

Indicator 9: Program Development

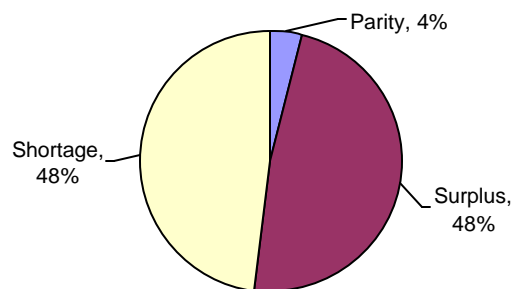
Measure 9A: Program Planning Gap Analysis

Definition: Measure 9A reports the gap between the labor market supply in academic program areas and labor demand in occupational areas related to these programs. Academic programs are identified by the national Classification of Instructional Programs (CIP) taxonomy and occupations are based on the national Standard Occupational Classification (SOC). For analysis purposes, one or more academic programs and one or more occupations have been directly linked to each other. The resulting set of programs and occupations is called a “unit of analysis”. The gap is the difference between labor market supply and demand, computed as: (Unemployed + Completers) minus (Job Vacancies + Average Annual Growth + Average Annual Replacement Openings). For the currently reported data, unemployed supply and job vacancy demand data are from 4th quarter 2003 and 2nd quarter 2004, while completer supply is from fiscal year 2002. The numerator of the reported measure is the number of units of analysis in which there is a labor market shortage, surplus, or parity (with parity defined as a labor market supply within plus-or-minus 5 percent of labor market demand). The denominator is the total number of units of analysis (N=221). To ensure optimal statistical validity and practical meaningfulness, units of analysis with a labor market demand of less than 20 are excluded from the denominator, as are units where the System is not authorized to provide training (e.g., medical doctors).

Significance: Measure 9A is significant in that it indicates the extent to which colleges and universities are aligning instructional programs and providing an educated workforce to meet the needs of Minnesota employers.

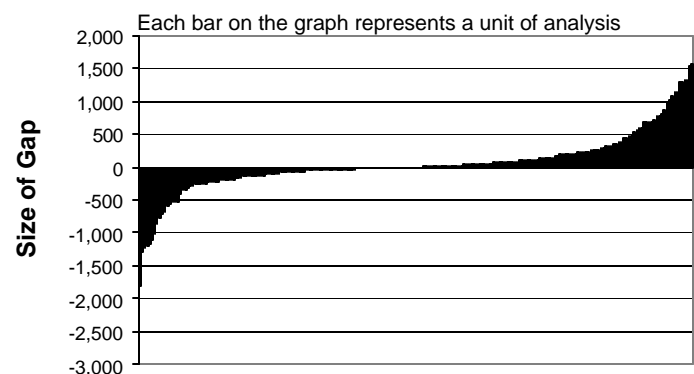
Measure: With parity defined as a labor supply within plus-or-minus 5 percent of labor market demand, 48 percent of the units of analysis are in shortage, 48 percent are in surplus and 4 percent are in parity, as shown in Figure 9A-1. Figure 9A-2 displays a frequency distribution of the size of the gaps (supply minus demand), with each bar representing a unit of analysis.

Figure 9A-1
PERCENT OF UNITS OF ANALYSIS WITH
STATEWIDE SHORTAGE, SURPLUS, PARITY
N=221 units of analysis



*Parity is defined as supply being within plus-or-minus 5% of demand

Figure 9A-2
FREQUENCY DISTRIBUTION: SIZE OF PROGRAM
PLANNING GAPS



Two extreme outlying units have been excluded in order to optimally scale the graph. These are: Sales, Merchandising and Marketing Operations (Gap of -6434) and Food Service Mgmt, Waiter/Waitress, Bartending (Gap of -3638).

Drill Downs - Shortages:

Figure 9A-3a displays the top 15 units of analysis with the greatest **absolute numerical** program planning *shortages*.

