The Association of Accountants and Financial Professionals in Business

Essential Management Accounting Competencies for All Entry-Level Accountants

REQUEST FOR COMMENTS

This Exposure Draft was developed by the IMA® (Institute of Management Accountants) Management Accounting Competency Task Force. The content of this Exposure Draft may be modified in light of comments received before being issued in final form. Comments are requested by November 12, 2021. Respondents are asked to submit their comments electronically, as either a PDF or Word file, to Raef Lawson, chair of the task force, at raeflawson@outlook.com.

Executive Summary

The role of the professional accountant is evolving. Technology is eliminating many repetitive, routine tasks, allowing time for more strategic, value-added activities. This trend, combined with the availability of greater sources and volumes of data and more sophisticated analytics, is changing the role of accounting professionals to that of strategic business partners focused on creating organizational value. Most importantly, these abilities are crucial earlier in an accountant's career.

All accountants, including those in entry-level positions, need to develop deeper and expanded competencies. In particular, they must integrate their technical accounting knowledge with enhanced use of technology and data analytics. To add more value to their organizations, accountants must also become adept with strategy and strategic management.

The domain of management accounting has always been an important part of an accountant's competencies. Management accounting, with its focus on strategy, analysis, decision making, and cross-functional integration, is even more essential today. Nevertheless, the time constraints of accounting curricula require accounting educators to carefully prioritize the important aspects of management accounting for their students.

This report provides two major resources for accounting education. First, it details the management accounting competencies that *all* entry-level accounting professionals should possess regardless of whether they initially pursue a position in industry, public accounting, or elsewhere. Second, it suggests management accounting course topics for each essential competency. Although course offerings and topics are likely to vary across accounting programs, this report illustrates possible ways in which management accounting topics could be addressed in two required courses (introductory management accounting and intermediate management accounting) plus an elective advanced course for students seeking greater depth.

Contributors

This report was prepared by a core team with extensive experience in developing competency and implementation guidance for both universities and accounting associations including the Association of

International Certified Professional Accountants (AICPA), Chartered Professional Accountants of Canada (CPA Canada), IMA, and the International Accounting Education Standards Board (IAESB). The initial recommendations developed by the Management Accounting Competency Task Force were reviewed by the academic and practice review panels, whose assistance is gratefully acknowledged and whose feedback was incorporated in the recommendations contained herein. We note that these recommendations do not necessarily reflect those of each individual reviewer.

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Impact of the Evolving Role of Professional Accountants on Essential Competencies

We are living in a world shaped by fast-changing technological advances, climate change, economic volatility, geopolitical unrest, aging populations, and other trends. This rapidly changing environment requires organizations of all types to be more agile and adaptable in order to survive and prosper. Professional accountants—in every part of our profession—need to be prepared to contribute to the success of their organizations, to be "value creators," adding value for both internal and external stakeholders.

Fulfilling this role will be challenging. The nature of the accounting profession is rapidly evolving, with leading-edge technology and analytics eliminating some jobs while modifying others and creating entirely new opportunities. Skill sets that were sufficient in the past are swiftly becoming obsolete, and accountants must develop and use more complex competencies earlier in their careers.

The objective of the Management Accounting Competency Task Force was to support the increasing relevance of management accounting education and to reflect on and recommend necessary skills for entry-level accounting. The goal was to ensure relevancy in today's practice environment. While forthcoming changes to the CPA (Certified Public Accountant) exam provide an opportune time for universities to reexamine their accounting curricula, we recommend also reexamining what is taught in the management accounting curriculum. Management accounting educators need to rethink how their courses are taught and what students need to learn for successful future careers.

Necessary competencies for future practice have been described in frameworks developed by numerous professional organizations. "Soft skills"—including ethical behavior, communication, collaboration, change management, leadership skills, and more—are universally mentioned and covered in

competency frameworks. So are technical accounting skills such as external financial reporting, audit, and taxation.

Less uniformly described in these frameworks are the management accounting competencies that *all* entry-level accountants need to possess. Regardless of where they enter the accounting profession, every accountant needs an understanding of key management accounting concepts. Failure to develop major management accounting competencies will leave future professionals ill-prepared to fulfill the emerging role of the professional accountant—to the detriment of their careers, the organizations for which they will work, and the public interest.

