

## Eco-medicine Code Book

| Parent Code          | Sub Code 1             | Sub Code 2                        | Sub Code 3 | Description<br>(Based on any mention of...)  | Examples   |
|----------------------|------------------------|-----------------------------------|------------|--|--|
| <b>Mental health</b> |                        |                                   |            | Mental health status, mental health disorders, or factors that are contributing to students' mental health |  |
|                      | <b>Dissatisfaction</b> |                                   |            | Dissatisfaction or discontentedness  | Stressful situations, dislike of circumstances           |
|                      |                        | <b>Causes of dissatisfaction</b>  |            | Source of a student's dissatisfaction concerning mental health   | Finances, social relationships, grades                   |
|                      |                        | <b>Results of dissatisfaction</b> |            | Effects of a student's dissatisfaction or stress on their actions or outlook concerning mental health      | Stress, anxiety, sadness, changes in behavior            |
|                      | <b>Joy</b>             |                                   |            | Satisfaction or contentedness  | Positive/neutral situations, acceptance of circumstances |
|                      |                        | <b>Causes of Joy</b>              |            | Source of a student's satisfaction or  | Finances, social relationships, grades                   |

|  |                    |   |  |   |  |
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|  |                    |   |  | contentment concerning mental health  |  |
|  |                    | <b>Results of Joy</b>   |  | Effects of a student's satisfaction or contentment on their actions or outlook concerning mental health | Happiness, calmness, positivity, changes in behavior |
| <b>Course Qualities and Characteristics + Academic Effectiveness</b> |                    |   |  | Course learning, engagement, and comments on the learning environment                                   |  |
|  | <b>Class Types</b> |   |  | Types of academic courses   |  |
|  |                    | <b>Lecture, Lab, Field, Field trip(s), Research, Seminar, Section, Office Hours</b> |  | Different types of academic classes offered by the university   |  |
|  | <b>Work Type</b>   |   |  | Specific academic classroom activities  |  |
|  |                    | <b>Homework, Quiz/Test/Exam, Group</b>  |  | Different types of academic work that are assigned/required   |  |

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|  |   | <b>Project/Work,<br/>Independent<br/>Project,<br/>Supplemental<br/>Videos</b> |  |  |  |
|  | <b>Comprehension<br/>/ Academic<br/>Success</b> |   |  | Students learning or understanding   |  |
|  | <b>Methods of<br/>Teaching/Learn<br/>ing</b>    |   |  | Methods of teaching and/or learning types  |  |
|  |   | <b>Visual</b>   |  | Information presented in a visual format   | Graphs/images, slides, presentations, videos, specimen observation |
|  |   | <b>Auditory</b>   |  | Information from an instructor in an auditory format                             | Lectures, presentations, videos, recordings (podcast)              |
|  |   | <b>Verbal</b>   |  | Processing information by reciting and/or writing                                | Presenting material, notes, recitation, journal                    |
|  |   | <b>Hands-On</b>   |  | Processing information through physical interaction with the subject of interest | Touch, dissection  |
|  |   | <b>Reading</b>  |  | Information presented in written format  | Textbooks, manuals, papers   |

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|  | <b>Engagement</b>           |                            |  | Students' interest level in coursework        |   |
|  |                             | <b>Positive Engagement</b> |  | Showing interest/engagement in learning       | Interest, enthusiasm, class attendance, focus   |
|  |                             | <b>Negative Engagement</b> |  | Showing disinterest/disengagement in learning | Disinterest, apathy, class absence, zoning out, falling asleep  |
|  | <b>Learning Environment</b> |                            |  | Space in which students can learn             |   |
|  |                             | <b>Effective</b>           |  | Environment facilitating learning             | Friendly/helpful teaching staff, organized class structure, room for discussion, feeling safe and comfortable |
|  |                             | <b>Ineffective</b>         |  | Environment impairing learning                | Unfriendly/unhelpful teaching staff, disorganized class structure, lack of participation, feeling unsafe      |
|  |                             | <b>Indoors</b>             |  | Learning that takes place inside              |   |
|  |                             | <b>Outdoors</b>            |  | Learning that takes place outside             |   |