Figure 9A-3a
TOP 15 UNITS OF ANALYSIS WITH GREATEST NUMERICAL SHORTAGE

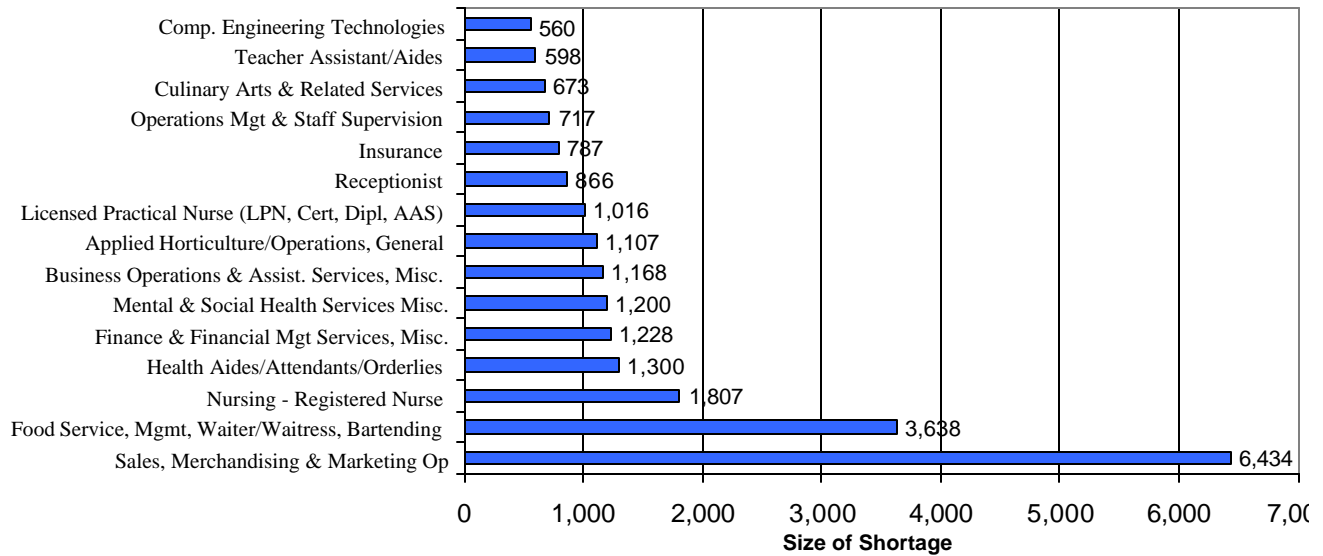
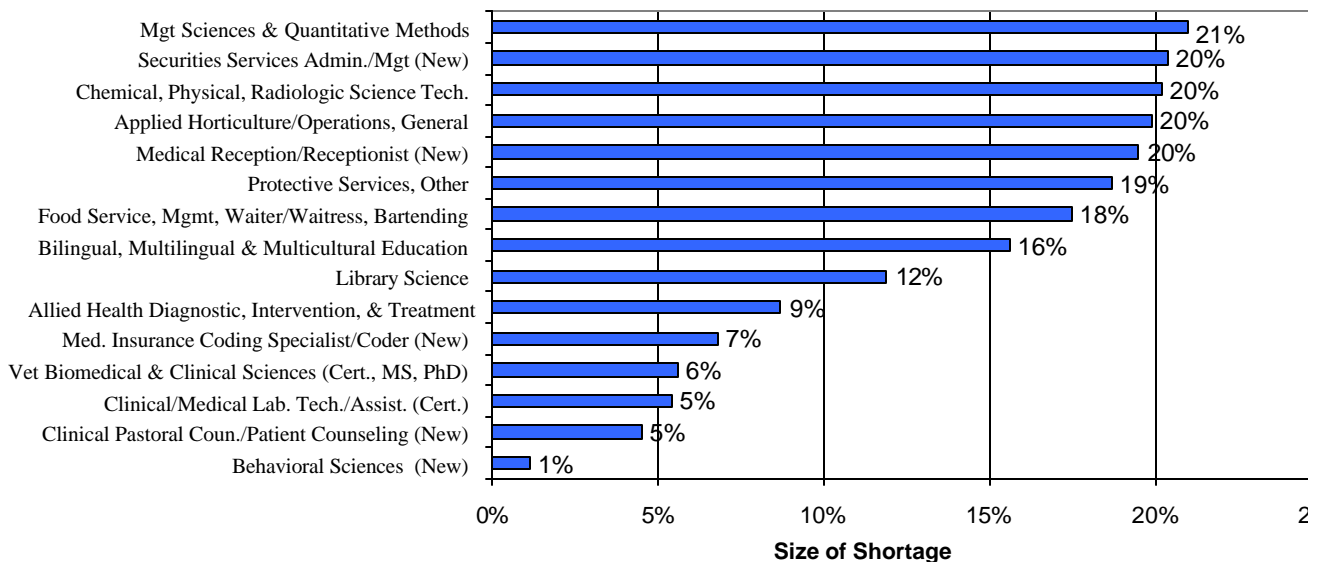


Figure 9A-3b displays the top 15 units of analysis with the greatest *shortages* in terms of **supply as a percent of demand** (i.e., lowest percent of labor market demand being met).

