

Course & Curriculum Committee
Meeting Minutes
January 14, 2022 - 1:00 p.m. via Zoom

Present: J. Abbott, C. Barrett, J. Brady, W. deDie, A. Cederberg, D. Coates, D. Coblentz, P. Eagan, C. Gibson, K. Grubka, S. Hubbell, R. Kraas, C. Jbara, T. Labadie, A. Moore, S. Myers, A. Nord, H. Parmelee, C. Pruis, B. Reynolds, K. Sparrow, T. Sypris, J. Wagner

Absent: N. Bergan, G. Fredericks, T. Hamann, A. Marsh-Peek, E. Pauken, M. Raines

Guests: R. Bair, P. Jonas, S. Tanis

1. Call to Order – 1:03 p.m.
2. Meeting Minutes of December 10, 2021 – The meeting minutes of December 10, 2021 were approved as presented.
3. Business
 - 3.1 HORT
 - 3.1.1 New Courses (Effective 202320)
 - 3.1.1..1 HORT 100: Introduction to Horticulture, 3-2-3 (Lecture/Discussion - Standard Lab) –
Course Description: This course introduces the basic concepts of plant biology as they apply to various aspects of the horticulture industry. Students will learn about aspects of plant physiology, breeding, morphology, and anatomy and apply those concepts to hands-on activities that explore plant growth, reproduction, propagation, and harvest. Students will engage in “hot topic” discussions that explore the most current information on horticulture technology, climate change, racial equity of greenspaces, and sustainable design in landscapes worldwide. Students will also design, implement, and present results for a scientific horticultural project that will take place over the duration of the course.
 - 3.1.1..2 HORT 110: Horticultural Pest Management, 3-2-3 (Lecture/Discussion - Standard Lab)
Course Description: This course introduces students to the basic principles of pest biology, diagnostics, and management; primarily insects and plant pathogens. Students will also learn about pest invasion / outbreak biology, prediction, and mitigation. Students will develop diagnostic skills for identifying plant, vertebrate and invertebrate pests. They will use their diagnostic skills to inform effective pest management using the six steps of Integrated Pest Management (IPM). Within an IPM framework, they will learn to effectively and safely use conventional, organic, and bio-control pest management applications. Students will complete a collection of pinned insect specimens and preserved insect sign (e.g., feeding damage) specimens. Students will have the opportunity to take the Michigan Certified Pesticide Applicator Certification exam at the end of the course.
 - 3.1.1..3 HORT 115: Horticulture Management, 3-3-0 (Lecture/Discussion)
Course Description: Students will gain experience implementing horticulture business management standards and theories. Students will explore how a variety of green industry businesses (e.g., garden centers, design - build firms, and nurseries) are structured and managed. Students will also learn how to effectively market horticultural products and services. In order to gain hands on experience with business structure, students will craft a business plan that incorporates 1) executive summary, 2) company description, 3) product/services description, 4) market analysis, 5) business strategy and 6) organization chart. Students will practice and hone a variety of soft skills including (but not limited to): discussing landscape plans with customers, constructing business emails, handling conflict within a work group, addressing workplace bias, balancing a budget, and

managing field crews with respect. Students will also gain hands on experience estimating costs for multiple types of green industry projects (e.g., hanging basket production, pollinator garden installation).

