**Labor, Cost & Schedule Document**

**CLICK SENSOR HUB**

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**Ingram School of Engineering**

**SPONSOR Company Name**

**Street Address**

**City, State Zip Code**

**Date**



Remove this box and put an approved Sponsor logo in this space ONLY if your Sponsor approves doing so.

If they do not, center the UNM logo.

*To use this template:*

1. *Replace any red italicized text with your own text. You may add sections as needed for your particular projects, however, you must address each section* **even if NOT APPLICABLE***.*
2. *Enter the project name in the header.*
3. *If your document is very long, break each numbered chapter into its own document section, beginning it on a new page. This will make it easier to replace/update*
4. *Don't forget to update the Table of Contents when finished! (right-click on the table)*
5. *Delete these instructions and any other italicized instructions.*

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*The Labor-Cost-Schedule Document describes*

* *The labor categories needed to complete your project, how much, and their cost*
* *The materials & equipment costs associated with your project*
* *A Gantt Chart of the schedule*

# **Introduction & Summary**

*Name your project and give a very brief description, like the Intro from the Functional Spec.*

*State the date when the project will be complete.*

*State a summary of the costs: Labor & Materials and the total cost.*

# **Labor**

## Labor Categories

*List the labor categories and for each category, WHY or HOW it is needed. You may add categories if needed. If a category is not needed then BRIEFLY state why it is not applicable to your project.*

|  |  |
| --- | --- |
| **Project Labor Categories** | |
| **Labor Category** | **Justification** |
| Design Engineer |  |
| Test Engineer |  |
| Technical Writer |  |
| Technician |  |
| Fabricator / Assembler |  |
| Drafting / CAD |  |
| Marketing Analyst |  |
| Administrative |  |
| Management / Supervision |  |
| Consulting |  |
| Contractor |  |

## Labor Rates

*Do a little online research to find out what these various labor categories cost. You’ll likely either get an hourly, or annual, salary. If annual, convert to hourly as there are 2,080 working hours in a year.*

*List a burden rate (double the hourly rate).*

***STATE CLEARLY the burden rate and why you chose it.*** *(e.g. median pay for job in industry, mean pay for job at Sponsor’s company, etc.)*

*Then, apply this rate to your labor categories and complete the table.*

|  |  |  |
| --- | --- | --- |
| **Labor Categories and Burdened Hourly Costs** | | |
| **Labor Category** | **Burdened Hourly Cost** | **Justification** |
| Design Engineer |  |  |
| Test Engineer |  |  |
| Technical Writer |  |  |
| Technician |  |  |
| Fabricator / Assembler |  |  |
| Drafting / CAD |  |  |
| Marketing Analyst |  |  |
| Administrative |  |  |
| Management / Supervision |  |  |
| Consulting |  |  |
| Contractor |  |  |

*General Note: You should include elements related to the and your sponsor in this estimate. It gives a more realistic view of what a project actually costs. Just because you are given free access something does not mean that it can be left off the list.*

*This means including the value of your Sponsor’s time, Faculty Advisor’s Time, equipment, and facilities that you will use, etc.*

*Do NOT ask them their salary; use their job title to estimate it.*

## Total Cost of Labor

*You will fill in the table below. What is shown is an EXAMPLE.*

*Do this by:*

* *Including a column for each labor type needed for your project*
* *Include the burdened hourly rate for each labor type*
* *List the tasks necessary to complete the project in the left-most column*
* *State how many hours are necessary to complete the task, for each labor type,* ***for YOUR project*** *(NOT the numbers below!!)*

<http://www.writingassist.com/pdfs/WAI_EstimatingWritingProjects_V4_1_2011.pdf> *is useful for estimating writing time.*

* *Estimate at least 1 hr of management time per 4 hours of other time.*
* *Multiply out and add them up!*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **LABOR ESTIMATE - DO NOT COPY THIS IS AN EXAMPLE ONLY!!!!!!!!!!!!** | | | | |
|  | **Engineer** | **Test Engr** | **Fabricator** | **TOTAL** |
| Burdened Hourly Rate | $100 | $80 | $40 |  |
| **Task** | **Hours Required** | | |  |
| Project definition | 20 |  |  | $2,000 |
| Functional Specification | 20 | 5 |  | $2,400 |
| Simulation | 40 |  |  | $4,000 |
| Test Plan | 10 | 20 |  | $2,600 |
| Prototype Assembly | 5 | 5 | 40 | $3,650 |
| Characterization | 10 | 30 |  | $3,400 |
| Total Burdened Cost |  |  |  | $35,400 |

*Note: Your table may be larger than this. You may need to put in a ‘section break’ and define the table page to be landscape (layout > breaks > page). Image is everything!*

*How many hours? Each student on the team is expected to put in at least 9 hours a week. Your project duration is about 25 weeks. So each student is about 225 hours, or 675 hours for a three-person team.*

# **Materials**

*Besides labor, your project will require physical items, each of which have an associated cost. You will list them below - not here.*

## Capital Expenses

*A****capital expenditure or expense****is incurred when a business increases its value by spend money on an asset that will be useful longer than one year. It is typically defined to be a purchase of $5,000 or more. An oscilloscope costing $10,000 is a capital expense. $10,000 of soda, paper plates and plastic war for company events would not be capital, but rather, non-capital.*

*Consider the facilities and resources you have previously listed and complete the table.*

|  |  |  |
| --- | --- | --- |
| **CAPITAL EXPENDITURE ESTIMATE** | | |
| **Task** | **Materials** | **Cost** |
| Product Simulation | Hardware accelerator | $7,5001 |
|  | Disk farm | $75,0001 |
| Fabricate prototype | 3D printer | $6,0002 |
| Test bed | LTX Tester | $8,000,0001 |
| **TOTAL** |  |  |

1 Available from Sponsor

2 Available at Texas State University

## Non-Capital Expenses

*A non-capital purchase is usually termed an operating expense such as small spare parts, fuel and lubes, protective clothing etc. So, basically anything that is other than a capital purchase, above, is termed as non-capital. If it will be consumed over the course of your project, or under $5000, consider listing it here.*

*Complete the table as best you can. An EXAMPLE – which MAY NOT apply to your project – is shown.*

|  |  |  |
| --- | --- | --- |
| **NON-CAPITAL EXPENDITURE ESTIMATE** | | |
| **Task** | **Materials** | **Cost** |
| Simulation | PSPICE for PC | $500 |
| Fabricate prototype | Solder kit | $20 |
|  | Cables | $100 |
|  | IC's | $200 |
| Test bed | PC board | $75 |
| **TOTAL** |  | **$900** |

# **Total Project Cost**

*Here we will summarize the costs of the project in tabular form. Copy the totals from the previous three sections.*

|  |  |
| --- | --- |
| **PROJECT LABOR & MATERIALS COST SUMMARY** | |
| **Cost Category** | **Estimated Cost** |
| Labor | $35,400 |
| Capital Expenses | $2,195 |
| Non-Capital Expenses | $20,000 |
| **TOTAL ESTIMATED PROJECT COST** | **$39,895** |

# **Project Schedule**

*The project schedule is your Gantt Chart created in Microsoft Project. It should start with the formation of your team and end with the completion of your project.*

*It must be READABLE! A detailed Gantt Chart will probably need to be presented in landscape view at least; use 11” x 17” paper.*

*See the Primer and “Links to Gantt Chart Tutorials” documents for instruction.*

# **Approvals**

|  |  |  |  |
| --- | --- | --- | --- |
| **Approver Name** | **Title** | **Signature** | **Date** |
|  | Project Manager |  |  |
|  | D2 Project Manager |  |  |