



PCM-PJM FINANCIAL WORKBOOK

COURSE DOCUMENTS

Financial Workbook

HF Copper and Associate LLC Financial Records



Archi 
Finance



WELCOME !

Welcome to the course! When I was taking my exams I had a lot more “fun” studying for the technical exams, PPD and PDD. Contracts, finances, accounting, not so much. Now that I'm self-employed I find myself addicted to learning as much about this stuff as possible. Accounting methods, taxes, personal finance, everything about the business side of the design work we do.

Inspired by Erica Spayd's Financial Terms spreadsheet I thought I could do a Hyperfine version with more info and some practice problems thrown in. As with most things on my site we start with things you have asked for and then grow it based on what you all like about it.

I hope this helps you with your exams and inspires to take a greater interest in the financial aspect of the work we do. If you love it, let me know. If you hate it, please contact Christiana directly.

- Ben

Hello! I'm Christiana Copper, co-author of this financial workbook. After (what felt like) a million hours of studying, I recently finished my ARE exams. I am a newly-licensed architect and self-admitted math nerd. In my spare time I write about personal finance at ArchiFinance.com and teach math to grades 2 through 12.

Ben asked me to help create this workbook as a way to get a closer look at some of the finance terms you might see on your exams and in your professional life. I believe financial literacy is important - it's not just about money, it's about building trust, making decisions, preparing for the future and sometimes taking risks.

I hope this workbook helps you feel more confident when it comes to understanding business finance and brings you closer to your goal of becoming a licensed architect. Good luck!

- Christiana



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NET PROFIT: (Also referred to as Net Income) The excess of revenues over expenses and is a key indicator of profitability.

NET REVENUE PER EMPLOYEE: Measures roughly how much money each employee generates for the firm.

OVERHEAD RATE: Measures the cost of operations not directly billable to a project.

PROFIT-TO-EARNINGS RATIO: Measures the firm's effectiveness in generating profit.

RETURN ON EQUITY: measures the profitability from the stockholders' viewpoint (Net Income / Avg. Stockholders' Equity)

RETURN ON OVERHEAD (ROOH): A method used to calculate firm sales and profit goals.

REVENUE FACTOR: Used to check the balance between revenue and labor, and shows how well a firm is generating revenue from its total labor investment.

TOTAL EXPENSES: The sum of total gross cash expenditures of the firm during the accounting period.

TOTAL LABOR: The sum of direct labor and indirect labor (in time). If measured in dollars, it is also called total salary.

UTILIZATION RATE: Measures the overall efficiency and effective use of labor.

WORK-IN-PROGRESS: revenue earned but not yet billed

SOLVENCY (CURRENT RATIO): measures the ability of the firm to survive over a long period of time.



DEFINITION

Net revenue after deducting consultant fees and expenses, all reimbursable and non-reimbursable project expenses.

FORMULA

Gross Revenue
- Consultant Fees
- Project Related expenses

DISCUSSION

This is the dollar amount you have to actually operate your business. Start with Gross Revenue, the total sum of money you are receiving. Subtract what you owe to your consultants and subtract all the expenses related to your projects, i.e. printing, travel, fees, etc. The amount left over is your Net Operating Revenue

RELATED TERMS

Net Service Revenue: This is your operating revenue for one specific project.

Gross: An amount with no deductions. Similar concept to Gross Floor Area. It's the largest value, usually the starting point before you start subtracting fees, taxes, project costs, non-usable floor area, etc.

Net: The usable amount. Similar in concept to Net Floor Area. It's what you are left with after subtracting required costs from the Gross.

SAMPLE PROBLEM

Your firm has just signed contracts for three projects for the upcoming quarter. A school in a nearby state in your region with a cost of construction of \$25,000,000, a recreation center with a cost of construction of \$3,750,000 and a restaurant with a cost of construction of \$1,500,000. Your fee for the school is 5%, for the rec center 6% and for the restaurant 7%. Your contract with your consultants stipulates they receive 30% of the design fee. Project costs for the school are expected to be \$175,000 with an additional \$50,000 of reimbursable expenses. Project costs for the rec center will be \$50,000 and project costs for the restaurant will be \$75,000 plus \$25,000 in reimbursable expenses. Your firm will spend \$50,000 in marketing to publicize your involvement with the school project.

What is your Gross Revenue?
What is your Net Operating Revenue?