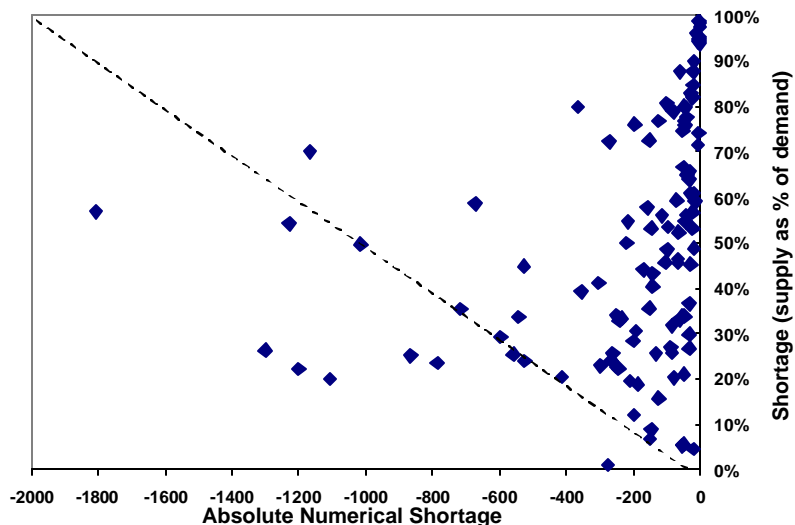
Figure 9A-3b
TOP 15 UNITS OF ANALYSIS WITH GREATEST PERCENT SHORTAGE (LOWEST PERCENT OF LABOR MARKET DEMAND MET)



Drill Downs – Shortages (continued)

Figure 9A-5a is a scatterplot of the units of analysis where the percentage of labor market demand met is less than 100 percent. Each data point in the scatterplot represents a unit of analysis, with the correlation of the unit's percentage and numerical shortages. The intent of this display is to identify those units of analysis with combinations of *both* high numerical shortages (appearing further to the left on the graph) *and* low percentages of market demand met (appearing lower on the vertical axis of the graph).

Figure 9A-5a
UNITS OF ANALYSIS: CORRELATION OF ABSOLUTE NUMERICAL AND PERCENTAGE SHORTAGE



Two extreme outlier Units of Analysis are omitted from the above display in order to obtain optimal graphical scaling. These units are: Food Service, Mgmt, Waiter/Waitress, Bartending (-3638 shortage, 18% demand met) and Sales, Merchandising and Marketing Operations (-6434 shortage, 40% demand met)

Figure 9A-5b lists the data points (units of analysis) from Figure 9A-5a that fell below the diagonal dotted line in Figure 9A-5a. These are the units of analysis with both the the greatest *numerical* and *percentage* shortages.

Figure 9A-5b
UNITS OF ANALYSIS WITH GREATEST NUMERICAL AND PERCENTAGE SHORTAGE
 (ordered alphabetically)

Unit of Analysis	Numerical Shortage	Percent Shortage
Applied Horticulture/Horticultural Operations, General	-1,107	20%
Behavioral Sciences (New)	-276	1%
Computer Engineering Technologies/Technicians	-560	25%
Customer Service Support/Call Center/Teleservice Operation (New)	-526	24%
Finance and Financial Management Services, Miscellaneous	-1,228	54%
Food Service, Mgmt, Waiter/Waitress, Bartending	-3,638	18%
Health Aides/Attendants/Orderlies	-1,300	26%
Insurance	-787	24%
Licensed Practical Nurse Training (LPN, Cert, Dipl, AAS)	-1,016	50%
Medical Insurance Coding Specialist/Coder (New)	-151	7%
Mental and Social Health Services and Allied Professions, Miscellaneous	-1,200	22%
Nursing - Registered Nurse	-1,807	57%
Operations Management & Staff Supervision	-717	35%
Receptionist	-866	25%
Sales, Merchandising and Marketing Operations	-6,434	40%
Securities Services Administration/Management (New)	-414	20%
Teacher Assistant/Aides	-598	29%

Drill Downs - Surpluses

Figure 9A-3c displays the top 15 units of analysis with the greatest **absolute numerical** program planning *surpluses*.

