

**SUSTAINABLE PRACTICES**

**Occupational Profile**

**Sustainable Practices Professional** designs, integrates, and influences resource use to meet the needs of the present without compromising the future.

**Develop A Curriculum (DACUM) Workshop: Bachelor of Applied Science in Sustainable Practices (BAS-SP)**

DUTIES TASKS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **COMMUNICATION.** | **A** | Demonstrate professional and technical writing skills.A-1 | Demonstrate rhetorical awareness (audience, medium, and message)A-2 | Proficiency in visual rhetoric and communication. A-3 | Ability to clearly communicate with multiple audiences. A-4 | Perform audience and genre analysis, including1-report writing, 2-responding appropriately to RFPs and job ads, 3-research writing, 4-business writing A-5 | Advocate sustainable practices.A-6 |
|  |  | Select the appropriate medium of communication.A-7 | Demonstrate techniques of persuasion and influence in implementation, management and marketing. A-8 | Provide training.A-9 | Demonstrate professional presentation skills.A-10 |  |  |
| **RESEARCH & ANALYSIS.** | **B** | Perform needs assessments.B-1 | Demonstrate different approaches to program evaluation:1-process, 2-market, 3-impact B-2 | Demonstrate competence with risk analysis. B-3 | Monitor and synthesize data.B-4 | Apply statistics, probability, and regression analysis.B-5 | Establish baseline and perform bench marking.B-6 |
|  |  | Perform a life cycle analysis and incorporate in decision making. B-7 | Perform an audit and/or perform technical field research.B-8 |  |  |  |  |
| **REGULATORY FRAMEWORK & ASSOCIATE CONVENTIONS.** | **C** | Summarize the testifying process.C-1 | Interpret and apply regulations.C-2 | Understand the authorizing environment.C-3 | Differentiate and locate federal, state and local regulations.C-4 | Historicize and contextualize US regulations related to environmental and sustainability practices. C-5 | Compare and contrast current environmental regulations with alternatives. C-6 |
|  |  | Survey the different approaches to climate policies.C-7 |  |  |  |  |  |
| **E, H, & S CONSIDERATIONS.** | **D** | Apply appropriate safety standards to all job sites.D-1 | Possess awareness of safety hazards and standards and apply where relevant.D-2 | Identify proactive and reactive safety and environmental impact practices).D-3 | Promote optimal environment for whole health.D-4 | Ability to research past the limitations of labeling and MSDS.D-5 | Recognize on-site hazards.D-6 |
|  |  | Identify and manage hazardous and solid wastes.D-7 | Possess a basic understanding of personal protective equipment.D-8 | Interpret and follow safety plans.D-9 | Awareness of insurance and liability issues.D-10 | Recognize the elements IEQ.D-11 |  |
| **PROJECT MANAGEMENT.** | **E** | Ability to plan, develop and manage a scope of work and a schedule.E-1 | Define a goal with milestones and outcomes.E-2 | Employ expectation management.E-3 | Review the requirements of PMP.E-4 | Describe why projects fail.E-5 | Know and apply appropriate project management tools.E-6 |
|  |  | Develop and collect appropriate metrics.E-7 |  |  |  |  |  |
| **FINANCE $.** | **F** | Ability to develop and manage a budget.F-1 | Estimate costs and savings.F-2 | Understand and perform financial analysis using industry appropriate tools.F-3 | Navigate and understand funding mechanisms.F-4 | Identify financial incentives.F-5 | Calculate incremental costs.F-6 |
| **BEHAVIORAL ANALYSIS.** | **G** | Synthesize cause and effect and how it impacts an environment.G-1 | Stimulate and manage change.G-2 | Implement community-based social marketing.G-3 | Utilize the psychology of change. G-4 | Analyze human/environment interaction using tools such as time and motion studies.G-5 | Uncover the root causes of unsustainable behavior.G-6 |
|  |  | Recognize and negotiate human resistance to change or too much change.G-7 | Create local champions.G-8 | Identify allies.G-9 | Recognize behavior and motivation connected to loss and teach humans to reframe their realities.G-10 | Recognize and negotiate human resistance to change or too much change.G-11 | Create local champions.G-12 |
| **VALUES & ETHICS.** | **H** | Locate personal values and ethics within the organizational culture.H-1 | Recognize different organizational cultures and the values that are represented.H-2 | Review standards of professional ethics.H-3 | Demonstrate cultural empathy and understanding of impact of other systems and communities.H-4 | Integrate social responsibility with work.H-5 | Maintain integrity of data analysis.H-6 |
|  |  | Foster ongoing peer review. H-7 |  |  |  |  |  |
| **NATURAL SCIENCES & SYSTEMS.** | **I** | Define carbon cycle and mitigation opportunities.I-1 | Define water cycle and conservation opportunities.I-2 | Know and apply resource/ bio-mimicry technologies.I-3 | Assess and calculate natural limits and evaluate tipping points, e.g. carrying capacity.I-4 | Review and articulate basic ecological principles and earth systems.I-5 | Continually evaluate climate change implications.I-6 |
|  |  | Identify energy sources and fuel types.I-7 | Apply basic principles of physics, chemistry and biology.I-8 | Calculate the embodied energy of a product or service.I-9 |  |  |  |
| **SECTOR (RESOURCE USER GROUP) OVERVIEW.** | **J** | Differentiate varying market sector interests and stakes in sustainability.J-1 | Differentiate business practices between private, public, and NGO’s.J-2 | Stimulate cross-pollination between sectors.J-3 | Identify and trace resource use in each sector and supply chain.J-4 |  |  |
| **TECHNICAL SYSTEM LITERACY.** | **K** | Apply thermodynamics and heat transfer.K-1 | Apply system architecture.K-2 | Apply technical terminology.K-3 | Review and understand systems fundamentals including: 1-water systems, 2-control systems, 3-transportation systems, 4-power generation, 5-electrical distribution, 6-HVAC, 7-AGri, 8-waste, 9-IT K-4 | Define, describe and apply systems at varying scales.K-5 |
|  |  | Second | Perform industry specific simulation and modeling.K-7 | Describe and improve industry best practices.K-8 | Deploy emerging technologies.K-9 |  |  |

