

**Financial Policy & Procedure Instructions Manual
FPI F-2 Inventories of Consumable and Merchandise**

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I. **PURPOSE**

The policies and procedures for inventories of consumable material and merchandise for issue or sale are presented to ensure complete and accurate inventory data as required by the State and the University.

II. **DEFINITIONS**

- A. **Merchandise and Consumables:** All goods held for issue or sale, held in a warehouse or storeroom for transfer to the user, and all goods to be consumed

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as product or service which is to be issued to another department or outside agency. Examples:

- Electrical, plumbing, custodial, etc., supplies in Facilities Management
- Printing paper, inks, etc., at Publications and Printing
- Pharmaceuticals, medical supplies in medical storerooms
- Livestock, hay, grain, and straw

Merchandise and consumables inventories do **not** include items issued from a storage area to a department for use or non-capital materials purchased for direct use or consumption. Examples:

- Wastebaskets, staplers, general office supplies
- Cylinders of gas or oxygen
- Janitorial or similar supplies
- Papers or magazines for non-library use

- B. **Market:** Recognized market quotations at the date of valuation utilized for pricing at market. Adjustments for unusual conditions or circumstances may be made to quotations but documentation is required.

III. **POLICIES**

A. **General**

All merchandise inventories and consumable inventories totaling \$100,000 or more per location must be properly reflected in the University accounts and the annual financial report at June 30. Consumable inventories totaling less than \$100,000 may also be recorded if circumstances dictate. Contact the Self-Funded Accounting section of Business & Financial Services for information about recording inventories under \$100,000.

B. **Responsibilities**

The department head is responsible for the accuracy and completeness of inventories and for the operation of the inventory system in his/her department.

Safeguarding and segregation of duties: Inventories must be under the physical control of designated individuals who are held responsible for the quantities on hand. Inventories must be kept in storage areas properly safeguarded or controlled to prevent access to materials by unauthorized personnel. A record of keys to the storage areas must be kept. Inventory records must be maintained by individuals who are independent of the stores section personnel. Inventory counts must be verified by persons independent of those in charge of the inventory records.

Record retention and audits: The department responsible for the inventory must retain all records and reports identified in this FPI for at least 3 years beyond the fiscal year end. See FPI J-7. Inventory records must be made available upon request for examination by internal, State, and federal auditors and other authorized personnel. Test counts of inventories will be performed on a periodic basis.

C. **Inventory Tracking**

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Due to the many different types and sizes of inventories and the different facilities and operating requirements of the departments, inventory tracking systems may vary. The Self-Funded Accounting section of Business & Financial Services is responsible for approving departmental inventory tracking systems. Such systems must provide reliable data for preparation of complete and accurate inventory reports.

D. Inventory Count and Value

The State requires that all inventories recorded in University accounts be physically inventoried regardless of dollar amount. Inventories valued at \$100,000 or greater must be counted annually. Inventories less than \$100,000 must be counted at least biennially. Inventories under \$100,000 and not recorded in a University account may be counted for management purposes or at the discretion of Self-Funded Accounting.

Inventory valuation must be based on an actual physical count or from records of a perpetual inventory system that adequately reflects all receipts, issues and adjustments both in the perpetual records and in the general ledger. Estimates of changes in value should be booked in the year a physical count is not taken.

Inventories must be valued at the lower of cost or market. Cost must be based on the "First-in-First-out" (FIFO) method or a reasonable approximation of that method. Alternative methods of inventory cost valuation such as moving-average, weighted-average or retail inventory require approval by Self-Funded Accounting. See Appendix 1 below for descriptions of inventory cost valuation methods.

The level of non-livestock inventories should not exceed one third of the annual usage. Exceptions will be approved by Self-Funded Accounting only where it can be demonstrated that higher inventory levels are necessary for effective and efficient operations.

E. Disposition of obsolete, surplus or damaged inventory

The inventory system must provide a means of identifying slow moving, obsolete or overstocked items. Obsolete, surplus or damaged items must be removed from stock at least once a year prior to taking and reporting the June 30 inventory. The Purchasing Department has responsibility for disposal of all University property which is obsolete, damaged or surplus to a department's needs regardless of the fund concerned or the method of acquisition (purchase, contracts and grants, donation, etc.). No other department is authorized to sell, salvage, donate or destroy such items without prior approval of the Purchasing Department.

IV. PROCEDURES

A. Establishing a New Inventory

Contact Self-Funded Accounting for advice and assistance when contemplating a new inventory of merchandise or consumables.

B. Maintaining an Inventory Tracking System

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Self-Funded Accounting has approved all existing inventory tracking systems. If a change in inventory tracking systems is desired, submit a written request to Self-Funded Accounting for approval from the Director of Business & Financial Services.

