**Microcredential Proposal Form**

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Department:SUS (Open Academy)

1. **Microcredential Information:**

1.1. Microcredential Title: Data and Systems Analysis in Sustainability

1.2. Type of Proposal: New Revision

1. **Detailed Microcredential Description**

2.1. Microcredential alignment with ESF goals

*Describe why this microcredential (or revision) is needed to meet current or proposed goals and outcomes of the program or College. For revisions, provide explanation and/or justification for change.*

The creation of microcredentials is explicitly stated in ESF’s Strategic Plan (Pillar 1, Theme 1, Goal 8; Pillar 1, Theme 2, Goals 1 and 2; Pillar 2, Theme 2, Goal 3).

1. **Pillar 1, Theme 1, Goal 8:** *Establish lifelong learning opportunities with online degrees, certificates, and microcredential programs.* The *Data and Systems Analysis* microcredential offers a unique, short-duration educational experience that meets the professional needs of learners seeking to begin or advance in the sustainability and data analysis fields.
2. **Pillar 1, Theme 2, Goals 1 and 2:** *Expand relevance and accessibility of an ESF education to a wider range of learners & Develop new programs in high-demand areas* *to meet industry, governmental, non-governmental, and non-profit workforce needs*. This microcredential is designed to be accessible to a broad audience, including professionals seeking to enhance their skills in data analysis as it relates to sustainability. It promotes lifelong learning and provides a pathway for career advancement in the growing field of sustainability, as well as offers an onramp to the SUS program.
3. **Pillar 2, Theme 2, Goal 3:** *Increase Revenue Streams.* The creation and offering of the *Data and Systems Analysis in Sustainability* microcredential contribute to ESF’s strategic objective of increasing revenue streams by diversifying educational offerings. Microcredentials attract non-traditional students, including working professionals and industry practitioners, who seek targeted and flexible learning opportunities. This course provides a valuable income source through enrollment fees while also enhancing the College's reputation as a leader in sustainability education. Additionally, it opens up opportunities for partnerships with businesses and organizations in both the public and private sectors, potentially leading to further financial support and collaboration.

Microcredentials should be shorter in duration than Degrees or Certificate/Advance Certificate and are designed to be a unique educational experience that provides the learner with a set of skills, competencies, and/or certifications specific to professional needs. The Data and Systems Analysis Microcredential meets the above requirements by offering learners a flexible and quick way to advance in their career by understanding the principles of sustainability data analysis and to apply those in the context of sustainable energy systems. In particular, the learners understand the concepts of residential and commercial energy auditing and experience how those are being applied in real case scenarios.

2.2. Type of Microcredential: Credit Non-Credit

*Note: For credit-bearing microcredentials, complete section 2.17. For non-credit microcredentials, complete section 2.18. Complete either section 2.17 or section 2.18. If you intend to offer both credit bearing and non-credit versions of your microcredential, you must submit two separate Microcredential Proposal forms.*

# 2.3. Anticipated launch date/semester: Fall 2025

2.4. What is your anticipated enrollment? 30

# 2.5. Potential target audience(s):

* Current Students
* Prospective Students
* Adult Learners
* Alumni
* Faculty/Staff
* K-12 Partners

If either of the below, please specify:

* Business/Industry Partners
* Community Partners

2.6. Format of the microcredential program. Check all that apply.

* + Online (synchronous)
  + Online (asynchronous)
  + Online (combined synchronous and asynchronous)
  + Hybrid
  + In-person
  + Other

If other checked above, please explain:

2.7. Is enrollment in this microcredential restricted to currently enrolled ESF students?

Yes No

2.8. Is this enrollment in this microcredential restricted to students who already hold a bachelor’s degree?

Yes No

2.9. Are there any other enrollment restrictions? If so, please describe.

# 2.10 Is this related to other microcredentials ESF offers? Yes No

If yes, list related microcredentials here:

2.11. Is this part of a series of microcredentials? Yes No

If yes, list other microcredentials in the series here:

# 2.12. Microcredential Description *(this will be used in marketing and posted to the microcredential website).*

*At the end of the description, tell the learner what they will be able to do once they complete the microcredential. For example: successful completion of this microcredential prepares you to apply for positions such as... OR - this microcredential is designed for existing professionals seeking to add specialized skills to enable them to... Be sure to explain if this is a graduate microcredential. Be sure to list if this prepares you to take an industry certification exam.*

This microcredential introduces students to various types of metrics and analyses to assess sustainability outcomes. The microcredential provides students with an overview of analytical methods and tools including spreadsheets and statistics. Specific examples of how these methods and tools are applied to sustainability solutions are included. Additionally, analysis methods and tools used by private and public sector organizations to determine the effectiveness and sustainability potential of products and systems are explored (e.g., Life Cycle Assessment, economic models, energy audit).

