam scale
Video camera
Weed ID Kits
Wet Mount Slides & cover slips

Horticulture Science/Landscape Management Facilities
Classroom  Min-825 sq. ft. - if plan to do computer work with CAD design - need area - add 300-375 sq. ft. Total 1125-1120 sq. ft.

Conference/library/student research area with shelving, cabinets, etc. 
150 sq. ft. Min. - Rec. 240 sq. ft.

Shop/lab area for machine and equipment demo’s/storage - 1200 sq. ft. 
Small tool/chemicals/supplies storage - 400 sq. ft.

Primary Greenhouse Min. 1,600 sq. ft. 20 students @ 80 sq. ft.
“Hard surface house” The Greenhouse is a “growing plant” area!! Not for flats/pots, storage etc.

Headhouse prep area and customer sales area 1150 sq. ft. - in addition to the 1600 sq. ft. growing space

Shade/Lath house 1,000 sq. ft.

Cooler - Flowers/plant material for floral 100 sq. ft.

Secondary greenhouse for additional plants at different temperature levels 20 x 40, etc. 
- consider two poly layers with air

Land laboratory area 3 acres for trees, shrubs, flowers (perennial area)

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**HORTICULTURE SCIENCE - POSSIBLE EQUIPMENT/SUPPLIES**

*See Landscape Management list - select appropriately!*

- Anvil pruners
- Architect’s scale
- Atomist sprayers/fogger
- Balloon stuffing machine for floral displays
- Barrel seeder
- Bypass pruners
- Calipers
CD ROMs for ID, etc.
Circle template
Coco moss
Display racks
Drafting materials
Drip irrigation tubing, etc.
Fertilizer proportioners
First aid kit
Flats/trays
Floral wire
Floral wrap
Floral preservatives in packets
Floral pins
Floral scissors/snips
Floral stem cutter-regular
Floral stem cutter-underwater (cutting flowers such as roses, etc.)
Floral ribbons
Floral tape
Floral design pictures or photos
Foliage plants for ID
Fungicide
Garden trowels
Grafting knives
Graph paper
Hanging baskets
Hedge shears
Herbicides
Horticulture plant leaf ID items
Hose reels
Humidity level indicators
ID tags/stake/labels
Insecticides
Liquid fertilizers
Loppers & Lopping shears
Moisture testers
Oasis blocks

**LANDSCAPE MANAGEMENT**

Aerator
Blade for tractor
Box scraper
Chain saw
Computers
Edgers
Fertilizer spreaders
pH meter
Pik machine
Plant carts
Plant Hardiness zone maps
Pools for display
Pots-assorted sizes
Propagation chamber, mats
Pruning saws
Pump for displays
Rakes
Reference books
Rooting hormones/compounds
Safety equipments-goggles, clothing, respirator, gloves
Samples of fertilizers
Samples of soil amendments
Shovels
Slow release fertilizer
Software packages for landscape design
Soil sterilizer
Soil mixers
Soil carts
Soil test equipment
Soil bins
Soil test kit
Spades
Student Books
T-squares
Thermometers
Triangles
Utility carts
Videos
Water hoses
Wheelbarrows
Work tables - 30" x 60" - watch height (working)
Fogger
Garden rakes
Garden cart
Greens mower
Hand pruner
Hydro seeder
Landscaping software
Laser printer
Leaf rakes
Loppers
Mowers
Nursery hoes
Pick-up
Post-hole digger with 3 size augers
Shovels
Slit seeder
Sod cutter
Software packages for landscape design
Soil rake for tractor
Spades
Spading forks
Sprayers - pump and backpack
Telescoping pole tree pruner
Tractor with front end loader or Bobcat
Trailer
Tree dolly
Trencher (or good rental source)
Weed eater
Wheelbarrows

AG MECHANIZATION

12- 2 cable with ground
12- 3 cable with ground
20 amp breakers
200 amp service entrance panel
3-way switches
30 amp breakers
4-way switches
AC/DC welders
Air compressor and attachments
Airless sprayer
Antifreeze tester

