

**WORK PROCESS SCHEDULE
DAIRY GRAZIER
O*NET-SOC CODE: 11-9013.02 RAPIDS CODE: 2019HY**

<u>Work Process Description</u>	<u>Approximate Hours</u> (Min - Max)
Measure and manage pastures for optimal quality and quantity <ul style="list-style-type: none"> •Graze different cow groups according to needs •Allocate appropriate break of grass •Monitor plant health and productivity •Control weeds •Select plants, grasses, and legumes based on conditions •Overseed pastures •Renovate pastures •Calculate stocking rates •Maintain accurate pasture records •Illustrate plant and animal interactions and connections •Apply soil fertility information to pasture management decision making 	800
Manage cattle appropriately-heifers/dry cows, calves, milking cows <ul style="list-style-type: none"> •Move and handle livestock safely •Evaluate calf needs and use current resources to meet their requirements •Maintain cattle specific records •Optimize versus maximize milk production •Establish cow breeding cycles •Manage herd health •Feed cattle •Plan for winter feeding, fall harvesting, and purchasing winter feed supplies •Develop contingency plans for weather, prices, and unknowns 	800
Manage milking operations <ul style="list-style-type: none"> •Manage milk cow environment •Develop milking protocols •Manage milk quality •Milk cows •Perform milk testing •Maintain stock records 	800
Assess dairy nutritional needs <ul style="list-style-type: none"> •Develop a strategy to optimize the amount of feed that comes from pasture •Develop a plan to extend the grazing season •Determine daily pasture allowance •Select quality feed •Select feed appropriate to livestock needs •Monitor feed, grain and supplemental nutrition •Store grain and supplemental feed •Maintain supplement feed records and information •Plan for winter feed needs 	400
Evaluate grazing and dairy farm information for effective decision making <ul style="list-style-type: none"> •Acquire information from farm records •Use computer technology for dairy grazing related information gathering and analysis 	200

<ul style="list-style-type: none"> •Access information via the Internet and other sources •Analyze financial information related to dairy grazing operations •Analyze commodity pricing relationships for rotational dairy grazing (milk, fuel, feed) •Perform general business performance analyses based on dairy and grazing information •Manage financial resources based on budget and records •Make farm decisions based on management information systems •Adapt to circumstances or the environment based on reliable information 	200
<p>Manage soil and water resources for productivity and health</p> <ul style="list-style-type: none"> •Assess soil based on type and conditions •Balance and maintain soil conditions and fertility for proper plant nutrient content •Show awareness for both organic and non-organic agronomy •Coordinate planting, plant growing seasons, and the environment with animal needs •Handle chemicals safely and in accordance with manufacturer's instructions •Manage drought conditions based on soil types •Manage water quality based on conditions •Irrigate soil for optimum productivity •Create wildlife habitats and natural areas •Apply land conservation techniques based on soil and water quality •Illustrate the interrelationships between soil health, fertility and pasture productivity •Utilize integrated pest management when needed •Manage manure •Fertilize pastures 	200
<p>Manage farm business operations profitably</p> <ul style="list-style-type: none"> •Manage time effectively •Plan forward •Coordinate custom operations •Retain employees •Recruit employees •Maintain good landlord and tenant relations •Balance profitability, family goals, and rural community impact (people, neighbors and environment) 	200
<p>Optional</p> <ul style="list-style-type: none"> •Evaluate organic farming operations •Assess pastures and paddock layouts •Monitor food and milk markets •Maintain grazing machinery, facilities and equipment •Other duties based on needs or interests 	312
PAID RELATED INSTRUCTION	288
TOTAL	4000

The above schedule is to include all operations and such other work as is customary in the occupation.

**RELATED INSTRUCTION OUTLINE
DAIRY GRAZIER
O*NET-SOC CODE: 11-9013.02 RAPIDS CODE: 2019HY**

Related Instruction Course						
Semester	Course #	Course Title	Credits	Contact Hrs	Category	Req?
1 and 2	UWSBDF	Pasture-Based Dairy and Livestock Seminar (Fall & Spring)	3	45	Core Course	Yes
1	50-091-500	Dairy Nutrition Seminar	1	36	Core Course	Yes
2	50-091-502	Dairy Health Seminar	1	36	Core Course	Yes
3	50-091-503	Milk Quality Seminar	1	36	Core Course	Yes
4	10-090-102	Organic Soils, Nutrients, and Composting	1	17	Core Course	Yes
Varies	Grassworks	Holistic Farming and Systems Approach	0	18	Core Course	Yes
Varies	Grassworks	Pasture Walks	0	0	Elective	As needed
Varies	10-091-104	Introduction to Animal/Dairy Science	3	72	Elective	As needed
1 or 2	Grassworks	Spring Grazing Conference	0	0	Elective	As needed
Varies	Grassworks	Farm Discussion Groups	0	0	Elective	As needed
Final Term	WTCS/BAS	Transition to Trainer	0	8	Elective	As needed