|                              |                                     |  |  |   |   |
|------------------------------|-------------------------------------|--|--|---|---|
|                              |                                     | <b>Online</b>                              |  | Virtual learning  | Class held online (synchronously or asynchronously)                           |
|                              |                                     | <b>Hybrid</b>                              |  | In-person and virtual learning  | Class has a combination of online and in-person learning opportunities        |
|                              | <b>Suggestions and Improvements</b> |  |  | Feedback regarding classes  | Comments to improve class structure, grade distributions, social interactions |
| <b>Inclusion / Exclusion</b> |                                     |  |  | Factors that encourage or discourage students from opportunities  |   |
|                              | <b>Barriers</b>                     |  |  | Obstacles that prevent accessibility  |   |
|                              |                                     | <b>Barriers to College</b>                 |  | Obstacles that negatively impact an individual's ability to attend college  |   |
|                              |                                     | <b>Barriers to Classes / Opportunities</b> |  | Obstacles that negatively impact an individual's ability to attend or succeed in classes and academic opportunities |   |
|                              |                                     |  | <b>Logistics / Course Availability</b> | Obstacles regarding academic courses and opportunities  | Scheduling conflicts, problems with course availability, degree               |

|  |                    |  |                                  |   |  |
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|  |                    |  |                                  |   | requirements, financial barriers, lack of equipment                            |
|  |                    |  | <b>Social Pressures</b>          | The influence of others on one's own actions, thoughts, and behaviors                     | Imposter syndrome, meeting social expectations                                 |
|  |                    |  | <b>Awareness</b>                 | Knowledge regarding a class's existence or availability                                   | Unaware of class' existence and/or logistics                                   |
|  |                    |  | <b>Adjustment (Adaptability)</b> | Transitioning to college  | Changes in course load, academic rigor, college life, and personal adjustments |
|  |                    |  | <b>Difficulty (Rigor)</b>        | Perceived difficulty of a course  | Demands of a course  |
|  |                    |  | <b>Environment</b>               | The physical characteristics or attributes of an environment                              | Pollen, wild animals, poison oak, rough terrain                                |
|  |                    |  | <b>Self / Other</b>              | Personal attitude or characteristics of an individual; typically used as an umbrella code | Personality traits and attitudes   |
|  | <b>Motivations</b> |  |                                  | Incentives that motivate an individual's enthusiasm or actions                            |  |

|                             |                        |  |  |   |   |
|-----------------------------|------------------------|--|--|---|---|
|                             |                        | <b>Motivations for College</b>                 |  | Factors that influence an individual to attend college  |   |
|                             |                        | <b>Motivations for Classes / Opportunities</b> |  | Factors that influence an individual's desire to participate in classes and academic opportunities  |   |
|                             |                        |  | <b>Social Incentives</b>               | Motivation based on social context  | Desire to impress   |
|                             |                        |  | <b>Logistics / Degree Requirements</b> | Motivation drawn from an individual's desire to graduate  | Class availability, classes required for a degree                   |
|                             |                        |  | <b>Interest</b>                        | Motivation based on personal interest   | Courses that pique a student's interest                             |
|                             |                        |  | <b>Confidence</b>                      | Motivation based on belief in oneself   | Assured in one's abilities in meeting requirements                  |
|                             |                        |  | <b>Self / Other</b>                    | Motivation drawn from the personal experiences of an individual; typically used as an umbrella code | Personality traits and attitudes                                    |
| <b>Social Relationships</b> |                        |  |  | Relationship with others  | Feeling supported and/or inspired by people                         |
|                             | <b>Friends / Peers</b> |  |  | Personal or professional relationships with others  | Class/research friends, lab partners, acquaintances, peers, mutuals |

|   |                                     |  |  |                                       |   |
|---|-------------------------------------|--|--|---------------------------------------|---|
|   | <b>Teaching Assistant</b>           |  |  | Relationship with teaching assistants | Graduate students, learning/research assistants (TAs, ULAs)                           |
|   | <b>Professor</b>                    |  |  | Relationship with professors          | Course instructors, professors  |
|   | <b>Family</b>                       |  |  | Relationship with family              | Nuclear family  |
| <b>University Qualities and Characteristics</b> |                                     |  |  | Attributes describing the university  |   |
|   | <b>Quarter System / Pacing</b>      |  |  | Pacing or timing of the university    | Academic quarter being shorter but teaching the same amount of material as a semester |
|   | <b>Suggestions and Improvements</b> |  |  | Feedback regarding the university     | Comments to improve university structure, organization, values                        |