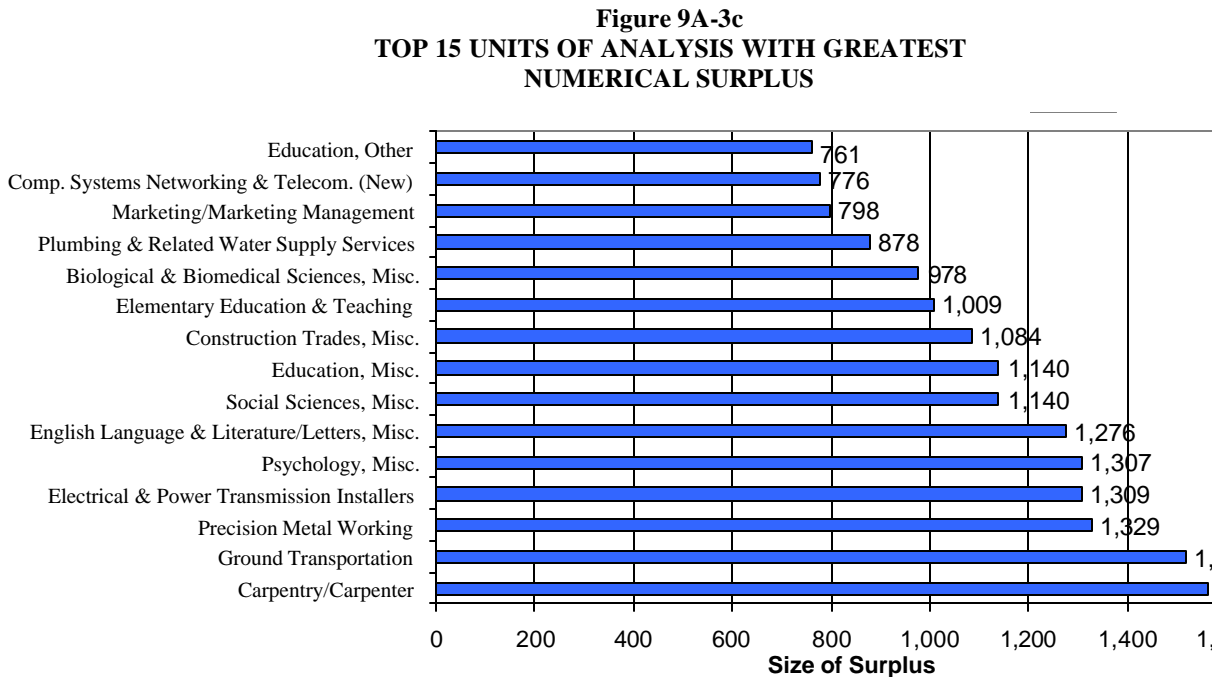
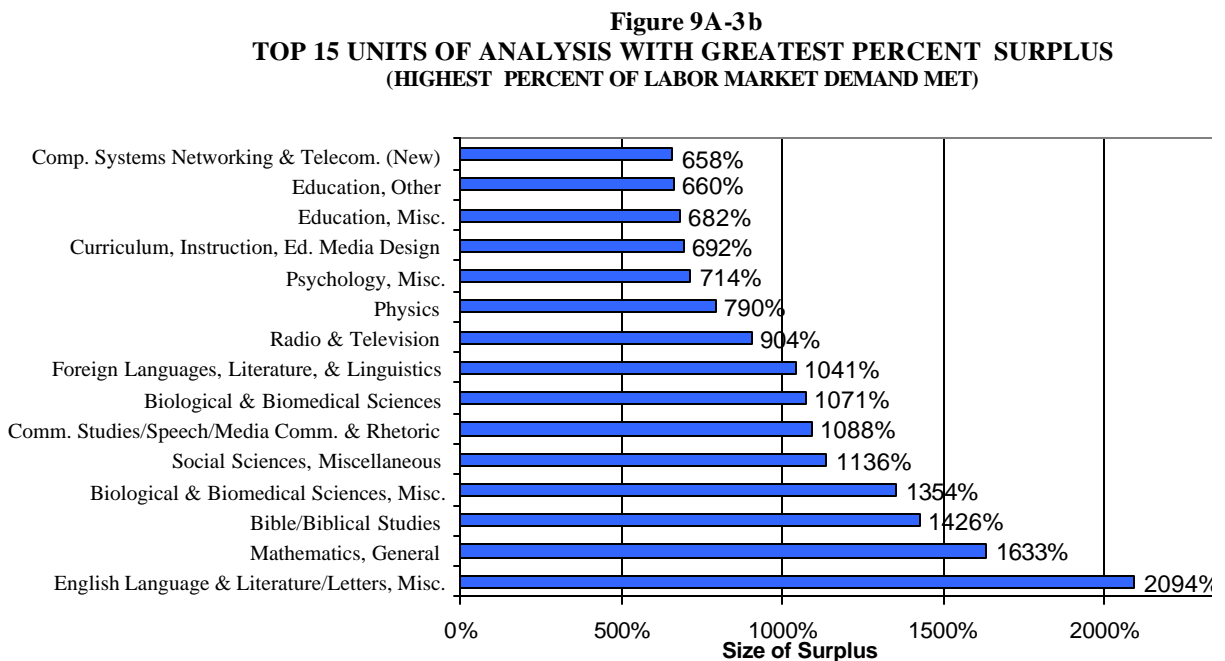


