

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, including 1-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

<p>Durable Skills:</p> <ul style="list-style-type: none"> • 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 <p>Other Knowledge Required:</p> <ul style="list-style-type: none"> • 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 	<p>Traits and Characteristics:</p> <ul style="list-style-type: none"> • Resilience and self-motivated • Engage in continuing education • Self-starter • Comfortable with autonomy • Team-player • Credible and trust-worthy • Moral compass <p>Equipment Knowledge:</p> <ul style="list-style-type: none"> • 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) 	<p>Regulatory Knowledge:</p> <p><i>Every day:</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #f2f2f2;"> <th style="width: 33%;">Federal</th> <th style="width: 33%;">State</th> <th style="width: 33%;">Local</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> • Corps 404 (wetlands) • Endangered Species Act (ESA) • 4 F/10G (cultural resources) • NEPA (with federal funding Nexus) • Clean Air Act (if you discharge) </td> <td> <ul style="list-style-type: none"> • Hydraulic Project Approvals • State ESA • SEPA </td> <td> <ul style="list-style-type: none"> • 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 </td> </tr> </tbody> </table> <p><i>Occasional:</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #f2f2f2;"> <th style="width: 33%;">Federal</th> <th style="width: 33%;">State</th> <th style="width: 33%;">Local</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> • 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 </td> <td> <ul style="list-style-type: none"> • Model Toxics Control Act • State Taxes and subsidies (gas tax) • I-937 (renewable portfolio standards) • Water rights • WUTC </td> <td> <ul style="list-style-type: none"> • 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 </td> </tr> </tbody> </table>	Federal	State	Local	<ul style="list-style-type: none"> • Corps 404 (wetlands) • Endangered Species Act (ESA) • 4 F/10G (cultural resources) • NEPA (with federal funding Nexus) • Clean Air Act (if you discharge) 	<ul style="list-style-type: none"> • Hydraulic Project Approvals • State ESA • SEPA 	<ul style="list-style-type: none"> • 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 	Federal	State	Local	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Model Toxics Control Act • State Taxes and subsidies (gas tax) • I-937 (renewable portfolio standards) • Water rights • WUTC 	<ul style="list-style-type: none"> • 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
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Participants

Eric Carlson, Owner, Energy Environment Strategies (E2C2 Inc.)
 Emma Johnson, Resource Conservation Manager, City of Bellevue
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 Tom Lienhard, Chief Energy Efficiency Engineer, Avista Utilities
 Mark Nieman, Energy Engineering Manager, McKinstry
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 Nancy Mason, Workforce Development Manager, Sustainable Works
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 Clara Simon, Sustainability Manager, Capital Projects, University of Washington
 Greg Bush, Manager, Environmental and Community Services, King County Wastewater Treatment Division

Host College

Cascadia Community College
 Bothell, WA

Date: October 24-25, 2013

Co-facilitators, Recorder, Coordinators:

Facilitator: Steven Fenton, Project Consultant

Recorder: Dr. Jessica Ketcham-Weber,
 Associate Dean for Student Learning
 Cascadia Community College

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