# Appendix C: Project Plan – Work Breakdown Structure, Responsibilities Assignment Matrix, and Gantt Chart

**[Project Title] [Technical Project Example]**

**Project Team Organizations**

1. [Organization 1]
2. [Organization 2]
3. [Organization 3]
4. [Organization 4]

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| **WBS** | | | **RAM** | | | |
| Level 2 (Segments) | Level 3 (Tasks, Deliverables, Milestones, Go/No-Go Decisions) | Pg # | Organizations | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1.0 Develop New Cell Line (Deliverable) | 1.1 Engineer cells to stably express mAbZ in fed batch culture. (Task) |  | L | C | P |  | X | X |  |  |  |  |  |  |  |
|  | * 1. Characterize cells for XYZ using techniques ABC (Task) |  | L | P | P | P |  | X | X | X | X | X |  |  |  |
|  | 1.3 Milestone: Cell line titer of X g/L and cell density of X cells/ml |  |  |  | L | C |  |  | X |  |  |  |  |  |  |
|  | 1.4 Identify CQA for mAbZ. (Task) |  |  |  | P | L |  |  | X | X |  |  |  |  |  |
|  | 1.5 Go/No-Go: Expressed mAbZ meet CQA specifications for within X% for Assay A, and Y% for Assay B |  |  |  |  | L |  |  |  | X |  |  |  |  |  |
| 2.0 Improve Cell Characterization Assay  (Deliverable) | 2.1 Combine Technology A with B into one assay. (Task) |  | P | L |  |  |  |  |  | X | X |  |  |  |  |
|  | * 1. Determine assay precision and specificity (Task) |  | P | L | P | P |  |  |  |  | X |  |  |  |  |
|  | * 1. Validate assay performance for cell types XYZ against existing technologies (Task) |  | P | L |  |  |  |  |  |  | X | X | X | X |  |
|  | 2.4 Milestone: Assay protocol available for review. |  |  |  | L |  |  |  |  |  |  |  |  | X |  |
|  | 2.5 Go/No-Go: Assay meets X specification within X%. Assay can be completed in X hours or less. |  | L | C | C |  |  |  |  |  |  |  |  | X |  |
| 3.0 Deliverable Z | 3.1 Task 1 |  |  |  | P | P |  |  |  |  |  |  | X | X | X |
|  | 3.2 Task 2 |  |  |  | P | P |  |  |  |  |  |  |  | X | X |
|  | 3.3 Go/ No-Go: Decision Z (Include Specific, Measurable, Attainable, Realistic, Timely requirements to proceed) |  |  |  |  | P |  |  |  |  |  |  |  |  | X |
|  | 3.4Task 3 |  | L |  | P |  |  |  |  |  |  |  |  |  |  |
|  | 3.5 Milestone: Result Z, (Include Specific, Measurable, Attainable, Realistic, Timely description) |  | L | P | P | P |  |  |  |  |  |  |  |  |  |
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# Appendix C: Project Plan – Work Breakdown Structure, Responsibilities Assignment Matrix, and Gantt Chart

**[Project Title] [Workforce Project Example]**

**Project Team Organizations**

1. [Organization 1]
2. [Organization 2]
3. [Organization 3]
4. [Organization 4]