1. **Perpetual inventory accounting system.** Under the perpetual inventory method, items are added or subtracted from the inventory totals immediately upon receipt or removal. This provides a running count of the inventory on hand. Basic records and procedures are outlined below.
 - a. **Inventory record.** Each item of inventory is recorded on some type of stock record card or computerized system. Minimum data includes item description, receipts, issues, quantity-on-hand, unit cost, vendor, and purchase document number.
 - b. **Issue and receipt.** To maintain an audit trail of transactions leading to the last recorded balance, record each issue and receipt, with adequate reference. Include a reference to the document that authorized the transaction. Record and note on the inventory record any items received on consignment, loaned, removed for repair, etc.
 - c. **Inventory verification.** Count and adjust (if necessary) perpetual inventory records at least annually. (See Section IV.E below.) In the case of high value items and items where physical control is less than desirable, verification should be performed more frequently.
 - d. **Adjustments.** Report net dollar value of adjustments resulting from differences between actual count and perpetual inventory records plus value of items removed from inventory due to damage, spoilage, obsolescence or surplus monthly to Self-Funded Accounting, or when counted, if verification takes place less frequently. Retain records to permit auditors to verify such adjustments.
 2. **Periodic inventory accounting system.** Under the periodic inventory method, items are received and issued without being added to or subtracted from the inventory totals. A physical count is required to provide the number of items in the inventory. See Section IV.E below.
- C. **Valuing inventory.** Inventories are to be recorded at the lower of cost or market price.
0. **Value of "goods in process".** Include in inventory any materials processed (but not yet billed) and value to include cost of materials consumed, direct labor and a reasonable allowance for overhead.
 1. **Value of farm and livestock inventories.**
 - a. **Farm inventories** - Purchased farm products will be valued at purchase price. Harvested crops on hand at inventory time (but not billed out) will be valued at cost if cost allocation can reasonably be accomplished. Where purchase price or cost allocation data is not available, market value less an estimated cost of delivery from farm to market may be used with an explanation attached.
 - b. **Livestock inventories** - Value livestock inventories at the lower of cost or market. Methods described below are applicable to raised livestock, purchased animals raised to maturity, and to the valuation of different classes of animals.

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A cattle cost study will be made at year-end by Self-Funded Accounting for one selected herd to determine the lower of cost or market value. Cost will be calculated using the "equivalent units" method in Appendix 2 below. If market proves to be lower for the test herd, all herds will be valued at market. Should cost be lower for the test herd, equivalent unit cost calculations will be made to value each herd.

Animals purchased within 90 days of fiscal year-end must be included in the inventory at cost. If the purchase cost of animals is unknown, reasonable estimates are acceptable.

Animals will be valued per head. At year end, head count and estimated weight are used for valuation.

- D. **Disposing of obsolete, surplus or damaged inventory items.** The methods of disposal, the coordination and approvals required, and the disposition of funds from property sale, depend in many cases on the source of the funds that initially purchased the property. Contact the Purchasing Department for disposition details or see the Purchasing Manual, section 53, Surplus Property - <http://www.purchasing.colostate.edu/pdf/pm53.pdf>. Complete an Equipment Accountability Change Request form - <http://www.colostate.edu/Depts/BusFin/fmeacr.pdf> for inventory to be disposed. The "type of disposition" is "other".
0. **Adjustment of department inventory records.** If perpetual inventory records are maintained, adjust the applicable inventory records to show the deletion of the items at the time they are released to the Purchasing Department for disposal. The Equipment Accountability Change Request form is the authority to drop the item(s) from inventory. Retain a copy of the Equipment Accountability Change as a backup document for a possible audit.
 1. **Disposition of money received by Purchasing Department from sale or salvage.** The proceeds from the sale or salvage of obsolete, surplus or damaged inventory must be credited to the inventory account that originally purchased the inventory. The Purchasing Department will initiate a CSU deposit receipt crediting the funding shown on the Equipment Accountability Change Request form. The income will be recorded as Other Sales and Services unless other disposition is approved by the Self-Funded Accounting.
 2. **Department cost accounting procedures.** The inventory must absorb the difference between the original cost of the items and the proceeds from the disposition. The difference is recovered by an overhead charge on all future inventory sold. Self-Funded Accounting will prepare journal entries to delete obsolete, surplus or damaged items from the general ledger based on authorization from the Purchasing Department.
- E. **Verifying Inventory**

Year-end inventory count and valuation must be made as of close of business on June 30 or adjusted to that time. Procedures are as follow.

0. **Physical arrangement.**
 - a. Arrange merchandise and consumables to be inventoried in a neat and orderly manner. This will provide for more efficient and accurate physical counts.