Essential Management Accounting Competencies

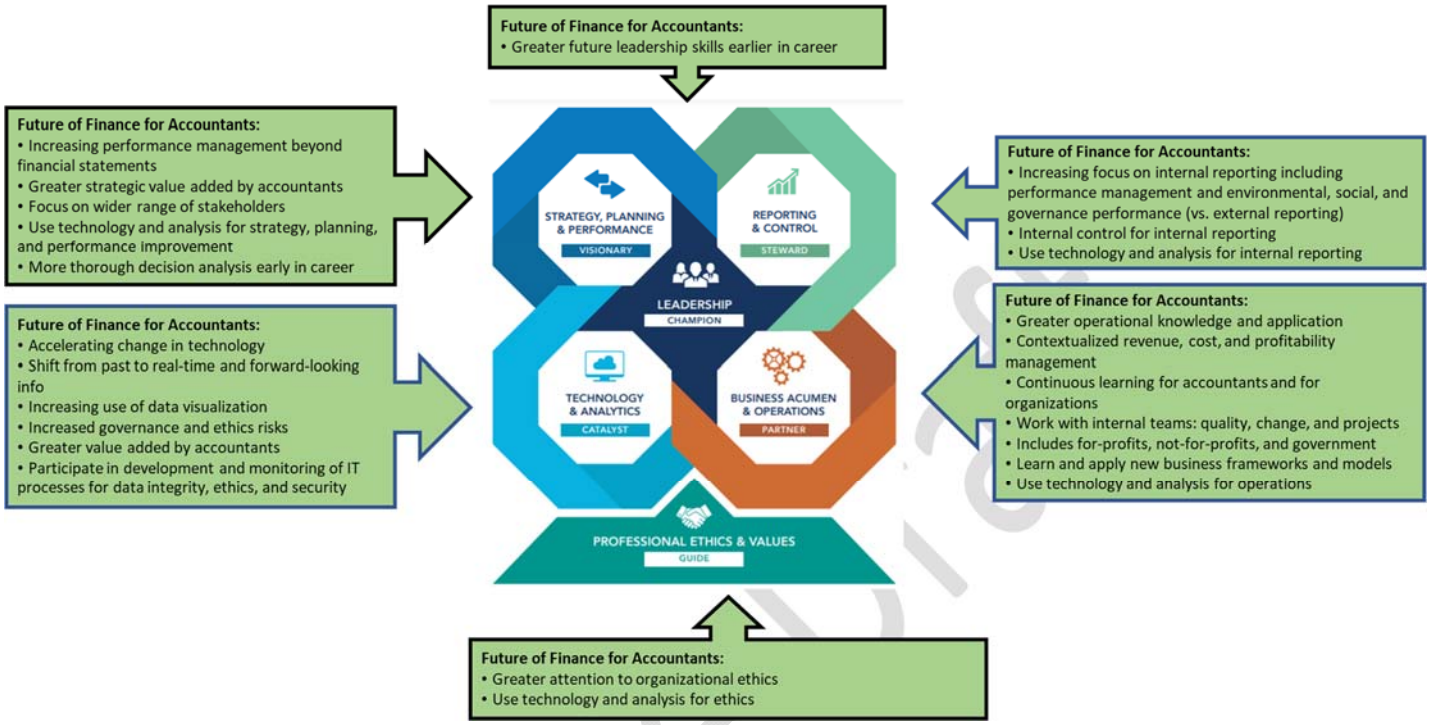
> *"Management accounting competencies are the foundation for professional development in the accounting and finance profession. This baseline understanding of cost, revenue, and performance is essential in becoming a financial strategist and catalyst with the ability to drive business innovation and value creation."*
>
> —Rich Brady, Commander, Chief Executive Officer,
> United States Military Entrance Processing Command

This report details the management accounting competencies that *all* entry-level accounting professionals should possess regardless of whether they initially pursue a position in industry, public accounting, or elsewhere.

In developing the list of competencies shown in Appendix 1, the Management Accounting Competency Task Force adopted a forward-looking approach, focusing on the competencies entry-level accountants will need for success in the future, and not just the competencies commonly included in accounting education today. For example, Appendix 1 introduces the area of revenue management as a key component. As accountants assume the role of strategic business advisors, they need to investigate and offer recommendations on the diverse factors impacting organizational success. Creating value requires proficiency in addressing the diverse factors that impact business success. The traditional focus on costing is insufficient for future accountants.

The role of the professional accountant is evolving and in turn affecting every competency area. Figure 1, for example, illustrates how the future of accounting and finance may impact each of the six competency domains in the IMA Management Accounting Competency Framework.

Figure 1: Evolving Competencies and the IMA Management Accounting Competency Framework



The competencies listed in Appendix 1 are the management accounting competencies that all entry-level accountants should possess. It is not a listing of all the competencies management accountants specifically need, which is much broader, including abilities in areas such as external financial reporting, audit, tax, and other business disciplines. Entry-level accountants also require professional competencies in "soft skill" areas including communication, cross-functional teamwork, self-management, and critical thinking, which are also largely excluded from Appendix 1 as they are important throughout the business curriculum.

When reviewing Appendix 1, emphasis should be placed on the competencies themselves rather than the domains in which they are grouped. In many cases, a given competency could be classified in more than one domain, and the task force placed it in the domain considered to be most appropriate. Additionally, the competency of data analytics pervaded each of the other competencies but is included here as a separate competency to reduce redundancy in presentation.

The need to incorporate more data analytics coverage is well established. It provides both a challenge and an opportunity to accounting programs: The challenge is to appropriately integrate data analytics into the existing curriculum, avoiding the pitfall of merely adding stand-alone data analytics courses; the opportunity is to reprioritize content, such as perhaps detailed application of process costing, which should be covered in the advanced management accounting course for students who want deeper management accounting knowledge.

The Need for Management Accounting Courses—Value-Added

Management accounting is inherently an interdisciplinary field, overlapping in functional domain with every other business discipline. This overlap reflects the cross-disciplinary nature of management

accounting and contributes to the ability of management accountants to add value to their organizations. In an effort to streamline curricula, some business schools have eliminated or reduced their number of management accounting courses, choosing to include vital management accounting content in other courses. For example, marketing courses might take over the practical application of microeconomics topics such as cost behavior, breakeven analyses, and customer profitability. Operations courses might assume responsibility for topics such as supply chain, automation, costing, and, more generally, performance measurement and management—particularly below top management levels. Data analytics courses, an area of growth in many curricula, are teaching data science models, decision analyses, and predictive analytics topics. Financial accounting and auditing courses address internal control and data governance frameworks. Information systems courses teach data governance, data processing, privacy, artificial intelligence (AI), and cybersecurity topics. Finance courses already teach capital budgeting, allocations of resources, and risk management topics. Organizational behavior courses have long included topics such as leadership, supervision, teams, and culture. And strategy courses have always addressed the topics of strategy, tactical planning, and critical success factors (CSFs). What, then, is the value-added of specific management accounting courses if much of the content is covered elsewhere in a business school curriculum?