Program Course Detail

Course A -- Pasture-Based Dairy and Livestock Seminar (Fall & Spring)

Course Number UWSBDF

Semester/Year 1 and 2

Credits 3

Contact Hours 45

Total Hours 45

Category Core Course

Required Yes

Course Description: The Pasture-Based Dairy and Livestock Seminar will familiarize you with the development and management of pasture-based dairy and livestock farm businesses. The course is held on Thursdays from 11:00-1:15, mid-November through March on the UW-Madison campus. A distance education option allows students to enroll and participate via live webcast and interactive audio feed from closer to home. Topics of the seminar series include the economic, environmental, and agronomic principles of managed grazing; milking center design; dairy, beef, goat and sheep production; organic marketing and herd health; farm selection, design and remodeling; winter feeding and housing strategies; goal-setting and farm enterprise development. During the course, students will develop their own business plan for a current or desired farm operation. The final class consists of the opportunity to present the plan to a panel of successful farmers and agricultural lenders.

Linked Program Outcomes:

4. Optimize pasture production
5. Design pastures and paddock layouts
6. Manage soil and water resources for productivity and health
10. Evaluate grazing, dairy, and farm related information for effective decision-making
11. Manage farm business operations profitably

Course B -- Dairy Nutrition Seminar

Course Number 50-091-500

Semester/Year 1

Credits 1

Contact Hours 36

Total Hours 36

Category Core Course

Required Yes

Course Description: Students will learn theory behind farming practices. Topics covered in this course include; roles of digestive nutrients, nutritional requirements at various growth stages, relationship between forage quality and nutrition, ration balancing through calculation of feed, and dry matter intake. Students will learn about various methods of feeding dairy animals, including grazing system principles. Students will also evaluate the use of dairy nutrition feed technologies.

Linked Program Outcomes: 3. Assess dairy nutritional needs and requirements

Course C -- Dairy Health Seminar

Course Number 50-091-502

Semester/Year 2

Credits 1

Contact Hours 36

Total Hours 36

Category Core Course

Required Yes

Course Description: Students will explore the animal environment and adaptation, animal health and behavior as it relates to production and non-production species. Furthermore, it will provide the student with the skills to apply basic veterinary skills, animal behavior, signs of illness, vaccination programs, herd health records, and troubleshoot basic electrical applications.

Linked Program Outcomes: 1. Manage cattle appropriately including heifers/dry cows, calves,

- and milking cows
3. Assess dairy nutritional needs and requirements

Course D -- Milk Quality Seminar

Course Number 50-091-503

Semester/Year 3

Credits 1

Contact Hours 36

Total Hours 36

Category Core Course

Required Yes

Course Description: This course will provide students with a solid background in producing quality milk and utilizing good herd health management practices. Students will be introduced to milking systems and components, milk procedures, sanitation, diseases, udder anatomy, and milk secretion. Students will be exposed to milk quality practices globally.

Linked Program Outcomes:

- 2. Manage milking operations
- 9. Evaluate traditional, organic, and grass-based food and milk markets
- 10. Evaluate grazing, dairy, and farm related information for effective decision-making

Linked Core Abilities: 3. Communicate effectively

Course E -- Organic Soils, Nutrients, and Composting

Course Number 10-090-102

Semester/Year 4

Credits 1

Contact Hours 17

Total Hours 17

Category Core Course

Required Yes

Course Description: Functional soil is the foundation of organic systems. Build robust healthy soil through organic matter, micro-organisms, and nutrient cycling. Explore composting techniques, organic fertilizer sources, soil fertility testing, balancing.