Figure 9A-3b displays the top 15 units of analysis with the greatest *surpluses* in terms of **supply as a percent of demand** (i.e., highest percent of labor market demand being met).



Measure 9B: Market Share

Definition: Measure 9B reports overall market share by award level for Minnesota sectors of higher education: Minnesota State Colleges and Universities, University of Minnesota, private four-year colleges and universities, and other two-year colleges. The comparative market share for the these sectors is expressed in terms of the absolute number of awards and as a percent of awards within each level. For the percentage measure, the numerator is the number of awards for the sector, and the denominator is the total awards across all sectors.

Significance: Measure 9B is significant in that it indicates the overall market presence of System institutions relative to other institutions that are providing the same types of awards.

Measure: Figure 9B-1 shows the total number of awards from Minnesota sectors of higher education for fiscal year 2003. Figure 9B-2 expresses these numbers in terms of percentages for each sector. Among the various sectors, System institutions awarded 80 percent of sub-baccalaureate awards, 33 percent of bachelor's degrees, 14 percent of master's degrees, and 50 percent of post-masters certificates.

Figure 9B-1
NUMBER OF AWARDS BY LEVEL, FY2003
MINNESOTA SECTORS OF HIGHER EDUCATION

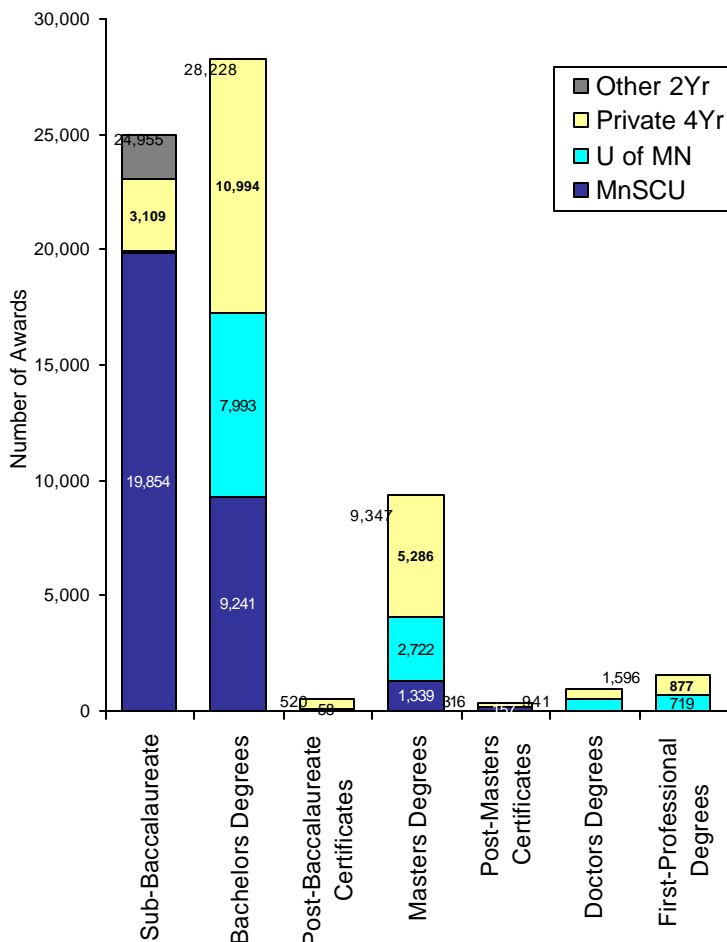
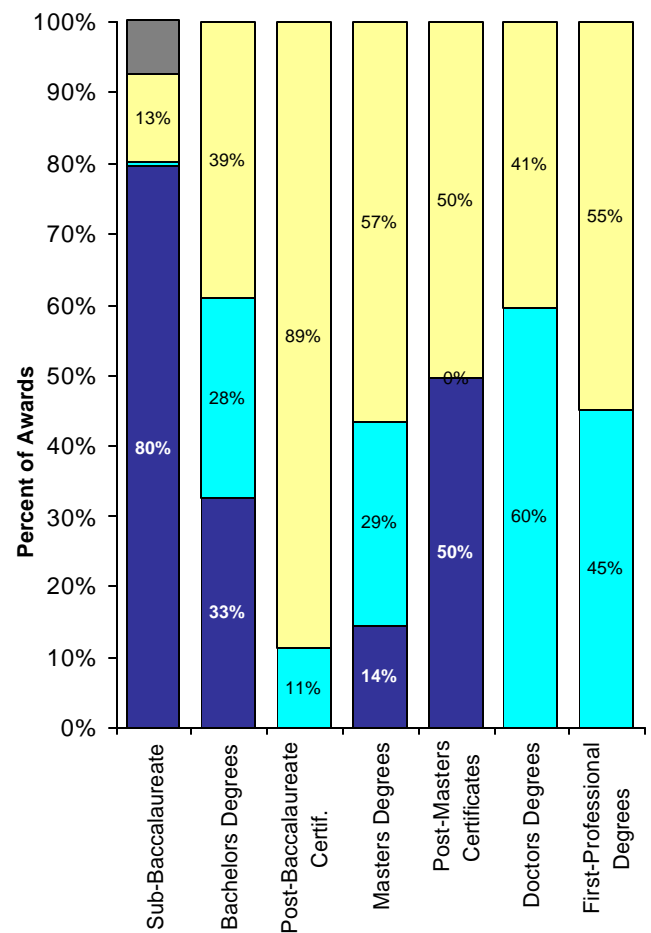