Arc welding tables
Arc welding screens/curtains
Assorted files - flat, round, taper, mill
Back saw
Ball peen hammers
Band saw
Bar clamps
Battery charger
Battery charger
Belt sander
Blacksmith tongs
<table>
<thead>
<tr>
<th>Item</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolt cutters</td>
<td>Impact wrench</td>
</tr>
<tr>
<td>Cable ripper</td>
<td>Jack stands</td>
</tr>
<tr>
<td>Capacitor start motor</td>
<td>Jointer</td>
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<tr>
<td>Chalk/plumb lines</td>
<td>Large engines</td>
</tr>
<tr>
<td>Chisel set</td>
<td>Levels - 2' and 4'</td>
</tr>
<tr>
<td>Circuit breaker</td>
<td>Locking pliers</td>
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<tr>
<td>Combination single pole switch and</td>
<td>Lumber samples</td>
</tr>
<tr>
<td>receptacle</td>
<td>Magnetic switches</td>
</tr>
<tr>
<td>Compression tester</td>
<td>Materials storage racks</td>
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<tr>
<td>Concrete tools</td>
<td>Measuring wheel</td>
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<tr>
<td>Conduit bender</td>
<td>Metal band saw</td>
</tr>
<tr>
<td>Coping saw</td>
<td>Micrometer set</td>
</tr>
<tr>
<td>Copper tubing cutter</td>
<td>MIG welders</td>
</tr>
<tr>
<td>Copper tubing tools</td>
<td>Miter gauge</td>
</tr>
<tr>
<td>Crosscut hand saw</td>
<td>Miter saw (motorized)</td>
</tr>
<tr>
<td>Cylinder gauges</td>
<td>Multimeter</td>
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<tr>
<td>Diagonal cutting pliers</td>
<td>Needle nose pliers</td>
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<tr>
<td>Dinner's snips</td>
<td>Octagon boxes</td>
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<tr>
<td>Drain pans</td>
<td>Outlet covers</td>
</tr>
<tr>
<td>Drill press</td>
<td>Oxyacetylene units</td>
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<tr>
<td>Drill bits</td>
<td>Oxyacetylene cylinder carts</td>
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<tr>
<td>Duplex receptacles</td>
<td>Paint brushes</td>
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<tr>
<td>Duplex outlets</td>
<td>Paint pads</td>
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<tr>
<td>Dwell/tach/points tester</td>
<td>Paint rollers</td>
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<tr>
<td>Electric motors</td>
<td>Parts cleaner</td>
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<tr>
<td>Electrical tape</td>
<td>Pedestal grinder</td>
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<tr>
<td>Engine hoist - hydraulic</td>
<td>Pipe cutter</td>
</tr>
<tr>
<td>Engine stands</td>
<td>Pipe reamer</td>
</tr>
<tr>
<td>Face masks</td>
<td>Pipe threader</td>
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<tr>
<td>Files</td>
<td>Piston ring expander</td>
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<tr>
<td>First aid kit</td>
<td>Piston ring compressor</td>
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<tr>
<td>Flat chisels or other types</td>
<td>Planer</td>
</tr>
<tr>
<td>Float-activated switches</td>
<td>Plasma arc</td>
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<tr>
<td>Floor jack</td>
<td>Pliers</td>
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<tr>
<td>Framing squares</td>
<td>Porcelain lamp holders</td>
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<tr>
<td>Fuse</td>
<td>Portable drills</td>
</tr>
<tr>
<td>Gas welders</td>
<td>Portable circular saw</td>
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<tr>
<td>GFCI outlet or breaker</td>
<td>Portable disc grinder/sander/buffer</td>
</tr>
<tr>
<td>GFT's</td>
<td>Power washer</td>
</tr>
<tr>
<td>Ground clips</td>
<td>Pull chain lamp holder</td>
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<tr>
<td>Hammer drill</td>
<td>PVC cutter</td>
</tr>
<tr>
<td>Hammers</td>
<td>Radial arm saw</td>
</tr>
<tr>
<td>Hex wrench sets</td>
<td>Rasps</td>
</tr>
<tr>
<td>Hex wrench sets</td>
<td>Repulsion start - induction run motor</td>
</tr>
<tr>
<td>High speed indicator</td>
<td>Ripcut hand saw</td>
</tr>
<tr>
<td>Honing stone</td>
<td>Router</td>
</tr>
<tr>
<td>Hydraulic/pneumatic teaching aids</td>
<td>Rubber tipped or plastic tipped hammer</td>
</tr>
</tbody>
</table>
Sabre saw
Safety glasses/goggles
Sanders
Screwdrivers
Single-pole switches
Small engine stands
Small power tools (cordless)
Small engines (several)
Socket sets
Soldering gun
Spade bits
Spark lighter
Spark tester
Specialized small and large engine tools
Split-phase motor
Staple guns
Switch boxes
Switch covers
Table saw
Tap and die set
Tape measures
Tapes
Test light
Thickness gauges
Three-way switches
TIG welder
Timing light
Tin snips
Tip cleaner
Tire gauge
Tool sets