|  |
| --- |
| **Additional Knowledge, Skills, & Abilities** |
| **Durable Skills:*** Planning and organizational skills
* Understand professional and workplace conventions
* Cultivate patience
* Manage stress
* Mitigate burnout
* Ambiguity coping skills
* Comfortable with gray areas
* Problem solving and critical thinking skills
* Networking and collaboration skills
* Leadership skills
* Goal setting

**Other Knowledge Required:*** Environmental economics
* Technical Writing
* Chemistry (lab)
* Physics and chemistry of materials management
* Math, from Algebra through Statistics
* Excel
* Digital communication tools
* Supply chain management
* Human behavior
* Conversions between units of measure

Permitting and regulatory knowledge | **Traits and Characteristics:*** Resilience and self-motivated
* Engage in continuing education
* Self-starter
* Comfortable with autonomy
* Team-player
* Credible and trust-worthy
* Moral compass

**Equipment Knowledge**:* HVAC Systems including: Variable Air Volume, Variable Refrigerant Flow, Natural Ventilation Systems, Simple Systems, Chilled Water Systems, Hydronic Systems, Energy Recovery Systems
* Data Loggers for Measurement & Verification
* Alternate Energy Source Systems
* Flow meters
* Scales and weight
* Survey technology (for instance online tools such as Survey Monkey)
 | **Regulatory Knowledge:***Every day:*

|  |  |  |
| --- | --- | --- |
| Federal | State | Local |
| * Corps 404 (wetlands)
* Endangered Species Act (ESA)
* 4 F/10G (cultural resources)
* NEPA (with federal funding Nexus)
* Clean Air Act (if you discharge)
 | * Hydraulic Project Approvals
* State ESA
* SEPA
 | * Building Code (UBC)
* Critical Area Ordinances
* Shore Line Master Program
* Regional Clean Air (PSCA)
* State Electrical and energy Code
* Seattle Electrical and energy Code
* Comprehensive planning and Growth Management Act
 |

*Occasional:*

|  |  |  |
| --- | --- | --- |
| Federal | State | Local |
| * Clean Water Act (if you discharge)
* CERCLA
* TOSCA
* RCRA
* Farm Bill
* Federal taxes and subsidies for energy and water
* Consumer and food safety regulations
* Commerce Clause
 | * Model Toxics Control Act
* State Taxes and subsidies (gas tax)
* I-937 (renewable portfolio standards)
* Water rights
* WUTC
 | * County solid and hazardous waste regulations
* Benchmarking ordinances
* Low Impact Development policies
* Level of Service standards
* Commute Trip Reduction
* Water reuse/ greywater
* Solar access laws
* Interconnection
 |

 |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Participants** | **Host College** | **Co-facilitators, Recorder, Coordinators:** |
| Eric Carlson, Owner, Energy Environment Strategies (E2C2 Inc.)Emma Johnson, Resource Conservation Manager, City of BellevueKelly M. Kirkland, Education Services Manager, O’Brien & CompanyTom Lienhard, Chief Energy Efficiency Engineer, Avista UtilitiesMark Nieman, Energy Engineering Manager, McKinstryPete Segall, Energy Services Manager, ATS AutomationTom McLaughlin, Executive Director, Campus-US (Center for Advanced Manufacturing – Puget Sound)Vicki Colgan, Sustainable Building Materials Management, Washington State Department of EcologyKristin Kinder, Education and Outreach Coordinator, Waste ManagementDavid Landers, Manager, Business Energy Management, Puget Sound EnergyNancy Mason, Workforce Development Manager, Sustainable WorksKurt Sahl, Ed. Program Director, 21 AcresClara Simon, Sustainability Manager, Capital Projects, University of WashingtonGreg Bush, Manager, Environmental and Community Services, King County Wastewater Treatment Division | Cascadia Community CollegeBothell, WA**Date**: October 24-25, 2013 | Facilitator: Steven Fenton, Project ConsultantRecorder: Dr. Jessica Ketcham-Weber,Associate Dean for Student Learning Cascadia Community CollegeCoordinator: Dr. Jeremy Pickard, Associate DirectorAdvanced Technology Environmental and Energy Center at Eastern Iowa Community CollegesCoordinator: Ron Wheadon, Dean for Student LearningCascadia Community College |