Expertise of Management Accounting Educators

Significant elements of management accounting need to be taught by management accounting specialists. Management accounting instructors have specialized content knowledge that cannot be easily replicated by faculty in other disciplines. The subtleties of the field are crucial to the formation of entry-level accountants. Faculty of other disciplines may not be able to address the complex nuances of how accounting information is produced, the quality of that information, and how to properly use that information. If students are not taught by management accounting specialists, they run the risk of failing to learn even what management accounting is, and they miss valuable opportunities for rewarding careers in the area. For proper competency formation, accounting students need to be taught by management accounting faculty.

Incomplete Coverage of Management Accounting Knowledge

Essential management accounting knowledge is not likely to be taught by faculty in other domains. Although other business fields use management accounting information, some essential topics are *learned* only in management accounting courses. Examples include budgeting theory and application, costing and allocation techniques, profitability analyses of organizational segments (e.g., products, customers, and departments), responsibility center management, and activity-based costing (ABC) and management. Even if these topics are included in another business course, the importance of the topic may be inadequately stressed.

Management Accounting Content Overlap

It is well recognized that management accounting has many overlapping subject areas with other disciplines (functional domains) in business schools. Rather than viewing the inclusion of management accounting-related topics in the curriculum as a "division" of topics among courses, it should be recognized that there is an "indispensable complementarity" of management accounting knowledge to everything else business students learn. Complementarity is not to be confused with substitutability,

where the former affords or even necessitates a key slot to management accounting in the curriculum, whereas the latter imprudently considers it to be redundant or obsolete.

Content overlap provides students with a valuable opportunity to see the "big picture" and cross-functional nature of business. When a student encounters a topic in multiple courses from a variety of perspectives with different purposes, the topic will be learned at a deeper level. This overlap is beneficial, but it is not sufficient for disciplinary depth. The key to success for student learning is that each discipline presents the topic with its unique focus. For example, it is necessary for marketing to discuss pricing, and pricing will inevitably lead to the topic of costing. But that exposure does not make "students of marketing" the same as "students of management accounting." The latter may understand the importance of cost distortions, viewed through multiple lenses including ABC rather than solely through the narrower lens of volume-based cost allocations (if that level of detail is even addressed in the marketing or operations management course). The level of costing detail presented in a marketing course will differ from that of a management accounting course—in the same way that pricing in a management accounting course is less comprehensive than it is in a marketing course. Accounting and marketing students require different levels of knowledge regarding the preparation and use of costing information. Students gain a deeper understanding of a topic when they learn it from a variety of perspectives. This is why businesses use cross-functional teams—no two disciplines understand or approach a problem from the same perspective.

There is considerable overlap across business disciplines in the area of data analytics. Some accountants have argued that management accounting should be taught in a data analytics course. However, the same issues of faculty expertise and content depth and focus arise as previously discussed. Data analytics is a tool for use across business disciplines. It should be *integrated/applied* to topics in various courses, such as personnel analyses in human resources courses, business performance analysis in management accounting courses, customer preference and market demand questions in marketing courses, horizon scanning and competitive responsiveness in strategy courses, and so on. It is appropriate to introduce analysis examples from various business disciplines as students learn data analysis techniques. However, the depth of discipline knowledge when learned only in a data analytics course is inadequate for the in-depth ability needed by majors in each business discipline. In particular, accounting students will not adequately learn management accounting topics in a data analytics course.

Management Accounting Course Content

As the accounting profession evolves, accountants must be prepared to add value to their organizations earlier in their careers. An in-depth management accounting competency is essential to adding value, and accountants—regardless of their career path—must be adequately prepared in the field of management accounting. It would be a disservice to future accountants, their organizations, and the public interest to disregard and eliminate the essential learning of management accounting that accounting graduates need.

Accounting programs must ensure that management accounting courses comprehensively impart the key value-adding management accounting competencies, which means focusing on much more than costing techniques. The field of management accounting has evolved tremendously in the last several decades. Early in their careers, today's accountants require competencies in areas such as strategy, revenue and profitability (not just costing) management, transformation of the finance function, professional ethics, and data analytics. An overemphasis on the instruction of costing methods will limit

student learning of other important topics and prevent students from integrating essential management accounting competencies with those obtained in other courses.

Illustrative Management Accounting Course Curriculum

In order to adequately impart the essential management accounting competencies identified in this report, we believe that it is necessary that all accounting students take two management accounting courses, one at the introductory level and an additional one at the intermediate level. An advanced management accounting course elective would be desirable for accounting students planning to pursue a career outside of financial audit or tax, or planning to sit for the CPA Business Analysis and Reporting (BAR) exam.

In Appendix 2, we offer illustrative content for the introductory, intermediate, and elective management accounting courses to comprehensively address the information contained in Appendix 1. Some competencies can be introduced and mastered in a single course. Most competencies require exposure over multiple courses for students to achieve a sufficiently high level of mastery. In such instances, the content is suggested for inclusion in more than one course. In general, the competency would be introduced in the lower-level course and then reinforced and mastered in the higher-level course. In some cases, the introduction to a topic may have occurred in a course other than management accounting. Ultimately, the stated learning outcomes reflect the expected level of mastery upon completion of the most advanced course listed.

