Module 4
Section B: Capacity and Production Activity Control

Term
Bill of resources

Module 4
Section B: Capacity and Production Activity Control

Term
Bottleneck

Module 4
Section B: Capacity and Production Activity Control

Term
Capacity control

Module 4
Section B: Capacity and Production Activity Control

Term
Capacity management

Module 4
Section B: Capacity and Production Activity Control

Term
Capacity planning

Module 4
Section B: Capacity and Production Activity Control

Term
Cycle time

Module 4
Section B: Capacity and Production Activity Control

Term
Demand pull

Module 4
Section B: Capacity and Production Activity Control

Term
Efficiency

A facility, function, department, or resource whose capacity is less than the demand placed upon it. For example, [this type of] machine or work center exists where jobs are processed at a slower rate than they are demanded. Syn.: bottleneck operation.

A listing of the required capacity and key resources needed to manufacture one unit of a selected item or family. Rough-cut capacity planning uses [these] to calculate the approximate capacity requirements of the master production schedule. Resource planning may use a form of [this]. Syn.: bill of capacity. See: bill of labor, capacity planning using overall factors, product load profile, resource profile, rough-cut capacity planning, routing.

The function of establishing, measuring, monitoring, and adjusting limits or levels of capacity in order to execute all manufacturing schedules (i.e., the production plan, master production schedule, material requirements plan, and dispatch list). [It] is executed at four levels: resource requirements planning, rough-cut capacity planning, capacity requirements planning, and input/output control.

The process of measuring production output and comparing it with the capacity plan, determining if the variance exceeds pre-established limits, and taking corrective action to get back on plan if the limits are exceeded. See: input/output control.

1) In industrial engineering, the time between the completion of two discrete units of production. For example, [if] motors [are] assembled at a rate of 120 per hour, [this] is 30 seconds. 2) In materials management, the length of time from when material enters a production facility until it exits. Syn.: throughput time.

The process of determining the amount of capacity required to produce in the future. This process may be performed at an aggregate or product-line level [...], at the master-scheduling level [...], and at the material requirements planning level [...]. See: capacity requirements planning, resource planning, rough-cut capacity planning.

A measurement (usually expressed as a percentage) of the actual output relative to the standard output expected. [This] measures how well something is performing relative to existing standards; in contrast, productivity measures output relative to a specific input (e.g., tons/labor hour). [It] is the ratio of (1) actual units produced to the standard rate of production expected in a time period, or (2) standard hours produced to actual hours worked (taking longer means less [of this]), or (3) actual dollar volume of output to a standard dollar volume in a time period. For example: (1) There is a standard of 100 pieces per hour and 780 units are produced in one eight-hour shift; [this] is 780 ÷ 800 converted to a percentage, or 97.5 percent. (2) The work is measured in hours and took 8.21 hours to produce 8 standard hours; [this] is 8 ÷ 8.21 converted to a percentage, or 97.5 percent. (3) The work is measured in dollars and produces $780 with a standard of $800; [this] is $780 ÷ $800 converted to a percentage, or 97.5 percent.

The triggering of material movement to a work center only when that work center is ready to begin the next job. In effect, it shortens or eliminates the queue from in front of a work center, but it can cause a queue at the end of a preceding work center. [This] also can occur within a supply chain, in which case it often is called a demand chain.

Module 4
Section B: Capacity and Production Activity Control

Term
Kanban

Module 4
Section B: Capacity and Production Activity Control

Term
Load

Module 4
Section B: Capacity and Production Activity Control

Term
Load leveling

Module 4
Section B: Capacity and Production Activity Control

Term
Lot size

Module 4
Section B: Capacity and Production Activity Control

Term
Manufacturing lead time

Module 4
Section B: Capacity and Production Activity Control

Term
Resource management

Module 4
Section B: Capacity and Production Activity Control

Term
Resource profile

Module 4
Section B: Capacity and Production Activity Control

Term
Rough-cut capacity planning (RCCP)

The amount of planned work scheduled for and actual work released to a facility, work center, or operation for a specific span of time. Usually expressed in terms of standard hours of work or, when items consume similar resources at the same rate, units of production. Syn.: workload.

A method of just-in-time production that uses standard containers or lot sizes with a single card attached to each. It is a pull system in which work centers signal with a card that they wish to withdraw parts from feeding operations or suppliers. [This] Japanese word, loosely translated, means card, billboard, or sign, but other signaling devices such as colored golf balls have also been used. The term is often used synonymously for the specific scheduling system developed and used by the Toyota Corporation in Japan. See: move card, production card, synchronized production.

The amount of a particular item that is ordered from the plant or a supplier or issued as a standard quantity to the production process. Syn.: order quantity.

Spreading orders out in time or rescheduling operations so that the amount of work to be done in sequential time periods tends to be distributed evenly and is achievable. Although [this ideally applies to] both material and labor, specific businesses and industries may load to one or the other exclusively (e.g., service industries). Syn.: capacity smoothing, level loading. See: level schedule.

1) The planning and validation of all organizational resources. 2) The effective identification, planning, scheduling, execution, and control of all organizational resources to produce a good or service that provides customer satisfaction and supports the organization's competitive edge and ultimately, its organizational goals. 3) An emerging field of study emphasizing the systems perspective, encompassing both the product and process life cycles, and focusing on the integration of organizational resources toward the effective realization of organizational goals. Resources include materials; maintenance, repair, and operating supplies; production and supporting equipment; facilities; direct and indirect employees; staff; administrative and professional employees; information; knowledge; and capital. Syn.: integrated resource management.

The total time required to manufacture an item, exclusive of lower-level purchasing lead time. For make-to-order products, it is the length of time between the release of an order to the production process and shipment to the final customer. For make-to-stock products, it is the length of time between the release of an order to the production process and receipt into inventory. Included are order preparation time, queue time, setup time, run time, move time, inspection time, and put-away time. Syn.: manufacturing cycle, production cycle, production lead time. See: lead time.

The process of converting the master production schedule into requirements for key resources often including labor, machinery, warehouse space, suppliers' capabilities, and, in some cases, money. Comparison to available or demonstrated capacity is usually done for each key resource. This comparison assists the master scheduler in establishing a feasible master production schedule. Three approaches to performing [this] are the bill of labor (resources, capacity) approach, the capacity planning using overall factors approach, and the resource profile approach. See: bill of resources, capacity planning, capacity planning using overall factors, product load profile, resource profile.

The standard hours of load placed on a resource by time period. Production lead-time data is taken into account to provide time-phased projections of the capacity requirements for individual production facilities. See: bill of resources, capacity planning using overall factors, product load profile, rough-cut capacity planning.

Module 4

Section B: Capacity and Production Activity Control

Term

Utilization

1) A measure (usually expressed as a percentage) of how intensively a resource is being used to produce a good or service. Compares actual time used to available time. Traditionally, calculated as the ratio of direct time charged (run time plus setup time) to the clock time available. [It] is a percentage between 0 percent and 100 percent that is equal to 100 percent minus the percentage of time lost due to the unavailability of machines, tools, workers, and so forth. See: efficiency, lost time factor, productivity. 2) In the theory of constraints, activation of a resource that productively contributes to reaching the goal. Over-activation of a resource does not productively [use] a resource. See: available time.