Gross

$$\begin{aligned} 25,000,000 \cdot .05 &= \$ 1,250,000 \\ 3,750,000 \cdot .06 &= \$ 225,000 \\ 1,500,000 \cdot .07 &= \$ 105,000 \\ \hline & \$ 1,580,000 \leftarrow \text{Gross} \end{aligned}$$

CONSULTANTS

$$\$ 1,580,000 \cdot .3 = \$ 474,000$$

COSTS / FEES / EXPENSES

$$\begin{aligned} & \$ 175,000 \\ + & 50,000 \\ + & 50,000 \\ + & 75,000 \\ + & 25,000 \\ \hline & \$ 375,000 \end{aligned}$$

NET OPERATING REVENUE

$$\begin{aligned} & \$ 1,580,000 - \$ 474,000 - \$ 375,000 \\ & = \$ 731,000 \end{aligned}$$

Marketing costs come out of your Net Operating Revenue. You do not subtract this from your Gross. The other line items are all included. Make sure to keep your track of your units.

DEFINITION

Direct Labor (Direct Salary) refers to the wages or salaries billable to a specific project and client, including payroll tax and employee benefits.

FORMULA

You could also evaluate direct labor costs as a percentage of net operating revenue. To calculate this metric, divide direct labor costs by the Net Operating Revenue for the period (multiply by 100 for a percentage).

DISCUSSION

You likely encounter direct labor costs when you complete time tracking sheets for projects. If time tracking for a project is not accurate, then the cost of labor is improperly allocated. This causes the price of services to be inaccurate, damaging profits. The direct labor costs are the expenses that can be directly traced to a job. When an architecture firm pays employees to design and produce construction documents for a specific job, those expenses are direct costs.

Direct labor is billable to a specific project and client. It includes payroll taxes, company-paid medical/dental insurance, life insurance, workers' compensation, company-matched retirement contributions, AIA membership, covered exam fees, and other benefits.

Additional Resources:

- AccountingTools.com: Direct Labor

<https://www.accountingtools.com/articles/2017/5/6/direct-labor>

- FreshBooks.com: What Is Indirect Labor Cost?

<https://www.freshbooks.com/hub/accounting/indirect-labor>

RELATED TERMS

Indirect Labor: wages that are not billable to a specific project.

Total Labor: The sum of direct labor and indirect labor (in time). If measured in dollars, it is also called total salary.

Overhead: Refers to the ongoing expenses of operating a business that cannot be traced to a specific project.

SAMPLE PROBLEM

An accountant prepares the firm's Profit-Loss statement for the year ending September 30, 2019. Using the Profit-Loss statement, calculate the total direct labor cost in dollars, and as a percentage of NOR for the Current Month, Year-To-Date, and Year-To-Date Budget (row B).

DEFINITION

Indirect labor (also called Indirect Salary) includes wages that are not billable to a specific project, including payroll tax and employee benefits.

FORMULA

Total Indirect Labor = Total Indirect Expenses / Overhead Rate

You could also evaluate indirect labor costs as a percentage of net operating revenue. To calculate this metric, divide indirect labor costs by the Net Operating Revenue for the period (multiply by 100 for a percentage).

DISCUSSION

Unlike Direct Labor, Indirect Labor cannot be traced to a specific job and are charged as incurred. Indirect Labor supports the production process, but is not directly involved in creating the finished product. Indirect Labor is charged to overhead, and may be reflected in the Cost of Services (also called Cost of Goods Sold).

Indirect labor can include employee training or onboarding, supervising tasks, cleaning, accounting, general administrative tasks, etc., by everyone including principals.

Additional Resources:

- AccountingTools.com - Indirect Labor

<https://www.accountingtools.com/articles/2017/5/12/indirect-labor>

- Direct vs. Indirect Labor Cost

<https://bizfluent.com/facts-5958790-direct-vs--indirect-labor-cost.html>

RELATED TERMS

Direct Labor: wages or salaries billable to a specific project and client.

Total Labor: The sum of direct labor and indirect labor (in time). If measured in dollars, it is also called total salary.

Overhead: Refers to the ongoing expenses of operating a business that cannot be traced to a specific project.

SAMPLE PROBLEM

Circle the position(s) considered Indirect Labor:

- accountants
- janitorial staff
- production staff
- human resources personnel

Sample Problem 2: For a previous accounting period, HF Copper & Associates has an overhead rate of 1.52 and total indirect expenses of \$35,100. Calculate the Total Indirect Labor in dollars for the previous accounting period.

Sample Problem 3: Using the Profit-Loss statement, calculate the total indirect labor cost in dollars, and as a percentage of NOR for the Current Month, Year-To-Date, and Year-To-Date Budget (refer to the indirect expenses section).