Linked Program Outcomes:

- 5. Design pastures and paddock layouts
- 6. Manage soil and water resources for productivity and health
- 7. Maintain grazing machinery, facilities and equipment

Linked Core Abilities:

- 5. Adapt to change
- 6. Apply problem-solving strategies

Course F -- Holistic Farming and Systems Approach

Course Number Grassworks

Semester/Year varies

Credits 0

Contact Hours 18

Total Hours 18

Category Core Course

Required Yes

Course G -- Pasture Walks

Course Number Grassworks

Semester/Year varies

Credits 0

Contact Hours 0

Total Hours 0

Category Elective

Required Based on need

Course Description: Pasture walks with dairy grazing specialists will share best practices and grazing skills to apprentices during their apprenticeship.

Course H -- Introduction to Animal/Dairy Science

Course Number 10-091-104

Credits 3

Contact Hours 72

Total Hours 72

Category Elective

Required Based on need

Course Description: Introduction to the basics of livestock management. Management of the Dairy herd with concentration on nutrition, feedstuffs classification, reproduction, genetics, animal behavior, animal health, and sustainable agriculture practices.

Course I -- Spring Grazing Conference

Course Number Grassworks

Semester/Year 1 or 2

Credits 0

Contact Hours 0

Total Hours 0

Category Elective

Required Based on need

Course Description: Annual 2-day spring conference will provide apprentices with an opportunity to network with other dairy graziers and learn current practices and farm trends. Contact Grassworks for information.

Course J -- Farm Discussion Groups

Course Number Grassworks

Semester/Year varies

Credits 0

Contact Hours 0

Total Hours 0

Category Elective

Required Based on need

Course Description: Small group discussions with other graziers will explore best practices, emerging trends, new approaches to dairy production and grazing operations.

Course K -- Transition to Trainer

Course Number WTCS & BAS and all Wisconsin technical colleges

Semester/Year Final Term

Credits 0

Contact Hours 8

Total Hours 8

Category Elective

Required Based on need

Course Description: *Transition to Trainer* is designed for all apprentices who are approaching the end of their related instruction as well as for journey level workers who are or will be training apprentices.

Program Exit Learning Outcomes

1. Manage cattle appropriately including heifers/dry cows, calves, and milking cows

Assessment Strategies

1. Skill demonstrations on the farm
2. with an experienced farmer or agricultural (AG) professional observing
3. by completing an apprenticeship journal/score card/competency checklist/job book that records your achievement of the competencies in this program
4. by completing a standard operations procedures manual for the farm

Performance Criteria

1. apprentice handles animals safely
2. apprentice verifies herd health and wellness
3. apprentice evaluates animal productivity
4. apprentice evaluates calf needs and uses appropriate resources to meet their requirements
5. apprentice establishes cow breeding cycles
6. apprentice manages break of grass
7. apprentice demonstrates cow management protocols based on need

2. Manage milking operations

Assessment Strategies

1. skill demonstrations on the farm
2. with an experienced farmer or AG professional observing
3. by completing an apprenticeship journal/score card/competency checklist/job book that records your achievement of the competencies in this program
4. by completing a standard operations procedures manual for the farm

Performance Criteria

1. apprentice optimizes milk production
2. apprentice feeds milk cows correctly
3. apprentice implements milk cow vaccination program
4. apprentice diagnoses milk cow illnesses
5. apprentice treats milk cow illnesses
6. apprentice maintains hoof health
7. apprentice manages the milk cow environment
8. apprentice develops milking protocols based on conditions
9. apprentice manages milk quality
10. apprentice milks cows following prescribed procedures
11. apprentice accurately performs milk testing
12. apprentice maintains stock records
13. apprentice identifies culled cows
14. apprentice disposes of dead stock
15. apprentice performs all the critical steps in the correct order

3. Assess dairy nutritional needs and requirements

Assessment Strategies

- 1 skill demonstrations on the farm
- 2 with an experienced farmer or AG professional observing
- 3 by completing an apprenticeship journal/score card/competency checklist/job book that records your achievement of the competencies in this program
- 4 by completing a standard operations procedures manual for the farm

Performance Criteria

1. apprentice selects quality feed based on conditions
 2. apprentice selects feed appropriate to livestock needs
 3. apprentice develops a strategy to optimize the amount of feed that comes from pasture
 4. apprentice stores grain and supplemental feed
 5. apprentice develops a plan to extend the grazing season
 6. apprentice monitors feed, grain and supplemental nutrition
 7. apprentice maintains supplement feed records and information
4. Optimize pasture production