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| **WBS** | | | **RAM** | | | | **Gantt Chart** | | | | | | | | | | | | | | | | | |
| Level 2 (Segments) | Level 3 (Tasks, Deliverables, Milestones, Go/No-Go Decisions) | Pg # | Organizations | | | | Month | | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 1.0 Create Course for X (Deliverable) | 1.1 Draft course content (learning objectives, course outline and syllabus) (Task) |  | L | C | P |  | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1.2 Company X provides input on course content, learning objectives. (Task) |  | P | L |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1.3 Content updated to reflect changes from feedback. (Task) |  |  | L |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1.4 Course content submitted to university curriculum committee for review and approval. (Task) |  | L |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1.5 Record online course content (Task) |  | L | C | P |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1.6 Revisions to online content (Task) |  | L |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1.7 Milestone: Completed curriculum available to all participating organizations for review. |  |  |  | P | L |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1.8 Go/No-Go: Course content developed and all partners agree on content |  |  |  |  | L |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.0 Beta Test of course content  (Deliverable) | 2.1 Organize beta test panel (Task) |  | P | L |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |  |
|  | 2.2 Run beta test Panel (Task) |  |  |  |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |
|  | 2.3 Milestone: Collect Beta test panel feedback and review feedback |  |  |  | L |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
|  | 2.4 Go/No-Go: Beta test feedback positive or with minor adjustments to course content. |  | L | C | C |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |
| 3.0 Pilot Run of Course | 3.1 Organize Pilot Run of Course (Task) |  | L | C | C | C |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |
|  | 3.2 Milestone: Pilot Run of Course |  | L | P | P | P |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
|  | 3.3 Assessment and written report of Pilot Course Run (Task) |  | L |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |
| 4.0 Deliverable Z | 4.1 Task 1 |  |  |  | P | P |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |
|  | 4.2 Task 2 |  |  |  | P | P |  |  |  |  |  |  |  |  | X | X | X |  |  |  |  |  |  |  |
|  | 4.3 Go/ No-Go: Decision 3 (Include Specific, Measurable, Attainable, Realistic, Timely requirements to proceed) |  |  |  |  | P |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
|  | 4.4 Milestone: Result 3, (Include Specific, Measurable, Attainable, Realistic, Timely description) |  | L | P | P | P |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |
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**INSTRUCTIONS**

An example template is provided above; the proposer is to use this template and modify the key elements to match the scope of work. The key elements include the work to be done, the page number reference, the contributions of the project team organizations, and the timeline. **These instructions may be deleted upon WBS submission.**

**Work Breakdown Structure (WBS)**

The WBS identifies the work to be done and references a page number in the proposal narrative where additional details can be found.

* Level 1 of the WBS is the project title.
* Level 2 Segments are discrete pieces of work that will be completed as part of the project. Teams are required to budget to Level 2 Segments.
  + **Deliverables** include verifiable products, results, and/or capabilities that serve as the outcome of the execution of work.
* Level 3 further breaks down the work into smaller parts. This may include tasks, subtasks, deliverables, milestones, and go/no-go decision points.
  + **Tasks** identify interrelated yet distinct themes of work that will be completed to compose the project’s entire scope of work. Tasks are not synonymous with aims, which are general research steps to test a hypothesis.
  + **Subtasks** offer a technically detailed breakdown of the work to be done within a task. Delineating a task as a series of subtasks offers the project team an opportunity to more clearly detail the dates, work, approach, and/or team members to complete each subtask.
  + **Milestones** have a specific date for achievement and can be at the task or subtask level. Milestones allow for an evaluation of the advancement of the work plan at specific points. Milestones should be specific and quantifiable whenever possible.
  + **Go/No-Go Decision Points** are specific milestones that provide a decision point for the work**.** The WBS **MUST** include established go/no-go decision points during the course of the project plan to evaluate the merits of the continuation of the work. Go/No-Go decision points **should occur 3-7 months from the start of the project and not within last 2 months of project.** Go/no-go decision points must be independently verifiable to be used to demonstrate progress made and should be specific and quantifiable whenever possible.

**Responsibility Assignment Matrix (RAM)**

The RAM identifies how the responsibilities will be shared across the project team. Identify each project team organization (1, 2, 3, 4, etc.) and specify which organizations will be involved in each segment of work.

* **Lead (L) –** This organization is ultimately accountable and responsible for the segment of work to be done
* **Participant (P) –** This organization is substantively contributing to the segment of work to be done
* **Consulted (C)** – This organizationwill be consulted about the segment of work to be done, but will not be carrying out the work

**Gantt Chart**

The Gantt Chart shows the timeline for each WBS element. Indicate when each segment of work will take place or the month a milestone is due with color or an “X”