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- b. Prepare a diagram of the inventory location in sufficient detail to give each counter, shelf, bin, farm area, etc., an identification number. List these identification numbers (on the Inventory Count Sheets) for item location as well as for the assignment of personnel to count specific areas.
- c. Include all merchandise received prior to the start of the inventory count regardless of the scheduled date of delivery. For example, if a shipment was requested for July 8, but delivered June 25, the merchandise is included in the June 30 count.
- d. Physically segregate damaged, slow-moving or obsolete merchandise from other merchandise. Identify these items separately on the Inventory Count Sheet. Value these items at estimated salvage value.
- e. Physically segregate consumable material or merchandise in University custody but not owned by the University. Report these items separately as "non-owned property on hand". The value is shown for insurance purposes; however, the value will not be reflected in University accounting and financial records.

1. Year end cut-off

Inventory count must be taken as near to June 30 as possible. If the size of the inventory requires several days to complete the count, make provisions to adjust the count to consider receipts and issues from the time count is started until close of business June 30.

Instruct suppliers and/or Central Receiving that deliveries to the inventory location must not be made on the day(s) during which the physical counts are being made.

Segregate all merchandise received after the count starts, but before close of business on June 30, and list it on a separate Inventory Count Sheet noted as "Supplemental Inventory". Include (1) merchandise description, (2) supplier or vendor, (3) date of receipt, (4) value of merchandise and (5) vendor invoice date and number. The invoices pertaining to this merchandise are to be marked "Before Inventory" and submitted promptly for payment. If this merchandise is immediately issued or consumed, include an explanation.

2. Personnel

- a. The persons performing the physical counts must be familiar with the merchandise being inventoried, but (to the extent possible) not directly associated with the inventory function.
- b. The persons performing the physical counts should work in pairs whenever possible—one person counting, the other person recording the counts.
- c. Assign personnel to count specific areas. This assignment of personnel is essential to prevent counting some areas more than once and other areas not at all.

3. Identification of consumables or merchandise

- a. Describe merchandise on the Inventory Count Sheets concisely but in sufficient detail to specifically identify the items being counted.
- b. Indicate unit of measure on the Inventory Count Sheets--i.e. case of 24 cans, dozen, each. Open cases or partially used bottles may not be counted unless not counting would materially

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affect the inventory value. If broken lots are included in the inventory, show these as a separate line item.

- c. If material belongs to more than one fund, separate Inventory Count Sheets must be submitted for each fund involved.
- d. Indicate any special condition of merchandise (used, reparable, damaged, etc.) on the Inventory Count Sheets.

4. Inventory Count Sheets.

- a. Inventory Count Sheets - <http://www.colostate.edu/Depts/BusFin/fm.html> are available for use. Number the Inventory Count Sheets before starting the count (use the page number field) and control the sheets by assigning blocks of Sheets to the persons making the physical counts. This is important to ensure that Inventory Count Sheets are accounted for at the end of the physical count. A computer listing or other preprinted list may be substituted for the Inventory Count Sheets.

If preprinted lists are used, zero quantities must be shown prior to starting the count.

- b. Each Inventory Count Sheet must be signed and dated by the person(s) making the physical counts.
- c. Each Inventory Count Sheet must be completely filled in. When a full Sheet is not used, rule it off and marked "end of area".
- d. The individual responsible for the inventory must ensure that the physical counts are accurate. This may include verifying the accuracy of the recorded count. The count verifications must be made by persons other than the team doing the original count. These count verifications are independent from any test counts made by auditors or personnel from Self-Funded Accounting.

5. **Value extensions.** After the count has been recorded as outlined above, enter the value, total each page and the entire inventory. All calculations should be verified by a second individual. If a complete check is not possible, sufficient spot checks must be accomplished to ensure accuracy. Identify the personnel making the extensions and spot checks on the Inventory Count Sheets and the Inventory Certificate.

6. **Comparisons of count data with records.** Upon completion of the physical inventory, compare the total item count and value obtained from the physical inventory with the item count and value according to the inventory tracking system.

Discrepancies of physical count versus recorded balances less than 5% of the total recorded quantity on hand (and less than 5% of the total value) must be noted by the inventory taker or clerk. Larger discrepancies must be rechecked and approved by a designated supervisor. The value of the inventory from physical count and recorded amount must match 100 percent for the Inventory Certificate. See Section 8 below.

7. **Inventory summary and certificate.** Enter the totals from each Inventory Count Sheet onto the Inventory Count Sheet Summary - <http://www.colostate.edu/Depts/BusFin/fm.html>. Calculate and enter the grand total for the inventory. Complete and attach an Inventory Certificate - <http://www.colostate.edu/Depts/BusFin/fm.html> to the Inventory Count Sheets (or computer listing) and Summary Sheet.