- 3.1.1..4 **HORT 120: Soils & Plant Nutrition, 3-2-3 (Lecture/Discussion - Standard Lab)**
Course Description: Students will learn about the physical, chemical, and organic properties of soil and a variety of commercial growing medias. Students will learn how soils are formed, eroded, and stabilized. They will also explore how soils / growing media affect plant biology and how plants respond to soil nutrients and physical (e.g., compaction) and chemical (e.g., nutrient availability) properties. Students will practice diagnosing common plant nutrition deficiencies / toxicities and will gain hands on experience prescribing and applying fertilizer and cultural (e.g., plant growth regulators) amendments that mitigate plant nutrition issues. Students will also gain experience obtaining soil / growing media/plant nutrient concentration samples and interpreting processed sample reports.
- 3.1.1..5 **HORT 125: Horticulture Technology, 3-2-3 (Lecture/Discussion - Standard Lab) –**
Course Description: Students will gain hands on experience operating and maintaining equipment commonly used in green industry operations. Equipment will include (but is not limited to): mowers, fork lifts, trimmers, skid steers, conveyor systems, and a variety of motorized / manual equipment. Students will design and describe seasonably appropriate maintenance schedules and demonstrate safe operation of all course equipment. Students will also design, install, troubleshoot, and repair indoor and outdoor irrigation systems and learn to interpret municipal codes and zoning laws. They will also learn to determine when it is necessary to employ tradespeople (e.g., plumbers, electricians, etc.) for specialized repairs and code/zoning interpretation.
- 3.1.1..6 **HORT 200: Herbaceous Plants, 3-2-3 (Lecture/Discussion - Standard Lab)**
Course Description: This course will give students hands on experience with a variety of herbaceous (non-woody) plants commonly used in greenhouse production and landscapes. Plants will include annuals and perennials, bulb plants, herbs, bedding, vegetable and fruit plants, vines, and ground covers. In addition, students will discuss plant morphological and physiological characteristics and their uses in a variety of settings including landscapes, greenhouses, culinary gardens, and green infrastructure. Students will learn to use a variety of tools (e.g., field guides and iNaturalist®) to correctly identify plants based on their morphological characteristics to family, genus, species, and occasionally cultivar.
- 3.1.1..7 **HORT 211: Fruit & Vegetable Production, 2-1-3 (Lecture/Discussion - Standard Lab)**
Course Description: Students will gain hands on experience and in-depth understanding of the science and practice of growing fruit and vegetables for food. Students will assess how soil fertility, moisture content, and tilth affect crop establishment, quality, and production. They will also learn how environmental manipulation (e.g., mulch, irrigation, etc.) in controlled and uncontrolled environments affects pest management, crop production, and plant physiology. Students will learn how to schedule crops, prune for desired yield, harvest crops according to food safety protocols, and market crops. Students will gain experience with organic and conventional production and learn the environmental ramifications for both of these methods. Students will also learn when and how to implement crop rotation, cover crops, and season extension practices.
- 3.1.1..8 **HORT 212: Greenhouse Systems, 3-2-3 (Lecture/Discussion - Standard Lab)**
Course Description: Students will learn how to manipulate controlled greenhouse environments to grow a variety of ornamental and edible plants; they will experience crop scheduling, planting, harvesting, and marketing greenhouse, aquaponic, and hydroponic crops. Students will explore the financial and environmental aspects of running a greenhouse that successfully produces a variety of greenhouse crops. Students will learn how to select growing medias, nutrient additives, light sources, etc. and will gain hands on experience adjusting inputs to meet the unique needs of plants grown in controlled

environments. Students will also learn to troubleshoot greenhouse equipment and determine when it is necessary to request help from other professional tradespeople (e.g., plumber, electrician, etc.).

- 3.1.1..9 HORT 213: Plant Propagation, 2-1-3 (Lecture/Discussion - Standard Lab)**
Course Description: Students will gain hands on experience with multiple plant propagation methods including stem and bud grafting and planting seeds, bulbs, divisions, layers, and cuttings for multiple plant types including vegetables, trees, shrubs, and herbaceous and woody annuals and perennials. They will learn how seasonality, provenance, plant age, environmental factors (e.g., temperature, light, etc.) and propagation techniques affect propagation success and ease. Students will learn how to schedule production based on propagation requirements, use of propagation tools and compounds (e.g., rooting hormone), and harvest, receive, store, and treat plant materials for propagation.
- 3.1.1..10 HORT 214: Urban Horticulture, 3-2-3 (Lecture/Discussion - Standard Lab)**
Course Description: Students will learn about the unique challenges and environmental situations faced by plants (and horticulturists!) in urban areas. They will discover how soil compaction, water availability, urban heat island effects, and the built environment influence plant growth, health, and overall survival. They will explore how climate change, soil and water pollution, and invasive species create a unique set of challenges for urban residents and gain hands on experience mitigating those challenges using the latest green industry technology. Students will explore sustainable food production and public green space access and educational programming; they will also create a landscape design for an environmentally resilient public green space.
- 3.1.1..11 HORT 215: Green Infrastructure, 2-1-3 (Lecture/Discussion - Standard Lab)**
Course Description: Students will gain hands on experience in green infrastructure design, construction, and maintenance at multiple scales including residential, commercial, and public spaces. They will make connections about how green infrastructure is used to mitigate environmental and natural resource challenges in the built environment. Students will discuss the many environmental, economic, and social benefits of green infrastructure and will determine how best to incorporate green building elements into existing and new locations. Students will also gain perspectives on how green infrastructure is used worldwide to conserve water, reduce pollution (e.g., noise and air), mitigate climate change, and build food security.
- 3.1.1..12 HORT 221: Woody Plants, 3-2-3 (Lecture/Discussion - Standard Lab)**
Course Description: This course will give students hands on experience with a variety of woody plants commonly used in landscapes and nursery production. Plants will include vines, shrubs, and trees. In addition, students will discuss the morphological and physiological characteristics of woody plants and their uses in a variety of settings including landscapes, culinary gardens, food forests, and green infrastructure. Students will learn to use a variety of methods to correctly identify plants (e.g., field guides and iNaturalist®) based on their morphological characteristics to plant family, genus, species, and occasionally cultivar.
- 3.1.1..13 HORT 222: Plant Pruning & Maintenance, 2-1-3 (Lecture/Discussion - Standard Lab)**
Course Description: This course will give students hands on experience in proper landscape plant maintenance in a variety of settings and seasons. Students will learn how to work collectively to prune plants for desired space constraints, flower and fruit production, ecosystem services, privacy, plant health, and design intent. Students will also gain understanding of the physiological and morphological benefits of pruning and they will be given hands on experience pruning a variety of plant materials including shrubs, small and large trees, vines, fruiting shrubs and trees, and plants in confined and open grown spaces. In addition, students will experience applying plant growth regulators, performing soil and trunk injections, and training plants using techniques like espalier.