While some schools offer a “cost accounting” course as the intermediate management accounting course, the task force points out that this title does not reflect the needed content of a management accounting course for today’s accounting students. As indicated by the breadth of recommended competencies in the intermediate course shown in Appendix 2, costing is a subset of the managerial accounting competencies and does not encompass the broad range of management accounting competencies needed by professional accountants for the practice environment of the future. Accordingly, we suggest updating the name, content, or both of such courses to align with the recommendations contained in this report.

Appendix 1: Essential Management Accounting Competencies, Learning Outcomes, and Learning Objectives for All Entry-Level Accountants

Competencies	Learning Outcomes	Learning Objectives
Strategic Management Accounting and Analysis		
Strategic and Tactical Planning		
	Evaluating strategic management plans	Assess the alignment of strategies with the organizational mission, vision, and values Examine the interdependencies among the operational, strategic, tactical, and contingency plans Analyze the ESG impact of operational, strategic, tactical, and contingency plans
	Applying continuous improvement strategies to increase organization value	Explain why continuous improvement is necessary for sustainable organizations Identify appropriate change management strategies
	Evaluating the strategic importance of a short-term vs. long-term perspective	Differentiate between the purposes of short-term and long-term business and strategic decisions
Decision Analysis		
	Identifying problems for decision making	Recognize situations that require decision-making skills
	Analyzing relevant information	Gather relevant quantitative and qualitative information for analysis Perform relevant analyses Enhance analyses with relevant data analytics Evaluate key assumptions and uncertainties Apply professional ethics and values
	Making decisions	Formulate decisions using evidence-based judgment Communicate recommendations
	Monitoring past decisions	Gather data to evaluate the results of past decisions
Budgeting and Forecasting		
	Evaluating the relationship of budgets and forecasts to strategic planning	Critique the use of budgets and forecasts to facilitate communication, coordination, performance management, and alignment with organizational strategies Prepare various types of capital and operating budgets and forecasts
	Applying technology and data analytics in budgeting and forecasting	Use data analytics and data visualization tools to create and enhance budgets and forecasts

Performance Management

Aligning performance management systems to support organizational strategy and operations	Measure and control strategic implementation using relevant tools and techniques
	Evaluate the alignment of performance measures with intended financial and nonfinancial outcomes
	Compare and contrast the performance information needed for external reporting and internal decision making
Using performance management systems to sustain and improve organizational success	Explain the issues of financial accounting associated with measuring performance
	Analyze performance by comparing actual financial and nonfinancial results to relevant benchmarks
	Use performance measurement results to recommend improvements to strategies and/or operations
Applying technology and analytics in performance management	Use data analytics and data visualization tools to enhance performance management

Revenue, Cost, and Profitability Management

Revenue Management

Evaluating revenue-generating models and practices	Describe the organization's revenue-generating models
	Describe organizational revenue management practices, including revenue levers and resources
Identifying opportunities for management accountants to enhance revenue management	Use data analytics and data visualization tools to enhance revenue management
	Apply management accounting tools to improve revenue management

Managerial Costing

Evaluating cost behavior	Assess the reasonableness of cost behavior assumptions for specific costs
	Critique the usefulness and reasonableness of a linear cost function for specific costs
Applying cost accounting methods	Compare cost accounting practices for financial accounting vs. internal reporting

		Contrast the uses of traditional cost accounting methods Explore the accounting system requirements and operational implications of alternatives to traditional costing methods
	Evaluating relevant costs for decision making	Assess which costs are relevant for a given decision
	Identifying opportunities for management accountants to enhance cost management	Describe organizational methods for improving cost management efficiency
	Applying technology and analytics in cost management	Use data analytics and data visualization tools to enhance cost management
Profitability Management		
	Evaluating profitability using relevant financial and nonfinancial information	Analyze profit behavior in relation to costs and volume Consider appropriate nonfinancial information and qualitative factors when evaluating profitability
	Evaluating relevant information for decision making and performance management	Assess relevant information for a given decision Analyze business segments for their contribution to organizational success
	Applying technology and analytics in profitability management	Use data analytics and data visualization tools to enhance profitability management
Technology, Analytics, and Data Management		
Management Information Systems		
	Recognizing the value of information systems for competitive advantage	Explain how information systems add value to an organization Describe alternative types of data and data sources Evaluate the quality of data generated by information systems
Data Governance		
	Explaining data policies and procedures	Explain how data governance enhances organizational value Describe commonly used frameworks and practices for data governance, control, and risk management Describe data through the various stages of the data life cycle

Data Analytics		
	Applying data analytics	Use digital technology to perform different types of analytics Implement data science models to support operational and financial decisions Apply analytics to proactively identify and avoid decision bias Prepare appropriate visualizations to facilitate and communicate data analysis
Technology-Enabled Finance Transformation		
	Applying technology-enabled finance transformation to support organizational strategy	Explain the role of technology-enabled finance transformation initiatives in enabling strategic execution Identify opportunities for management accountants to work with data scientists and/or information technology specialists to generate financial and nonfinancial information from a variety of data sources Collaborate with information technology teams to assess and improve business processes
Professional Ethics		
Personal Ethics		
	Adopting an ethical mindset	Explain the importance of ethical behavior to the value added by management accountants Exhibit a professional ethical mindset
	Acting ethically	Resolve potential conflicts among diverse ethical expectations Engage in self-reflection and continuous improvement of ethical behavior
Organizational Ethics		
	Encouraging an ethical organizational culture	Recommend improvements to the organization's systems and controls over ethical standards and compliance Collaborate with others to foster, clarify, and continuously improve the organizational ethical culture Explain how controls prevent and detect fraudulent and unethical activities and errors

Appendix 2: Example Management Accounting Topics by Course

Below is a listing of candidate topics for possible inclusion in management accounting courses that directly address the competencies listed in Appendix 1.

Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)	Advanced Course Topics (Elective)
Strategic Management Accounting and Analysis					
Strategic and Tactical Planning					
	Evaluating various types of strategic management plans	Assess the alignment of strategies with the organizational mission, vision, and values		Mission, vision, and values	Organizational culture; SWOT (strengths, weaknesses, opportunities, and threats) analysis; Porter's Five Forces; PESTLE (political, economic, sociological, technological, legal, and environmental) analysis
		Examine the interdependencies among the operational, strategic, tactical, and contingency plans	Operational, strategic, tactical, and contingency plans	Operational, strategic, tactical, and contingency plans; value chain analysis; supply chain analysis; CSFs	Strategy and management control systems; formal and informal systems; effectiveness and design of management control systems
		Analyze the ESG impact of operational, strategic, tactical, and contingency plans		Environmental concerns (e.g., impact on climate change, depletion of physical resources, waste management, risks from climate change); social concerns (e.g., diversity, human rights, consumer protection, animal rights); governance concerns (e.g., board of directors, management structure, executive vs. employee compensation); supply chain ESG considerations	Environmental and social performance and the balanced scorecard; managing environmental and sustainability costs

	Applying a continuous improvement mindset to increase organization value	Explain why continuous improvement is necessary for sustainable organizations		Continuous improvement; sustainable organization	Continuous improvement; sustainable organization

	Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)
		Identify appropriate change management strategies		Change management; barriers to change	Change management process (e.g., purpose and change needed, leadership and teamwork, communication, training, barrier identification and removal, goals/milestones, project management); tools and techniques for continuous improvement (e.g., value engineering, kaizen, Lean management, life-cycle costing, Theory of Constraints, benchmarking, cross-functional improvement, etc.)
	Evaluating the strategic importance of short-term vs. long-term perspectives	Differentiate between the purposes of short-term and long-term business and strategic decisions	Short-term and long-term decisions	Short-term and long-term decisions; strategy maps; balanced scorecard; short-term profitability vs. long-term growth; expectations of investors and other stakeholders	Short-term and long-term decisions; strategy maps; balanced scorecard; short-term profitability vs. long-term growth; expectations of investors and other stakeholders
Decision Analysis					
	Identifying problems for decision making	Recognize situations that require decision-making skills	Well-defined vs. open-ended problems, alternatives	Well-defined vs. open-ended problems, alternatives, decision maker(s), stakeholders	Well-defined vs. open-ended problems, alternatives, decision maker(s), stakeholders

	Analyzing relevant information	Gather relevant quantitative and qualitative information for analysis	Relevant quantitative and qualitative information	Availability and quality of relevant quantitative and qualitative information; ESG factors; risk management factors	Availability and quality of relevant quantitative and qualitative information; ESG factors; risk management factors

Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)	Advanced Course Topics (Elective)
		Perform relevant analyses	Relevant analyses (e.g., costs and benefits, pros and cons)	Relevant analyses (e.g., costs and benefits, pros and cons, regression analysis, correlations, trends, net present value, sensitivity analysis, scenario analysis, what-if analysis)	Relevant analyses (e.g., costs and benefits, pros and cons, regression analysis, correlations, trends, net present value, sensitivity analysis, scenario analysis, what-if analysis)
		Enhance analyses with relevant data analytics	(See Technology, Analytics, and Data Management)	(See Technology, Analytics, and Data Management)	(See Technology, Analytics, and Data Management)
		Evaluate key assumptions and uncertainties	Assumptions (e.g., cost behavior)	Assumptions (e.g., cost behavior); conditional thinking (if-then); critical uncertainties; risks; limitations; trade-offs; potential bias	Types of bias, including implicit bias; cross-validation using prediction accuracy or maximum likelihood
		Apply professional ethics and values	Ethical and unethical business practices	Ethical behavior of management accountants; professional codes of conduct; ethical and unethical business practices	Ethical behavior of management accountants; professional codes of conduct; ethical and unethical business practices
	Making decisions	Formulate decisions using evidence-based judgment	Apply decision criteria (e.g., benefit greater than cost)	Summarize results of analyses; apply decision criteria	Summarize results of analyses, key issues, and trade-offs; identify and apply decision criteria, risk tolerance
		Communicate recommendations	Stakeholder information needs	Stakeholder information needs; communication to diverse audiences	Persuasive data-driven written analysis and reports to various audiences for various financial and operational decisions
	Monitoring past decisions	Gather data to evaluate the results of past decisions		Decision outcomes; variance analysis; performance measures	Need for decision monitoring; monitoring methods and measures

Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)
Budgeting and Forecasting				
Evaluating the relationship of budgets and forecasts to strategic planning	Critique the use of budgets and forecasts to facilitate communication, coordination, performance management, and alignment with organizational strategies		Budgets (time-period budgets, etc.) related to forecasts and to organization strategy	Rolling budgets; life-cycle costing; participative budgeting; promoting coordination and communication; motivating managers and other employees using budgets; challenges in administering different kinds of budgets
	Prepare various types of capital and operating budgets and forecasts	Master budget; flexible budget	Master budget; flexible budget; rolling budget; short-term and long-term forecasts; capital budget; payback period; internal rate of return; net present value; time value of money; tax effects; human factors	Strategic considerations in capital budgeting (e.g., investment in research and development, customer value, capital budgeting)
Applying data analytics in budgeting and forecasting	Use data analytics and data visualization tools to create and enhance budgets and forecasts	(See Technology, Analytics, and Data Management)	(See Technology, Analytics, and Data Management)	(See Technology, Analytics, and Data Management)
Performance Management				
Aligning performance management systems to support organizational strategy	Measure and control strategic implementation-using relevant tools and techniques	Budgets and variances; responsibility accounting	Budgets and variances; responsibility accounting; management control systems; Simons's levers of control framework	Management control systems; Simons's levers of control framework; distinguishing the performance of managers from their subunits
	Evaluate the alignment of performance measures with intended financial and nonfinancial outcomes	Financial and nonfinancial performance measures/metrics	Financial and nonfinancial performance measures/metrics; CSFs; key performance indicators (KPIs); specific, measurable, achievable, relevant, and time-bound (SMART) criteria	Financial and nonfinancial performance measures/metrics, CSFs, KPIs, SMART criteria

Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)	Advanced Course Topics (Elective)
		Compare and contrast the performance information needed for external reporting and internal decision making	Objectives of external reporting and the information needs of external stakeholders; objectives of internal reporting and the information needs of internal stakeholders	Objectives of external reporting and the information needs of external stakeholders; objectives of internal reporting and the information needs of internal stakeholders	Objectives of external reporting and the information needs of external stakeholders; objectives of internal reporting and the information needs of internal stakeholders; information needs of for-profit, not-for-profit, and governmental entities
	Using performance management systems to sustain and improve organizational success	Explain the issues of financial accounting associated with measuring performance	Historical cost accounting; cost allocation; principles of return on investment (ROI), residual income (RI), and Economic Value Added® (EVA)	Historical cost accounting; cost allocation; segment reporting; responsibility accounting; ROI, RI, and EVA	Transfer pricing; decentralization; management control systems and multinational considerations for determining transfer prices; guidelines for transfer pricing situations; ROI, RI, and EVA
		Analyze performance by comparing actual financial and nonfinancial results to relevant benchmarks	Benchmarks; variance analysis	External and internal benchmarks; variance analysis; financial and nonfinancial results; diagnostic control systems; gap analysis	
		Use performance measurement results to recommend improvements to strategies and/or operations		Interpret results of performance measures/metrics; gap analysis; external and internal factors	Use results of performance measures/metrics to recommend improvements to strategies and/or operations; value stream maps
	Applying technology and analytics in performance management	Use data analytics and data visualization tools to enhance performance management	(See Technology, Analytics, and Data Management)	(See Technology, Analytics, and Data Management)	(See Technology, Analytics, and Data Management)

Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)	Advanced Course Topics (Elective)
Revenue, Cost, and Profitability Management					
Revenue Management					
	Evaluating revenue-generating models and practices	Describe the organization's revenue-generating models	Revenue streams (e.g., sale of goods, sale of services, licenses, commissions, rents, interest)	Revenue streams (e.g., sale of goods, sale of services, licenses, commissions, rents, interest); organizational skills and abilities; customer needs; value creation and delivery; customer payment cycle; industry revenue model characteristics	
		Describe organizational revenue management practices, including revenue levers and resources	Pricing basis	Revenue levers (pricing basis, inventory allocation, product configuration, management of variability across time); value chain analysis; supply chain analysis; resources available for revenue management	
	Identifying opportunities for management accountants to enhance revenue management	Use data analytics and data visualization tools to enhance revenue management	(See Technology, Analytics, and Data Management)	(See Technology, Analytics, and Data Management)	(See Technology, Analytics, and Data Management)
		Apply management accounting tools to improve revenue management	Financial sales data; revenue variance analysis; accounts receivable turnover	Financial sales data; nonfinancial customer and market data; revenue variance analysis; accounts receivable turnover; customer profitability analysis; activity-based management	Financial sales data; nonfinancial customer and market data; revenue variance analysis; accounts receivable turnover; customer profitability analysis; value pricing; capacity analysis; activity-based management; analysis of revenue behavior and causality; revenue driver analysis; scenario planning; time series/trend analysis

Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)	Advanced Course Topics (Elective)
Managerial Costing					
	Evaluating cost behavior	Assess the reasonableness of cost behavior assumptions for specific costs	Cost behavior assumptions; fixed costs; variable costs; product costs; period costs; traceability; direct costs; indirect costs	Cost behavior assumptions; fixed costs; variable costs; product costs; period costs; traceability; direct costs; indirect costs; conversion costs; overhead costs; mixed or semivariable costs; step costs; incremental costs; economies of scale	
		Critique the usefulness and reasonableness of a linear cost function for specific costs		Linear cost function, cost pool, cost driver, relevant range; changes in the internal and external business environment	
	Applying cost accounting methods	Compare cost accounting practices for financial accounting vs. internal reporting	Financial accounting: standards for recording costs as assets and expenses (e.g., inventory and cost of goods sold); internal reporting: relevant costs for a given purpose (cost management, performance management, decision making, etc.)	Financial accounting: standards for recording costs as assets and expenses (e.g., inventory and cost of goods sold); internal reporting: relevant costs for a given purpose (cost management, performance management, decision making, etc.)	
		Contrast the uses of traditional cost accounting methods	Allocation of costs (cost pool, allocation base, over-/under-applied cost); absorption costing; standard costing; job costing	Allocation of costs (cost pool, allocation base, over-/under-applied cost); absorption costing; standard costing; job costing; actual and normal costing	Process costing; support cost allocation (direct method, step-down method, reciprocal method)

Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)	Advanced Course Topics (Elective)
		Explore the accounting system requirements and operational implications of alternatives to traditional costing methods	Direct costing; variable costing; ABC	Accounting system requirements for different costing methods; operational implications of different costing methods; direct costing; variable costing; ABC, time-driven ABC	Accounting system requirements for different costing methods; operational implications of different costing methods; throughput costing; predictive accounting; resource consumption accounting; event-driven ABC
	Evaluating relevant costs for decision making	Assess which costs are relevant for a given decision	Product cost (financial accounting); marginal cost	Product cost (financial accounting and/or internal reporting); opportunity cost; sunk cost; marginal cost; discretionary cost; cost reduction from economies of scale	
	Identifying opportunities for management accountants to enhance cost management	Describe organizational methods for improving cost management efficiency		Production efficiency (e.g., spoilage, rework, and scrap); resource and capacity management; operations and logistics management; Just-in-Time; Lean accounting; kaizen	Accurate cost planning; production efficiency (e.g., spoilage, rework, and scrap); cost control; business process controls; economic order quantity; critical performance variables; diagnostic controls; resource and capacity management; operations and logistics management; Just-in-Time; Lean accounting; kaizen
	Applying technology and analytics in cost management	Use data analytics and data visualization tools to enhance cost management	(See Technology, Analytics, and Data Management)	(See Technology, Analytics, and Data Management)	(See Technology, Analytics, and Data Management)

Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)	Advanced Course Topics (Elective)
Profitability Management					
	Evaluating profitability using relevant financial and nonfinancial information	Analyze profit behavior in relation to costs and volume	Cost-volume-profit (CVP) analysis; breakeven point; margin of safety; degree of operating leverage	CVP analysis; breakeven point; margin of safety; degree of operating leverage	
		Consider appropriate nonfinancial information and qualitative factors when evaluating profitability		Qualitative factors (e.g., ESG, organizational values and culture, long-term vs. short-term perspective, brand reputation, employee morale, product quality, time constraints, constrained resources)	
	Evaluating relevant information for decision making and performance management	Assess relevant information for a given decision	Incremental revenue; relevant costs	Incremental revenue; relevant costs (see Cost Management); decision quality (e.g., business risk, information timeliness, reasonableness of assumptions, strategic alignment, sensitivity analysis) Common types of decisions: special order decisions; keep or drop decisions; insource or outsource decisions; product mix decisions; product emphasis decisions	
		Analyze business segments for their contribution to organizational success	Responsibility accounting; responsibility centers	Responsibility accounting; responsibility centers	Transfer pricing
	Applying technology and analytics in profitability management	Use data analytics and data visualization tools to enhance profitability management	(See Technology, Analytics, and Data Management)	(See Technology, Analytics, and Data Management)	(See Technology, Analytics, and Data Management)

Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)	Advanced Course Topics (Elective)
Technology, Analytics, and Data Management					
Management Information Systems					
	Recognizing the value of information systems for competitive advantage	Explain how information systems add value to an organization	Information for decision making, planning, and performance management (organization, segments, functions, individuals, etc.)	Information for decision making, planning, and performance management (organization, segments, functions, individuals, etc.); information users and stakeholders (internal and external); data conversion into information; accounting information systems	Business intelligence; business process performance and controls
		Describe alternative types of data and data sources	Data sources (e.g., transaction processing, accounting, production	Data types (e.g., monetary, nonmonetary; numeric, nonnumeric; continuous, categorical; text, survey, audio, video, images, click-through, biometric, etc.); data sources (e.g., transaction processing, accounting, production, marketing, customer service, human resources, decision support, strategic management, web servers, security systems, satellites, etc.)	Data types (e.g., monetary, nonmonetary; numeric, nonnumeric; continuous, categorical; text, survey, audio, video, images, click-through, biometric, etc.); data sources (e.g., transaction processing, accounting, production, marketing, customer service, human resources, decision support, strategic management, web servers, security systems, satellites, etc.)
		Evaluate the quality of data generated by information systems	Data relevance; data usefulness	Data quality criteria (e.g., accuracy, reliability, relevance, usefulness, consistency, standardization, completeness, timeliness, unbiased, accessibility, etc.), internal controls; business process controls; data extraction, cleaning, restructuring	Data quality criteria (e.g., accuracy, reliability, relevance, usefulness, consistency, standardization, completeness, timeliness, unbiased, accessibility, etc.); internal controls; business process controls; data extraction, cleaning, restructuring

Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)	Advanced Course Topics (Elective)
Data Governance					
	Explaining data policies and procedures	Explain how data governance enhances organizational value	Segregation of duties; transaction and activity reviews	Categories of internal controls: segregation of duties, physical controls, reconciliations, policies and procedures, transaction and activity reviews	Data governance; organizational value from data governance (e.g., data processes; controls; regulatory, legal, and organizational compliance; systems reliability and security; data quality); categories of internal controls: segregation of duties, physical controls, reconciliations, policies and procedures, transaction and activity reviews, information processing controls; customer management; vendor/supplier management; business continuity planning
		Describe commonly used frameworks and practices for data governance, control, and risk management	Risk mitigation	Risk mitigation; cybersecurity	Frameworks for data governance, control, and risk management (e.g., Committee of Sponsoring Organizations of the Treadway Commission (COSO), Control Objectives for Information and Related Technology (COBIT), Information Technology Infrastructure Library (ITIL); cybersecurity; risk mitigation; internal audit of controls over data; processes for system changes and maintenance; data process tools and algorithms (e.g., data extraction, cleaning, restructuring)