## **General Guidelines**

1. Avoid coding excerpts that deviate significantly from the scope of work.
2. **Coding is subjective.** Consider having one or two peers read over your applied codes.
3. When coding, code the parent and ALL relevant subcodes.
4. If applicable and necessary, reference the audio recording to clarify confusing excerpts.
  - Notably, tone of voice can be clarified to facilitate coding.
5. If the content of an excerpt contradicts itself, code to account for the contradictions.
  - I.e., “I’m very happy learning in classes I am interested in, but I become dissatisfied and anxious when I have a test,” should be coded under Mental Health -> Joy AND Mental Health -> Dissatisfaction in addition to other relevant codes.
6. If the content of an excerpt does not closely match the codes in the Codebook, code the excerpt as best as possible rather than leaving the excerpt blank.
  - Even if using the excerpt is ultimately decided against, coding facilitates data searches.
7. Some codes, such as “University Quality and Characteristics,” were intentionally designed to be broad to facilitate coding.
8. “Outside” and “Inside” codes are only applied in excerpts that indicate learning inside or outside is significant to one’s learning experience. In addition, they are also applied in implied circumstances when relevant.
  - I.e., “I doze off in lecture because I am sitting down for the entire class period,” would be coded as Learning environment → Inside because being inside is relevant to their learning experience, and lecture is implied to occur inside unless stated.
  - I.e., “I prefer studying in the library because the environment is more controlled,” would have the following codes: Learning environment → Inside. This excerpt explicitly states the student prefers learning inside and is coded as such.
  - I.e., “My lecture classes are large, so I don’t ask questions,” would not necessarily be coded as Learning environment → Inside because being inside is not clearly affecting the student’s learning experience.
9. “Work Type” is only applied if the speaker explicitly states the type of work and/or emphasizes its importance.
  - I.e., “I don’t like lab work” vs. “I don’t like quizzes in the lab,” where “quizzes” are explicitly mentioned.
10. “Social Relationships” codes are applied when the speaker discusses how their (hypothetical or actual) relationship or interaction with a peer/friend, family member, professor, or teaching assistant has impacted their outlook or experiences in college.
  - I.e., “My parents have pushed me to go to college” would have the following codes: Social Relationships → Family. This person’s family has played a key part in their academic endeavors.

- I.e., “I feel like humanities peers have been more open and accepting of me than my peers in STEM,” would be coded as Social Relationships → Friends / Peers because this person’s peers are shaping their college experience.
- I.e., “There are a lot of students in my lecture class,” would not necessarily be coded as Social Relationships → Peers because the student is making a neutral comment about their class size and does not mention how their peers are impacting them.
- I.e., “In lecture, I zone out when the professor drones on” would not necessarily be coded as Social Relationships → Professor because this instance is an indirect interaction between the student and the professor, and the student’s outlook is not impacted. Rather, Learning Environment codes could be applied with more detail.
- I.e., “My professor thinks that biology is the most important science,” would not necessarily be coded as Social Relationships → Professor because this student is not talking about a meaningful interaction with their professor. Rather, the student is recalling what their professor said.
  - Essentially, just because a peer/friend, family member, professor, or teaching assistant is mentioned does not always mean that the excerpt should be coded.
  - We applied these Social Relationship codes primarily in consideration of mental health.