2.13. Connection to Labor Market *(These will be listed on the ESF and SUNY websites).*

*List in bulleted form specific skills and competencies that will be mastered.*

* Analytical Techniques
* Energy Auditing
* Life Cycle Assessment
* Spreadsheet Analysis

2.14. Industry Partner(s) (Attach supporting documents to form)

*To ensure alignment to the workforce, supportive documentation demonstrating collaboration with business/industry, P-12, or community organizations needs to be included (letter of support, feedback from 5-year review report, etc.). Briefly describe your contact with an industry partner below, and attach supporting documentation to your submission.*

See attached PDFs

# 2.15. Microcredential Student Learning Outcomes (MSLOs)

*In order to complete the microcredential, the student will be able to do the following:*

Upon successful completion of this microcredential, learners will be able to:

1. Explain sustainability metrics and discuss their strengths and limitations.
2. Enhance data literacy and analytical skills for sustainability.
3. Apply spreadsheet tools and data analysis techniques for sustainability data and system analysis.
4. Foster interdisciplinary approaches to solving sustainability issues.
5. Communicate sustainability findings effectively to diverse audiences.

Upon completion of any ESF microcredential, learners will be able to:

* Demonstrate the ability to apply specialized skills and knowledge gained through micro-credentials in real-world settings, thereby enhancing their employability in a competitive job market.
* Effectively utilize digital badges to showcase their competencies on professional platforms, facilitating better recognition of their skills by potential employers.
* Understand how micro-credentials contribute to their academic records and career trajectories, including the ability to transfer earned credits towards further academic programs and leverage their learning for future employment opportunities.

2.16. Assessment of MSLOs

*How will the MSLOs be assessed?*

In addition to assessment of the component course learning outcomes described below, the microcredential learner will complete a cumulative assessment that addresses the above listed Microcredential Learning Outcomes.

The learner’s work will be assessed using individual rubrics for each assignment. The learner will be given those rubrics prior to working on each assignment, including, e.g., discussion board interactions with instructors and other learners, individual and group projects and assignments.

## For instance, learner will work in a group of 3, or 4 persons on a case study to develop a complete EMS report including policy, environmental aspects, impacts, and improvement strategies for a company. Learners determine the costs and number of years for payback (simple) for the insulation upgrades of a residential building. Another example is analyzing the energy audit results. The analysis includes assessing the infiltration heat loss and estimating the costs and the number of years for payback for improving building airtightness.

*What* ***sharable artifacts*** *will students produce that demonstrate mastery?*

Analysis reports, spreadsheet analysis results, as well as presentation of mini project are examples of how students demonstrate mastery of what they produce.

# 2.17. Credit-bearing requirements, if applicable

For credit bearing Microcredentials

* # of Courses Required 2
* Total credit hours 6

|  |  |  |  |
| --- | --- | --- | --- |
| COURSE # | Course Title | Credits | Faculty /  Instructor/Sponsor |
| SUS 330 | Introduction Sustainability Data Analysis (Fall) | 3 | Dr. Shayan Mirzabeigi |
| SUS 400 | Analysis of Sustainable Systems | 3 | Dr. Shayan Mirzabeigi |
|  |  |  |  |
|  |  |  |  |

*\*Attach draft of syllabi for any new courses*

Minimum course GPA (if different from 2.0) \_\_\_\_\_\_\_

Time to complete: 2 semesters

Learners who have completed the above courses no more than three years prior to the learner’s microcredential completion application may be awarded a microcredential (**badge only**), unless otherwise determined by the department. If you would like to determine a period of time other than three years, please specify here.