Assessment Strategies

1. skill demonstrations on the farm
2. with an experienced farmer or AG professional observing
3. by completing an apprenticeship journal/score card/competency checklist/job book that records your achievement of the competencies in this program
4. by completing a standard operations procedures manual for the farm

Performance Criteria

1. apprentice estimates pasture production volume
 2. apprentice selects plants, grasses, and legumes based on pasture conditions
 3. apprentice monitors plant health and productivity
 4. apprentice fertilizers pastures based on soil and nutritional needs
 5. apprentice applies growing cycles to pasture productivity
 6. apprentice identifies plant species, needs, and disorders
 7. apprentice controls weeds
 8. apprentice renovates and over seeds pastures
 9. apprentice manages surplus grass
 10. apprentice applies soil fertility and grazing information to decision making
 11. apprentice calculates stocking rates
 12. apprentice rations pastures productively
 13. apprentice maintains accurate pasture records
5. Design pastures and paddock layouts

Assessment Strategies

- 1 skill demonstrations on the farm
- 2 with an experienced farmer or AG professional observing
- 3 by completing an apprenticeship journal/score card/competency checklist/job book that records your achievement of the competencies in this program
- 4 by completing a standard operations procedures manual for the farm

Performance Criteria

1. apprentice designs paddock layouts suitable for rotational grazing
2. apprentice plans for, and lays out, rotational grazing fences
3. apprentice selects appropriate rotational grazing fences based on conditions
4. apprentice installs rotational grazing fences
5. apprentice maintains rotational grazing fences

6. apprentice creates plans for moving livestock and accessing paddocks/pastures
7. apprentice moves mobile fences based on cow needs
8. apprentice plans and assembles livestock watering systems
9. apprentice creates plans for pasture irrigation systems when applicable

6. Manage soil and water resources for productivity and health

Assessment Strategies

1. skill demonstrations on the farm
2. with an experienced farmer or AG professional observing
3. by completing an apprenticeship journal/score card/competency checklist/job book that records your achievement of the competencies in this program
4. by completing a standard operations procedures manual for the farm

Performance Criteria

1. apprentice coordinates animal needs with pasture growth and growing seasons
2. apprentice assess soil needs based on type and conditions
3. apprentice balances soils for proper nutrient content
4. apprentice selects the best grasses and legumes based on soil and water conditions
5. apprentice fertilizers pastures based on conditions
6. apprentice handles chemicals safely and in accordance with manufacturer's instructions
7. apprentice maintains soil conditions and fertility
8. apprentice plans for winter feeding, fall harvesting, and purchasing winter feed supplies
9. apprentice manages water quality based on conditions
10. apprentice manages drought conditions based on soil types
11. apprentice determines integrated pest management in rotational dairy grazing practices
12. apprentice manages manure
13. apprentice applies land conservation techniques based on soil and water quality
14. apprentice shows awareness for both organic and non-organic agronomy

7. Maintain grazing machinery, facilities and equipment

Assessment Strategies

1. skill demonstrations on the farm
2. with an experienced farmer or AG professional observing
3. by completing an apprenticeship journal/score card/competency checklist/job book that records your achievement of the competencies in this program
4. by completing a standard operations procedures manual for the farm

Performance Criteria

1. apprentice works around farm equipment safely
2. apprentice uses appropriate personal protective equipment properly
3. apprentice follows safety procedures and manufacturer specifications
4. apprentice cleans and sanitizes milking facilities and equipment according to regulations
5. apprentice maintains equipment used in rotational dairy grazing operations
6. apprentice troubleshoots equipment malfunctions
7. apprentice repairs equipment
8. apprentice assists with developing specialized rotational grazing facilities and equipment based on farm layout or conditions
9. apprentice develops winter feed storage plans and estimates winter feed storage requirements

8. Plan for organic farming operations

Assessment Strategies

1. skill demonstrations on the farm
2. and by developing a farm business plan for establishing organic dairy grazing operations
3. with an experienced farmer or AG professional observing
4. by completing an apprenticeship journal/score card/competency checklist/job book that records your achievement of the competencies in this program
5. by completing a standard operations procedures manual for the farm

Performance Criteria

1. apprentice incorporates organic cropping into rotational grazing systems
 2. apprentice acquaints self with organic rotational dairy farming
 3. apprentice adheres to organic certification and record keeping
 4. apprentice coordinates organic suppliers and resource providers
 5. apprentice evaluates organic product markets and market potential
 6. apprentice acquaints self with organic agronomy and soils
9. Evaluate traditional, organic, and grass-based food and milk markets

