**APPENDIX S1**

**Table S1: Monitoring and Evaluation Metrics.**

|  |  |  |
| --- | --- | --- |
| **Goal** | **Ongoing Monitoring of Outputs** | **Evaluation of Outcomes** |
| Science Leadership | * # research articles published
* # presentations delivered
* # national/international presentations delivered by faculty and students
* #/% student authors in publications
 | * # citations of published articles
* # and diversity of local community programs (non-profits, citizen groups, etc.) who have engaged with the program, students, and/or faculty about their research
* Altmetric composite score for social media reach of the articles and videos by program students and faculty
 |
| Curriculum Relevancy | * # seminars and colloquia held
* # attending participants (seminars & colloquia) and students completing
* # internships completed (or % students completing internships)
* #/% course completion and program graduates
* Annual assessment of curriculum relevancy by External Advisory Board
* # courses taught by interdisciplinary teams of 2 or more faculty
 | * # graduates working in STEM-focused positions
* Readiness of interns to address real-world challenges as measured by qualitative interviews with managers/directors at internship sites
* # collaborative a) publications and b) grant applications by students and interdisciplinary teams of faculty
 |
| Community Impact | * # presentations by students and faculty to/with community
* # internships completed
* # documentary videos produced
* # hours of community volunteer activities by student and faculty participants
 | * # local community problems addressed through faculty and student research as measured by student, faculty, and partner surveys
* Impactful accomplishments of program participants at the organizations they completed internships as measured by qualitative interviews with managers at internship sites
 |
| Broader Applicability | * # students/faculty participating in exchanges internationally and with communities outside of Detroit
* # presentations made at a global/international level
* # new research collaborations with scientists outside metro Detroit
 | * # program research studies (student & faculty) used to address relevant problems outside of Detroit (e.g. Baltimore, Puerto Rico)
* Quality of WSU's relationships with non-university partners as measured by qualitative interviews with managers/directors at partner organizations
 |
| STEM Recruitment Pipeline | * # completed documentary videos
* # metro Detroit high school students working with program students and faculty on research videos
* # presentation attendees from undergraduate programs or secondary schools
 | * # applicants for STEM program at WSU
* #/% applicants from the Detroit area for STEM program at WSU
* #/% minority applicants for STEM program at WSU
 |
| Program Sustainability | * # grants applied for and # funded annually
* # student aid packages available from WSU for interdisciplinary graduate students
 | * #/amount of multi-year funding projects of interdisciplinary students and research
* #/amount of research grants funded annually
* Integration of interdisciplinary research in the WSU strategic plan
 |

**Table S2: Urban Sustainability Dual-Title PhD Degree Program Curricula.** Competency Domains refer to 1) Problem Definition, 2) Research Methods, 3) Communication, 4) Problem-Solving, and 5) Collaboration. Competencies are expected to be attained upon completion of the course. A full plan of study, including any additional courses, were determined by the trainee and their advisor(s) and reviewed and approved by the trainee’s dissertation committee.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Department** | **Class Number** | **Class Name** | **Credits** | **Competency Domains** |
| **CORE COURSES****Required for all T-RUST trainees** |
| Biology | BIO 7310 | Sustainability of Urban Environmental Systems | 2 | 1,2,3,4,5 |
| Anthropology | ANT 5060 | Urban Anthropology | 3 | 1,3,4 |
| C&E Engineering | CE 5410 | Energy, Emission, Environment | 3 | 1,2,4,5 |
| Communication | COM 7170 | Risk and Health Communication (online) | 3 | 1,2,3,5 |
| Cross-Listed | UP 6470 | Environmental Planning & Urban Ecology | 3 | 1,2,3,4,5 |
| **ELECTIVE COURSES****At least 12 credits from the following including one course from each sub-group/discipline** |
| Anthropology | ANT 6570 | Archaeology Laboratory Analysis | 3 | 1,2,4 |
| Biology | BIO 5040 | Biometry | 4 | 1,2,4 |
| Biology | BIO 5180 | Molecular Aquatic Ecology  | 3 | 1,2,4 |
| Biology | BIO 7540 | Landscape Ecology | 3 | 1,2,4 |
| Biology | BIO 6420 | Ecotoxicology | 3 | 1,2,4,5 |
| C&E Engineering | CE 7995 | River Assessment and Restoration | 3 | 1,2,4,5 |
| C&E Engineering | CE 6270 | Sustainability Assessment & Management | 3 | 1,2,3,4,5 |
| C&E Engineering | CE 7280 | Applied Environmental Microbiology | 3 | 1,2,4,5 |
| Communication | COM 7160 | Crisis Communication  | 3 | 1,3,4,5 |
| Economics | ECO 5230 | Environmental Economics | 4 | 1,2,4 |
| Economics  | ECO 6200 | Advanced Regulation and Regulated Industries | 4 | 1,2,4 |
| Economics  | ECO 6520 | State & Local Public Finance | 4 | 1,2,4 |
| Economics  | ECO 6800 | Urban Economics | 4 | 1,2,4 |
| FM & Public Health | FPH 7420 | Principles of Environmental Health  | 3 | 1,4 |
| Geology | GEL 5000 | Geological Site Assessment | 4 | 1,3,4,5 |
| Geology | GEL 5510 | Environmental Fate and Transport of Pollutants | 4 | 1,2,4 |
| Law | LEX 7231 | Environmental Law  | 3 | 1,3,4 |
| Cross-Listed | PSC/CE 6910 | Pharmaceutical Waste: Env Impact & Management  | 2 | 1,4 |
| Urban Planning | UP 6260 | Land Use Policy and Planning  | 3 | 1,3,4,5 |
| Urban Planning | UP 6700 | Geographic Information Systems | 4 | 1,2,3,4,5 |