Figure 9B-2
PERCENT OF AWARDS BY LEVEL, FY2003
MINNESOTA SECTORS OF HIGHER EDUCATION



Measure 9C: Course Delivery Methods

Definition: Measure 9C reports the various methods by which courses are delivered to students: type of instruction, times of day, days of week, and types of media for course sections delivered through special media. For both day of week and time of day measures, the denominator is the total number of course sections. For the day of week measure, the numerator is the number of course sections with meetings in each day of the week. For the time of day measure the numerator is the number of course sections with a start time on or within each hour of the day. For the media measure the denominator is the total number of *media* sections, and the numerator is the number of sections using specific types of media.

Significance: Measure 9C is significant in that it indicates the extent of diversity in course delivery methods that are offered to meet the needs System students.

Measure 9C-1: Figures 9C-1a shows the percentage distribution of instructional types across all credit course sections for fiscal year 2004. Figure 9C-21b shows this distribution for non-credit courses. An instructional type is displayed if it represented at least 5 percent of total sections in *any one* of the institutional categories (college, university or systemwide), and is then displayed for all institutional categories. Instructional types that represented less than 5 percent of all sections in all institution categories are aggregated into “All Other Types”. The data show that, for System credit courses, 56 percent of all sections are Lecture, while for non-credit courses, Lecture represents only 4 percent of University course sections and 10 percent of College sections. Contract/Custom Training represents a significant proportion of non-credit instructional types (29 percent of university sections and 50 percent of college sections).

