

Project Tasks

| Task Name |
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| Task 1.0: Competition Preparation |
| Task 1.1 Competition Registration |
| Task 1.2 Obtain Laboratory Access |
| Task 1.2.1 NAU EnE Lab Rapid Request Form |
| Task 1.2.2 Laboratory Planning Document |
| Task 1.3 Short Course Enrollment |
| Task 2: Analyze Treatment Options |
| Task 2.1 Treatment Research |
| Task 2.1.1 Literature Review |
| Task 2.1.2 Determine Criteria for Decision |
| Task 2.2 Jar Experiments |
| Task 2.2.1 Conduct Experiment Planning |
| Task 2.2.2 Conduct Experiments |
| Task 2.2.3 Sample Analysis |
| Task 2.3 Selection of Best Treatment Process |
| Task 3: Bench Scale Model Design |
| Task 3.1 Process Flow Diagram |
| Task 3.2 Parts and Materials Selection and Sourcing |
| Task 3.3 Process Design |
| Task 3.4 Drawing Production |
| Task 4: Fabrication of Bench Scale Model |
| Task 4.1 Fabrication |
| Task 4.2 Post-Treatment Sample Tests |
| Task 4.2.1 QA/QC PROCEDURE |
| Task 4.2.2 VOC Testing |
| Task 4.2.3 Additional Analysis |
| Task 4.3 Model Redesign |
| Task 5 Full-Scale Design |
| Task 5.1 Bench Scale Model Scaling |
| Task 5.2 Hydraulic Analysis |
| Task 5.2.1 Tank Selection |
| Task 5.2.2 Pipe Selection |
| Task 5.2.3 Pump Selection |
| Task 6: Techno-Economic Analysis |
| Task 6.1: Short Course Attendance |

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| Task 6.2: Economic Analysis |
| Task 6.2.1 Construction Cost |
| Task 6.2.2 Operation Cost |
| Task 6.2.3 Lifecycle Cost |
| Task 6.3: Techno Analysis |
| Task 6.3.1 Removal Efficiency |
| Task 6.3.2 Process Requirements and Investment |
| Task 7: Impacts Analysis |
| Task 7.1: Economic Impacts |
| Task 7.2: Environmental Impacts |
| Task 7.3: Societal Impacts |
| Task 8: Project Deliverables |
| Task 8.1 Competition Deliverables |
| Task 8.1.1 Experimental Safety Plan |
| Task 8.1.2 Preliminary Report |
| Task 8.1.3 Technical Report |
| Task 8.1.4 Presentation and Competition |
| Task 8.2 30% Submittal |
| Task 8.3 60% Submittal |
| Task 8.4 90% Submittal |
| Task 8.5 100% Submittal |
| Task 9: Project Management |
| Task 9.1: Meetings |
| Task 9.2: Schedule Management |
| Task 9.3: Resource Management |