		Describe data through the various stages of the data life cycle	Record retention	Stages in the data life cycle; data capture to data purging; data conversion to information; system changes and maintenance	Stages in the data life cycle; data capture to data purging; data conversion to information; system changes and maintenance

Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)	Advanced Course Topics (Elective)
Data Analytics					
	Applying data analytics	Use digital technology to perform different types of analytics	Descriptive analytics	Descriptive analytics; diagnostic analytics	Analytical maturity model (descriptive analytics, diagnostic analytics, predictive analytics, and prescriptive analytics)
		Implement data science models to support operational and financial decisions	Data relationships	Information modeling; data model inputs; logical relationships; cause-and-effect relationships	Information modeling; AI; relevant algorithms; data relationships; data model inputs; data model evaluation tools (e.g., magnitude of the likelihood values, feature variables, false positive rate, confusion matrix classifications, and payoff matrix); logical relationships; cause-and-effect relationships; efficiency and effectiveness of operating activities
		Apply analytics to proactively identify and avoid decision bias		Types of decision bias	Types of decision bias (including implicit bias); cross-validation using prediction accuracy or maximum likelihood; holdout samples using full and pruned decision tree

		Prepare appropriate visualizations to facilitate and communicate data analysis	Descriptive statistics	Data analysis communication; dashboards; charts, graphs, tables, histograms, heat maps; scatterplots; misleading visuals; descriptive statistics; time series; correlations, patterns, trends, anomalies; visualization tools	Data analysis communication; dashboards; charts, graphs, tables, histograms, heat maps; scatterplots; misleading visuals; descriptive statistics; time series; correlations, patterns, trends, anomalies; visualization tools
Competencies	**Learning Outcomes**	**Learning Objectives**	**Introductory Course Topics (Required)**	**Intermediate Course Topics (Required)**	**Advanced Course Topics (Elective)**
Technology-Enabled Finance Transformation					
	Applying technology-enabled finance transformation to support organizational strategy	Explain the role of technology-enabled finance transformation initiatives in enabling strategic execution		Business process automation (e.g., robotic process automation (RPA), Alteryx, Microsoft Excel Visual Basic for Applications (VBA) macros)	Business process automation (e.g., RPA, Alteryx, Microsoft Excel VBA macros); process efficiency; business partnering; change management; continuous improvement; value-added skill development; analytics-based forecasting; integration of information systems; quality of data and information; model building
		Identify opportunities for management accountants to work with data scientists and/or information technology specialists to generate financial and nonfinancial information from a variety of data sources		Financial and nonfinancial information for a given purpose (e.g., strategies, operations, tactics, internal processes, risks, opportunities, external environment, performance management, supply chain, customer relationship, external reporting, internal reporting, data analytics, AI, etc.); data availability and quality	Terminology and concepts for working with data scientists and/or information specialists (e.g., math and statistics, inference, computer science and data skills, data algorithms and models, decision trees, pruning, data mining)

		Collaborate with information technology teams to assess and improve business processes		Cross-functional collaboration	Cross-functional collaboration; partnering between management accounting and IT; strategic and operational requirements; hardware and software configurations; development, testing, implementation, documentation, and assessment; systems development life cycle (SDLC) approaches (waterfall model, agile approaches such as Scrum)

Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)	Advanced Course Topics (Elective)
Professional Ethics					
Personal Ethics					
	Adopting an ethical mindset	Explain the importance of ethical behavior to the value added by management accountants	Ethical behavior of management accountants; professional codes of conduct	Ethical behavior of management accountants; professional codes of conduct	Ethical behavior of management accountants; professional codes of conduct
		Exhibit a professional ethical mindset	Independent frame of mind; competence; confidentiality; integrity; credibility; skepticism	Independent frame of mind; competence; confidentiality; integrity; credibility; skepticism	Independent frame of mind; competence; confidentiality; integrity; credibility; skepticism
	Acting ethically	Resolve potential conflicts among diverse ethical expectations		Whistleblowing	Conflict resolution strategies; whistleblowing
		Engage in self-reflection and continuous improvement of ethical behavior	Self-management; reflection on the ethics of past behavior; skepticism and questioning mindset about ethical behavior	Self-management; reflection on the ethics of past behavior; skepticism and questioning mindset about ethical behavior	Self-management; reflection on the ethics of past behavior; skepticism and questioning mindset about ethical behavior

Organizational Ethics					
	Encouraging an ethical organizational culture	Recommend improvements to the organization's systems and controls over ethical standards and compliance	Ethical and unethical business practices	Ethical and unethical business practices; Simons's levers of control (boundary systems, belief systems)	Ethical and unethical business practices; Simons's levers of control (boundary systems, belief systems)
		Collaborate with others to foster, clarify, and continuously improve the organizational ethical culture		Cross-functional and cultural collaboration for ethical behavior	Cross-functional and cultural collaboration for ethical behavior

Competencies	Learning Outcomes	Learning Objectives	Introductory Course Topics (Required)	Intermediate Course Topics (Required)	Advanced Course Topics (Elective)
		Explain how controls prevent and detect fraudulent and unethical activities and errors	Fraudulent and unethical activities	Fraudulent and unethical activities; fraud triangle	Fraudulent and unethical activities; fraud triangle; segregation of duties; internal controls for information systems (e.g., preventive, detective, corrective); cybersecurity; process documentation; risk assessment and mitigation; vendor management; unintended consequences of performance measures