Figure 9C-1a
COURSE SECTIONS BY INSTRUCTIONAL TYPE
FY2004

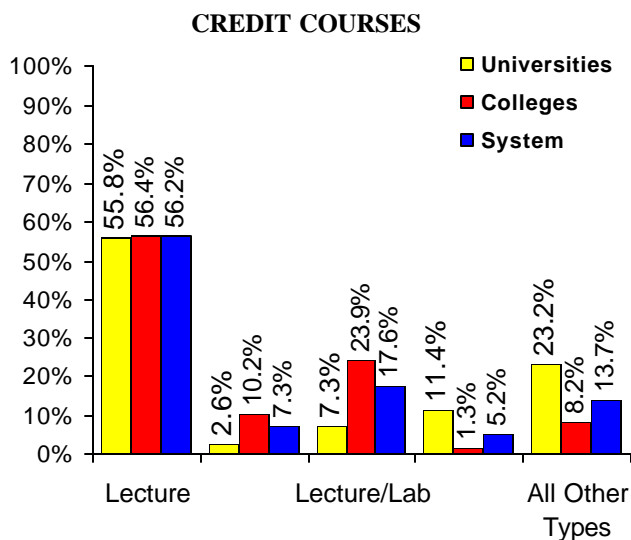
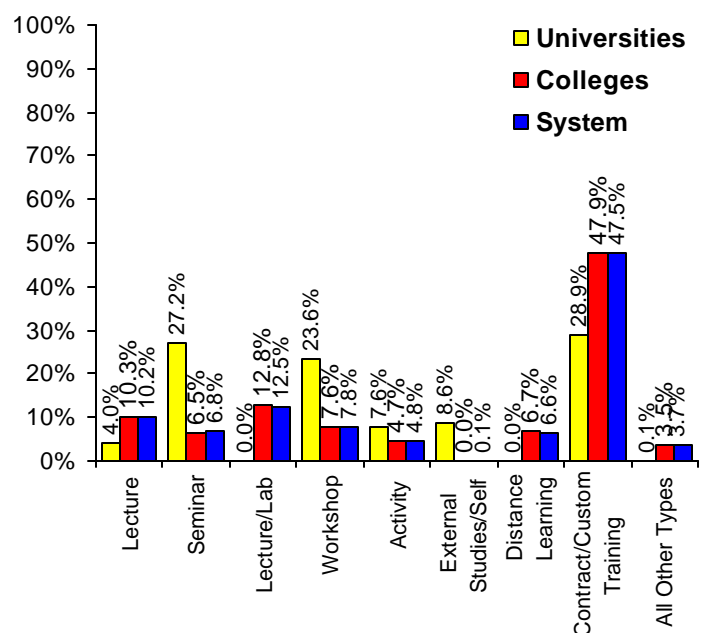


Figure 9C-1b
COURSE SECTIONS BY INSTRUCTIONAL TYPE
FY2004
NON-CREDIT COURSES



Measure 9C-2: Figures 9C-2a through 9C-2d show the percentage distribution of the times of day course sections are offered, for fiscal year 2004. The analysis includes courses with instructional types of lecture, lab and lecture/lab. For credit courses, Monday through Thursday are the most prevalent days, with 40 percent to 50 percent of sections having meeting times these days. Less than 2 percent of credit courses at colleges and universities have meeting days on weekends; however, for non-credit courses, 16 percent of sections meet on Saturday and 7 percent meet on Sunday. For credit courses, at the System level, the most prevalent start time is the 8AM hour, with 13 percent of sections starting on or within this hour followed by the 9AM hour and 6PM hour (each with 12 percent of sections starting in these hours).