# 2.18. Non-credit requirements, if applicable

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | Description | Anticipated Amount of Time to Complete | Faculty /  Instructor/Sponsor |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

*\*Attach draft of syllabi for any new courses*

Total time to complete: \_\_\_\_\_\_ weeks | months | (circle one)

Time intensity: \_\_\_\_\_\_\_ hours per day | week (circle one)

# 2.19 Course Materials

If the materials are the same as an existing approved course outline, a note can be made below.

\*Equivalent materials may be substituted.

|  |  |
| --- | --- |
| Cost | Title/Description |
|  |  |
|  |  |

2.20. Is grant funding available for this microcredential? If so, summarize the funding below.

# No

# 2.21. Does this microcredential stack to another certificate or degree program? If so, which one(s)?

Yes. If learners meet other program requirements, they may stack this microcredential towards a Bachelor’s degree in Sustainability Management.

2.22. Does this microcredential give the learner the opportunity to test for or otherwise earn an industry certification? If so, summarize the certification below.

No

2.23 What is the schedule of regular programmatic assessment and evaluation?  *(Best practice suggests completing program level assessment on a cycle no longer than 2-3 years, but some microcredentials might require shorter intervals).*

- Each semester, faculty and department chair will review course evaluations and make necessary revisions to courses

- Each year, the department chair and curriculum committee will review core competencies of each microcredential to ensure alignment with business and industry needs.

- Every 2 years, the department will coordinate with the Institutional Research and Assessment Coordinator to ensure that the program meets middle states and SUNY reporting guidelines

- Every 3-4 years, we will employ an external evaluator.

1. **New Institutional Impacts**

This section pertains to forecasting institutional resource needs to support the microcredential creation or revision. Consider things like staffing needs, classroom or technology resources, and/or transportation requirements and list any needed resources below. Note that, if this is a revision, only the impacts of the revision should be included.

3.1. Staffing needs: No additional staffing needs. The courses used in the microcredential are currently taught via extra service.

3.2. Classroom resources (physical facilities in a laboratory, lecture hall, flexible space, academic computing): N/A

3.3. Technology resources: (e.g., electron microscopes, UAVs, GPS receivers, survey equipment, etc.) N/A

3.4. Computing resources (software licensing, hardware, access): N/A

3.5. Library resources (subscriptions, services): N/A

3.6. Transportation requirements (budget, fees, fleet, vehicles): N/A

3.7. Forest properties or field practicum facilities (Note: Please contact Forest properties each semester to schedule): N/A

1. **Health and Safety Considerations**

Will any of the conditions or situations outlined below be present in association with the microcredential?

|  |  |  |
| --- | --- | --- |
|  | Yes | No |
| 4.1. Will substances with any of the following properties be used during instruction: flammability, toxicity, corrosivity, reactivity, registered pesticide, legally controlled, or other characteristics with the potential to cause harm or injury? |  | X |
| 4.2. Will any physical hazards be present during instruction? (e.g. machines that need safety guards; razor blades or syringes; compressed gases, etc.) |  | X |
| 4.3. Will any biological hazards be present during instruction? (e.g. handling animals [rabies or hantavirus]; cultures or stocks of infectious agents [fungal spores, viruses, bacteria, etc.]) |  | X |
| 4.4. Will any radiation hazards be present during instruction? (e.g. radiosotopes, X-rays, ultraviolet rays, lasers, etc.) |  | X |
| 4.5. Will any electrical equipment that, due to its design, location, or method of use, pose any threat to safety during instruction? (Give considerable thought to electrical use outdoors, or any potentially wet location) |  | X |
| 4.6. Will there be any personal safety issues related to the class? (e.g. due to time of day or location, at the end of any organized class exercise, will students be in danger of physical assault, etc.) |  | X |
| 4.7. Will any students be driving official state or research sponsored land or water vehicles during any class or instructional exercise? |  | X |
| 4.8. Will any type or personal protective equipment be necessary during class exercises? (e.g. hard-hats, eye/face protection, hearing protection, hand/foot protection, lab coat, visibility clothing, etc.) |  | X |

**6. SIGNATURES**

\*Microcredentials that span disciplines, departments, or schools will require signatures from all stakeholders.

Shayan Mirzabeigi 09/26/2024

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Author of microcredential Date

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Department Academic Affairs Committee Representative Date

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Department Chair Date

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Provost Date