## Code Co-occurrence Chart

| Codes                                |  | Course Qualities and Characteristics |             |       |               |     |         |              |          |         |         |                          |            |                    |                    |                      |     |      |        |         |        |          |                              |          |                      |         |                    |        |                              |           |
|--------------------------------------|--|--------------------------------------|-------------|-------|---------------|-----|---------|--------------|----------|---------|---------|--------------------------|------------|--------------------|--------------------|----------------------|-----|------|--------|---------|--------|----------|------------------------------|----------|----------------------|---------|--------------------|--------|------------------------------|-----------|
|                                      |  | Course Qualities and Characteristics | Class Types | Field | Field trip(s) | Lab | Lecture | Office Hours | Research | Section | Seminar | Comprehension / Academic | Engagement | Negatively Engaged | Positively Engaged | Learning Environment | Bad | Good | Hybrid | Indoors | Online | Outdoors | Methods of Teaching/Learning | Auditory | Physical/Kinesthetic | Reading | Verbal/Linguistics | Visual | Suggestions and Improvements | Work Type |
| Course Qualities and Characteristics |  |                                      | 147         | 66    | 9             | 29  | 50      | 7            | 6        | 12      |         | 32                       | 48         | 13                 | 34                 | 105                  | 21  | 42   | 7      | 11      | 6      | 39       | 40                           | 6        | 32                   |         | 7                  | 15     | 34                           | 32        |
| Class Types                          |  | 147                                  |             | 69    | 11            | 30  | 50      | 6            | 6        | 12      |         | 20                       | 41         | 12                 | 28                 | 80                   | 13  | 32   | 7      | 7       | 5      | 33       | 34                           | 5        | 28                   |         | 2                  | 14     | 23                           | 26        |
| Field                                |  | 66                                   | 69          |       | 9             | 9   | 5       |              |          |         |         | 10                       | 19         |                    | 18                 | 34                   |     | 12   |        | 2       |        | 30       | 19                           | 3        | 17                   |         | 2                  | 8      | 8                            | 12        |
| Field trip(s)                        |  | 9                                    | 11          | 9     |               | 1   | 1       |              |          | 1       |         | 2                        | 3          |                    | 3                  | 6                    |     | 2    |        | 1       |        | 6        | 4                            | 1        | 4                    |         |                    | 1      | 3                            | 3         |
| Lab                                  |  | 29                                   | 30          | 9     | 1             |     | 5       |              |          | 2       |         | 3                        | 12         | 3                  | 9                  | 16                   | 5   | 7    |        | 1       | 1      | 7        | 11                           |          | 11                   |         |                    | 3      | 3                            | 15        |
| Lecture                              |  | 50                                   | 50          | 5     | 1             | 5   |         | 2            |          | 3       |         | 8                        | 13         | 9                  | 4                  | 30                   | 9   | 11   | 7      | 7       | 4      | 3        | 6                            | 3        | 1                    |         | 1                  | 5      | 9                            |           |
| Office Hours                         |  | 7                                    | 6           |       |               |     | 2       |              |          | 2       |         | 1                        | 2          |                    | 2                  | 6                    |     | 5    | 1      |         |        |          | 1                            | 1        |                      |         |                    | 1      | 1                            |           |
| Research                             |  | 6                                    | 6           |       |               |     |         |              |          |         |         |                          | 2          |                    | 2                  | 1                    |     | 1    |        |         |        |          | 3                            |          | 3                    |         |                    | 1      |                              | 2         |
| Section                              |  | 12                                   | 12          |       | 1             | 2   | 3       | 2            |          |         |         | 3                        | 1          |                    | 1                  | 7                    | 2   | 7    |        |         |        |          | 1                            |          | 1                    |         |                    |        | 5                            | 1         |
| Seminar                              |  |                                      |             |       |               |     |         |              |          |         |         |                          |            |                    |                    |                      |     |      |        |         |        |          |                              |          |                      |         |                    |        |                              |           |
| Comprehension / Academic             |  | 32                                   | 20          | 10    | 2             | 3   | 8       | 1            |          | 3       |         |                          | 9          |                    | 9                  | 19                   | 1   | 10   | 2      | 3       | 1      | 8        | 15                           | 2        | 12                   |         | 3                  | 5      | 5                            | 5         |
| Engagement                           |  | 48                                   | 41          | 19    | 3             | 12  | 13      | 2            | 2        | 1       |         | 9                        |            | 13                 | 34                 | 32                   | 3   | 10   | 3      | 5       | 2      | 19       | 15                           | 3        | 13                   |         |                    | 6      | 3                            | 13        |