Figure 9C-2a
COURSE SECTIONS BY DAY OF WEEK, FY2004
CREDIT COURSES

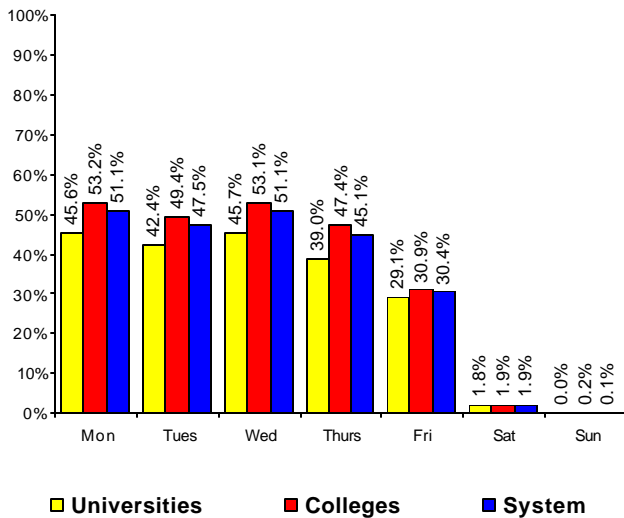


Figure 9C-2b
COURSE SECTIONS BY DAY OF WEEK, FY2004
NON-CREDIT COURSES

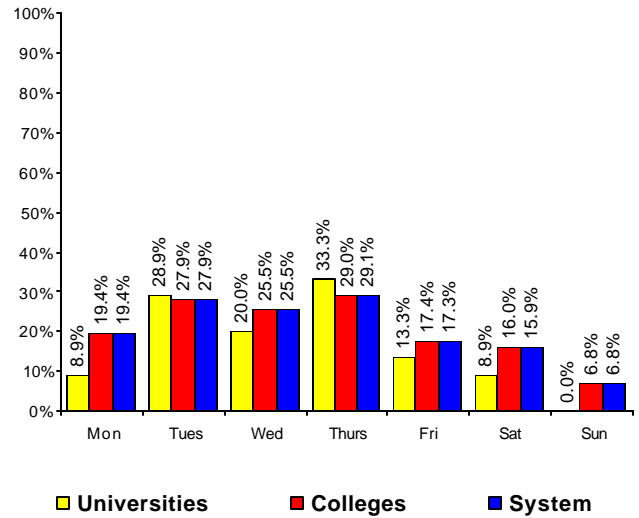


Figure 9C-2c
COURSE SECTIONS BY START TIME, FY2004
CREDIT COURSES

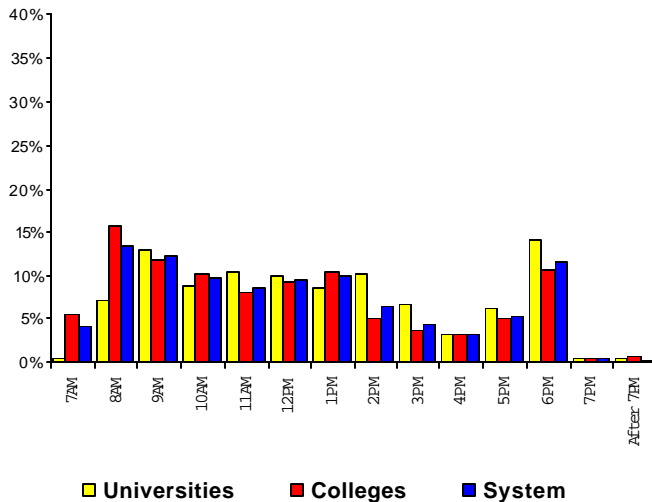
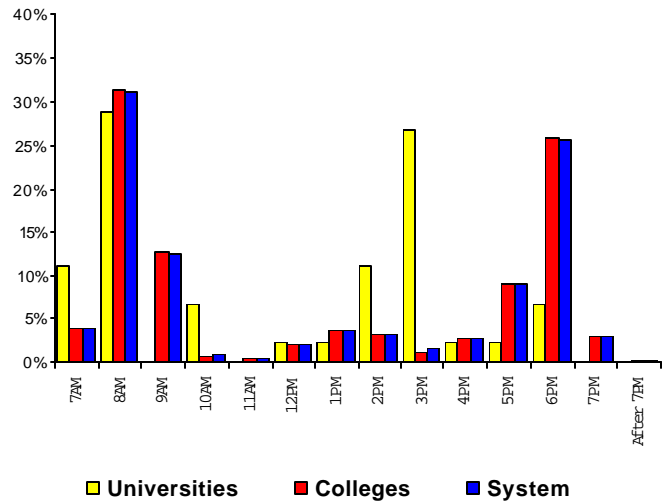


Figure 9C-2d
COURSE SECTIONS BY START TIME, FY2004
NON-CREDIT COURSES



Measure 9C-3: Figures 9C-3a and 9C-3b show the percentages of course sections that are offered using the various types of media. It is important to note that the denominator for the percentage is the number of course sections that use any type of media, not all course sections. In fiscal year 2004, 5.4 percent of credit course sections and 6.7 percent of non-credit course sections used one or more media types. Internet is the most prevalent form of media used with 56 percent of System media sections offered for credit, while 96 percent of non-credit media sections used Internet.

Figure 9C-3a
TYPES OF MEDIA USED IN MEDIA SECTIONS,
FY2004
CREDIT COURSES

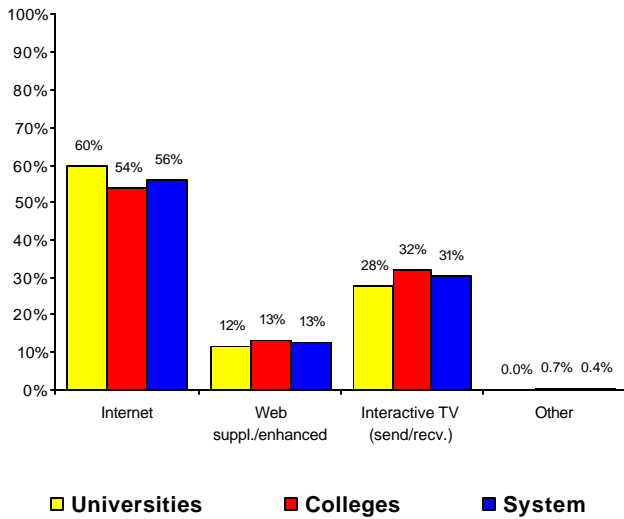


Figure 9C-3b
TYPES OF MEDIA USED IN MEDIA SECTIONS,
FY2004
NON-CREDIT COURSES