Torque wrench
Transit & rod
Trickle irrigation system parts
Valve spring compressor
Valve spring lifter
Volt-ohm-milliampere meter (VOM meter)
Welding helmets
Welding supplies
Welding gloves
Wet/dry vacuum cleaner w/attachments
Wheel & gear puller
Wheel type pipe cutter
Wire ripper
Wire nuts
Wire Strippers
Wood clamps
Work benches
Wrecking bars

NATURAL RESOURCE MANAGEMENT

Biltmore tree sticks
Boating and water safety tools and equipment
Compasses
Diameter tapes
Disease damaged tree pictures
Fishing equipment and fish management equipment
Forestry tools & equipment
Moisture testers
pH test strips
Pictures of game birds
Pictures of wetland areas
Pruning tools
Recycling equipment
Samples of hardwoods & soft woods
Samples of topographic maps
Tree cross-section
Tree insect specimens
Tree planting bar
Tree volume tables
Water quality testing equipment
Weather station equipment
Wedge prism
Wildlife equipment
Wood/Tree samples

FOOD SCIENCE
20, 28, 60 mesh sieves
Active dry yeast
ALS Lab Kit
Aluminum foil
Baking pan
Benedicts solution
Biuret solution
Blender
Butcher's saw
Candle jar
Cheese press
Cotton swabs
Crystal violet stain
Cutting boards
Dehydrator
Dial thermometer
Food coloring
Food Pyramid posters
Food grinder/chopper
Food processor or blender
Freezer paper
Freezer foil
Freezer bags
Gas flame source
Glass rod
Graduated cylinders
Grain grinder
Gram stain
Graph paper
Gray’s iodine
Grease pens
Hot plate
Ice cream freezer
Jar labels
<table>
<thead>
<tr>
<th>Junket tables</th>
<th>Refrigerator and freezer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab aprons</td>
<td>Rennin</td>
</tr>
<tr>
<td>Medicine droppers in milliliters</td>
<td>Safety glasses</td>
</tr>
<tr>
<td>Mixer</td>
<td>Smoker</td>
</tr>
<tr>
<td>Mixing spoons</td>
<td>Test tubes and rack</td>
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<tr>
<td>Mixing bowls</td>
<td>Thermos</td>
</tr>
<tr>
<td>Non-dairy product samples</td>
<td>Timer</td>
</tr>
<tr>
<td>Oil immersion microscope</td>
<td>Ultra violet</td>
</tr>
<tr>
<td>Paper towels</td>
<td>Lamp</td>
</tr>
<tr>
<td>Petri plates</td>
<td>Various agar types</td>
</tr>
<tr>
<td>Pipettes</td>
<td>Wax paper</td>
</tr>
<tr>
<td>Plastic wrap</td>
<td>White flour</td>
</tr>
<tr>
<td>Plastic jars &amp; lids</td>
<td>Wholesale and retail cuts wall chart</td>
</tr>
<tr>
<td>Processed milk samples</td>
<td>Yogurt makers</td>
</tr>
</tbody>
</table>
FARM MANAGEMENT AND/OR AGRIBUSINESS MANAGEMENT

Computers - several
Laser printers
Scanner
Current textbooks
Copy machine
Calculators

Funds for:

Software
Resources related to topic
Extension publications in quantity-Purdue & others-see online items and lists
Vocational Agriculture Services - University of Illinois materials - mailing list
Farm Credit Services materials
John Deere educational materials
Chicago Board of Trade Materials

Internet Sites
http://www.cbt.com/ – Chicago Board of Trade
http://www.emarketer.com/ - Data, Research and Analysis on E-business. Online marketing and emerging technologies
http://www.commerce.com/ - Your search engine for Internet commerce
http://www.landrights.org/ -American Land Rights Association
http://www.cme.com/ - Chicago Mercantile Exchange
http://www.rma.usda.gov/ -Risk Management Agency / USDA

Internet Search Keywords- international trade, world trade, exports, imports, agribusiness, international agriculture, trade barriers, macroeconomics, microeconomics, information technology, hedging, agriculture risk management.