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Submit the inventory packet to Self-Funded Accounting by the due date published annually in the year-end instructions - <http://www.colostate.edu/Depts/BusFin/ye.html> by Business and Financial Services. Submit separate inventory packets for each fund involved.

8. University farms and livestock inventory.

- a. **Livestock.** A physical count of livestock must be made as of June 30. Departments may require monthly reports, however for University inventory purposes, the report is required only at the end of the fiscal year. The ending inventory count and valuation is recorded on the Summary Animal Inventory Report or facsimile form. The births, deaths, sales, etc. represent the total year's activity.
- b. **Feeds.** Livestock feeds (including hay, straw, silage, grains, meal, salt, etc.) which are on hand June 30 must be inventoried and valued. A separate inventory of each physically separated lot of feed must be made giving the specific location (stack, bin, etc.)
- c. **Bulk gas and oil** must be measured and reported in gallons.
- d. **Crops which have been harvested**, are on hand June 30 but have not been sold (and officially billed out) must be listed as inventory. Annual growing crops, not yet harvested, are excluded from inventory

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Appendix 1: Cost Valuation Methods

First-In First-Out (FIFO) cost method: A method of inventory valuation in which cost factors are assumed to flow in chronological order with the first item received being the first item issued. The costs remaining in inventory therefore bear close relationship to current replacement prices.

Average Cost Method of Pricing: prices items in the inventory on the basis of the average cost of all similar goods available during the period.

Moving-average price: A new average price per unit of issue is calculated by adding the cost of purchased items just received to the cost of present inventory (quantity on hand multiplied by present average unit cost) and then dividing the total value by the total number of units now in inventory.

For example:

Items in inventory 20 at \$10.00 average cost = \$ 200.00

Items just purchased

100 at \$12.00 = \$1,200.00

Total cost = \$1,400.00

1400 divided by 120 gives new average cost of \$11.67

Weighted-average price: Total cost of goods available for sale divided by the total number of units available (see example)

<u>Date of invoice</u>	<u>No. Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
March 2	2,000	\$4.00	\$8,000
March 15	6,000	4.40	26,400
March 30	<u>2,000</u>	4.75	<u>9,500</u>
Total goods available	10,000		\$43,900

Weighted Average Cost: $\frac{\$43,900}{10,000} = \4.39

Retail Inventory Method of pricing: The inventory, priced at retail value, is converted to an estimate of cost by application of mark up ratio and other applicable factors. This procedure is illustrated by the following example:

Purchases, plus beginning inventory (at cost)	\$50,000	64.10%
Original mark on	\$30,000	
Plus net mark up	2,000	
Less net mark down	<u>-4,000</u>	
Net mark on	<u>28,000</u>	35.90%
Retail value	\$78,000	100.00%
Less net sales	<u>-40,000</u>	
Inventory value at retail	\$38,000	100.00%

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Less inventory mark on	<u>-13,642</u>	35.90%
Estimated cost of inventory	<u>\$24,358</u>	64.10%

In this example, the mark up is 35.9%. By deducting the mark up from the ending retail value of the inventory, the cost value of the ending inventory is calculated.

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Appendix 2: Equivalent Units Method

Allocation of total herd costs to various weighted animal categories based on the ratio of the total herd equivalent units and the equivalent units for a category. Costs associated with mature females are reallocated to the suckling category. The following example should illustrate the "equivalent units" method:

Month of May	Suckling		Weanling		Mature	
	Qty	Value	Qty	Value	Qty	Value
Beginning Inventory	220	\$30,231	113	\$29,297	247	\$62,656
Transfers between categories	0	0	0	0	0	0
Sales	0	0	(1)	0	0	0
Deaths	(10)	(1,374) ³	_____	(259) ⁴	(5)	(1,268) ⁵
Sub-total	210	28,857	112	29,038	242	61,388
Additional cost	0	3,752 ²	0	1,042 ¹	0	0
Ending inventory	210	32,609	112	30,080	242	61,388
Unit price		\$155		\$269		\$254

Allocation Calculations

1 Weanlings

112 animals x .6 weighting factor* = 67.2
67.2
309.2 x \$4,793.57 = \$1,041.81

2 Mature

242 animals x 1.0 weighting factor = 242
242
309.2 x 4,793.57 = 3,751.76

NOTE: 309.2 = 67.2 + 242
\$4,793.57 = Herd cost for the period
Cost of mature females is allocated to sucklings

* Weighting factor is an equivalent animal unit for immature cattle. See AICPA Services to Client Series, Farmers and Ranchers, (1974) page 9-7.

Calculation of deaths and sales

3 Sucklings

10 deaths at beginning inventory unit value of \$137.42 =
\$1,374.20

4 Weanlings

1 sale at beginning inventory unit value of \$259.26 =
\$259.26

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5 Mature

5 sales at beginning inventory unit value of \$253.67 =
\$1,269.35