- 3.1.1..14 HORT 223: Nursery Management, 2-1-3 (Lecture/Discussion - Standard Lab)
Course Description: Students in this course will learn the basic management practices for plant nursery container and field production. They will design, implement, and experience supply chain logistics by participating in projects where they select crops based on customer needs. They will obtain, propagate, up-pot, market, "sell", and "ship" their selected plant materials. Students will manage all aspects of irrigation, pest control, and permits / certifications for their selected crops. Students will learn to select plants based on their ecosystem services, management needs, and aesthetics. They will also discover how nursery plants are used to augment and restore urban and rural residential, commercial, and "natural" ecosystems.
- 3.1.1..15 HORT 224: Landscape Design, 2-1-3 (Lecture/Discussion - Standard Lab)
Course Description: Students will learn basic landscape design concepts including site evaluation, sense of place establishment, communicating design intent, and appropriate plant selection. They will develop drawing and rendering skills and produce three original landscape plans for their portfolio that incorporate the "right plant, right place" concept. In addition, they will learn how to read design plans, communicate design plan details to crew members and customers, and install design elements according to a design plan. Students will also gain experience selecting and substituting specific plants for the spaces they are working in and estimating materials and costs for a variety of design types (e.g., commercial vs. residential).
- 3.1.1..16 HORT 225: Sustainable Landscaping, 3-2-3 (Lecture/Discussion - Standard Lab)
Course Description: Students will learn to implement cutting-edge methods of landscape management necessary for restoring, maintaining, and protecting the ecological services provided by developed landscapes. Students will learn how to retrofit existing landscapes to increase water and soil conservation, decrease urban heat island effects, enhance flora and fauna biodiversity, and increase ecosystem services for human and non-human residents. Students will also learn how socioeconomics affect greenspace management and access. They will also gain hands on experience designing and installing lawn alternatives, native plants, and permaculture using sustainable plant and hardscape materials and low emissions equipment. Students will render two landscape designs that 1) retrofit an existing traditional landscape to have enhanced ecosystem services and 2) augment a "natural" space with new plantings and design elements.
- 3.1.1..17 HORT 240: Professional Development, 1-1-0 (Lecture/Discussion) – Title Change to Horticulture Capstone discussed and endorsed
Course Description: Students will develop their professional skills and create a LinkedIn® portfolio that showcases their strengths and interests. Students will learn how to search and apply for green industry jobs, write an impactful resume, successfully navigate an interview, and negotiate a salary. In addition, students will hone their professional etiquette and communication skills. Students will also have opportunities to interact with a variety of green industry professionals.
- 3.1.1..18 HORT 278: Horticulture Internship, 3-0-0 (Internship)
Standard Course Description: Internships are supervised on-the-job learning experiences, designed to permit advanced students the opportunity to apply specific learned competencies in a work environment.

Items 3.1.1..1 – 3.1.1..18 – S. Tanis discussed the recommendation of adding the new courses listed above to the program offerings as part of the GHM.CERT: Greenhouse Management CERT, LSM.CERT: Landscape Management CERT, SH.AAS: Sustainable Horticulture AAS, and SH.COA: Sustainable Horticulture AAS. A detailed overview of each new course was provided. After discussion it was MOVED, SECONDED, and CARRIED to endorse the recommendations as presented.

3.1.2 New Programs (Effective 202320)

- 3.1.2..1 GHM.CERT: Greenhouse Management CERT – Approved removing HORT 278, Horticulture Internship reducing total credits to 31.
- 3.1.2..2 LSM.CERT: Landscape Management CERT -Approved removing HORT 278, Horticulture Internship reducing total credits to 31.
- 3.1.2..3 **SH.AAS: Sustainable Horticulture AAS - TABLED**
- 3.1.2..4 SH.COA: Sustainable Horticulture COA

Items 3.1.2..1, 3.1.2..2, 3.1.2..4 – After discussion it was MOVED, SECONDED, and CARRIED to recommend the addition of GHM.CERT: Greenhouse Management CERT, LSM.CERT: Landscape Management CERT and SH.COA: Sustainable Horticulture COA to the program offerings at KVCC and to TABLE SH.AAS: Sustainable Horticulture AAS to a future date.

- 4. Other – None Presented
- 5. Next Meeting: February 11, 2022 at 1:00 p.m. via Zoom
- 6. Adjournment: 3:10 p.m.