HF COPPER & ASSOCIATES

FINANCIAL RECORDS

ASSETS

2019

Current Assets

Cash	11,000
Short-Term Investments	10,000
Accounts Receivable	42,000
Prepaid Expenses	2,000

Total current assets

Long-Term Assets

Long-term investments	10,000
Property, plant, and equipment (Less accumulated depreciation)	15,000
Intangible assets	(2,000)

Total long-term assets

Other Assets

Deferred income tax	5000
Other	

Total other assets

Total Assets

LIABILITIES AND OWNER'S EQUITY

Current Liabilities

Accounts payable	2,000
Short-term loans	4,000
Income taxes payable	1,000
Accrued salaries and wages	4,500
Unearned revenue	26,000
Current portion of long-term debt	4,000

Total current liabilities

Long-term Liabilities

Notes payable (long-term liabilities)	7,000
Deferred income tax	2,500
Other	

Total long-term liabilities

Owner's Equity

Owner's investment	42,000
Retained earnings	
Other	

Total owner's equity

Total Liabilities and Owner's Equity

Profit-Loss Statement (Mattox Format)	Current Month	%	Year-to-Date (YTD)	%	YTD Budget	%
Revenue						
Fees Billed	92,500	141.2	1,590,000	125.5	1,749,000	121.0
Reimbursable Billed	12,000	18.3	149,500	11.8	204,000	14.1
Outside Consultants	(25,000)	(38.2)	(290,100)	(22.9)	(312,590)	(21.6)
Project-related expenses	(14,000)	(21.4)	(182,400)	(14.4)	(195,000)	(13.5)
A. Net Operating Revenue	65,500	100.0	1,267,000	100.0	1,445,410	100.0
Direct Labor Expense						
Direct Labor: Principals	7,680	11.7	102,000	8.1	100,000	6.9
Direct Labor: Technical Staff	10,100	15.4	129,800	10.2	135,000	9.3
Direct Labor: Admin Staff	734	1.1	8,599	0.7	11,250	0.8
Direct labor: Contract	1,925	2.9	25,600	2.0	28,000	1.9
B. Total Direct Labor (Salary) Expense						
Indirect Expenses						
Admin Labor: Principals	6,900	10.5	87,000	6.9	89,000	6.2
Admin Labor: Technical Staff	3,210	4.9	34,000	2.7	32,000	2.2
Admin Labor: Admin Staff	2,580	3.9	19,800	1.6	20,000	1.4
Admin Labor: Temp Staff	-	-	4,980	0.4	4,500	0.3
Paid Time Off (PTO)	2,100	3.2	19,500	1.5	20,000	1.4
Payroll Benefits	9,050	13.8	92,500	7.3	91,000	6.3
Discretionary Benefits	450	0.7	4,255	0.3	5,000	0.3
Office Lease	4,120	6.3	42,000	3.3	42,000	2.9
Office Expense	1,900	2.9	28,900	2.3	29,900	2.1
Professional Liability & General Insurance	-	-	10,100	0.8	11,500	0.8
Interest Expense	-	-	8,420	0.7	9,350	0.6
Professional Business Consultants	900	1.4	10,908	0.9	12,500	0.9
Taxes: Local Property	-	-	7,059	0.6	9,800	0.7
Depreciation/Amortization	6,100	9.3	4,099	0.3	6,580	0.5
Marketing & Business Development	825	1.3	20,500	1.6	22,180	1.5
C. Total Indirect Expense						
D. Total Expenses (B + C)						
E. Profit - Loss (A - D)	27,365.0	41.8	872,979	68.9	1,040,100	72.0
Misc. Revenue/Expenses						
Misc. Revenue						
Interest Earned	590	0.9	10,195	0.8	12,900	0.9
Gain on Assets	-	-	-	-	-	-
Retained Bid Deposits	-	-	800	0.1	-	-
Total Misc. Revenue	590	0.9	10,995	0.9	12,900	0.9
Misc. Expenses						
Bad Debt Allowance	-	-	(3,000)	(0.2)	(3,500)	(0.2)
Loss on Assets	-	-	(690)	(0.1)	(2,000)	(0.1)
Total Misc. Expenses						
F. Net Total Misc. Revenue/Expenses	1,180	1.8	18,300	1.4	20,300	1.4
G. Net Profit / (Loss) Before Tax and Distributions (E + F)	28,545	43.6	891,279	70.3	1,060,400	73.4
Distributions						
Total Accrued Bonus	10,980	16.8	125,000	9.9	158,000	10.9
Total Paid Bonus	(58,000)	(88.5)	(120,000)	(9.5)	(158,000)	(10.9)
H. Total Distributions	(58,000)	(88.5)	(120,000)	(9.5)	(158,000)	(10.9)
Income Tax	0	-	(2,000)	(0.2)	(2,400)	(0.2)
I. Current Earnings (G - H)	86,545	132.1	1,011,279	79.8	1,218,400	84.3

HF Copper & Associates Time Sheet for Employee ID #123

Tasks	Week 1	Week 2	Week 3	Week 4
Responding to RFP	4.25	4.75	4.5	4.25
Firm Staffing	2.5	3	2	3
Project Management	27.5	29	32	26
Redlining/Reviewing Drawings	4.75	4.5	1.5	5.75
Continuing Education	1	0	0	1
	40	41.25	40	40