Assessment Strategies

1. skill demonstrations on the farm
2. and by collecting, organizing and reporting data related to grass finished dairy products
3. with an experienced farmer or AG professional observing
4. by completing an apprenticeship journal/score card/competency checklist/job book that records your achievement of the competencies in this program
5. by completing a standard operations procedures manual for the farm

Performance Criteria

1. apprentice plans for creating value added dairy products
 2. apprentice characterizes milk quality that results from rotational grazing and grass feed cows
 3. apprentice communicates the benefits of sustainable farming
 4. apprentice explains the value of grass finished milk products
 5. apprentice acquaints self with end-user needs and consumerism
 6. apprentice demonstrates being alert to global needs and market trends
10. Evaluate grazing, dairy, and farm related information for effective decision-making

Assessment Strategies

1. skill demonstrations on the farm
2. and by preparing a (WRITTEN OR VERBAL) response to a case study
3. with an experienced farmer or AG professional observing
4. by completing an apprenticeship journal/score card/competency checklist/job book that records your achievement of the competencies in this program
5. by completing a standard operations procedures manual for the farm

Performance Criteria

1. apprentice uses computer technology for dairy grazing related information gathering and analysis
 2. apprentice acquires information from farm records
 3. apprentice accesses information via the Internet and other sources
 4. apprentice analyzes financial information related to dairy grazing operations
 5. apprentice makes farm decisions based on management information systems
 6. apprentice manages money based on accurate information
 7. apprentice adapts to circumstances or the environment based on reliable information
11. Manage farm business operations profitably

Assessment Strategies

1. skill demonstrations on the farm
2. and by completing a written farm business plan using rotational dairy grazing practices
3. with an experienced farmer or ag professional observing
4. by completing an apprenticeship journal/score card/competency checklist/job book that records your achievement of the competencies in this program
5. by completing a standard operations procedures manual for the farm

Performance Criteria

1. apprentice manages time effectively
2. apprentice plans forward
3. apprentice coordinates custom operations
4. apprentice analyzes commodity pricing relationships (milk, fuel, feed)
5. apprentice performs business performance reviews based on accurate information
6. apprentice summarizes strategies recruiting employees
7. apprentice summarizes strategies for retaining employees
8. apprentice maintains good landlord/tenant relations
9. apprentice balances profitability, family goals, and rural community impact (people and the environment)
10. apprentice develops contingency plans for weather, prices, and unknowns
11. apprentice maintain cattle specific records

12. Work with support services

Assessment Strategies

1. skill demonstrations on the farm
2. and by writing a summary of support services available to dairy grazing farm owners and managers
3. with an experienced farmer or ag professional observing
4. by completing an apprenticeship job book that records your achievement of the competencies in this program
5. by completing a standard operations procedures manual for the farm

Performance Criteria

1. apprentice demonstrates awareness of educational, technical, and financial assistance for dairy graziers
2. apprentice demonstrates awareness of support services available from the financial community
3. apprentice demonstrates awareness of support services available from grazing networks, nonprofits, and dairy operators
4. apprentice uses support services available from the technical colleges, UW, and other educational providers
5. apprentice uses support services available from the USDA, Dept. of Natural Resources, Conservation Service and related agencies
6. apprentice uses support services available from UWEX, AG and CRD agents
7. apprentice uses support services available from Farm Service Agency
8. apprentice communicates information related to support services available from land conservation departments, SWeD's and others
9. apprentice demonstrates awareness of support services available from value-added buyers
10. apprentice communicates information related to support services available to non-English speaking workers and farms

13. Balance quality of life and family

Assessment Strategies

1. skill demonstrations on the farm
2. with an experienced farmer or AG professional mentoring
3. by completing an apprenticeship journal/score card/competency checklist/job book that records your achievement of the competencies in this program
4. with the use of references and family/community resources
5. by completing a standard operations procedures manual for the farm

Performance Criteria

1. apprentice provides for family safety and security
2. apprentice accepts responsibility for family health and well being
3. apprentice communicates farm and family information effectively
4. apprentice accepts responsibility for communication and social skills
5. apprentice demonstrates effective relationships with neighbors and others in the community
6. apprentice allocates time for recreational opportunities
7. apprentice creates farm family goals and objectives