



California  
Community  
Colleges



INSTITUTIONAL EFFECTIVENESS  
PARTNERSHIP INITIATIVE

# Understanding and Calculating FTES and Efficiency

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## Preface

**The Strategic Enrollment Management (SEM) Project.** The SEM Project began in 2016 as part of the suite of resources, tools, and professional development opportunities in the Professional Learning Network provided through the Institutional Effectiveness Partnership Initiative (IEPI) at the California Community Colleges Chancellor's Office. The SEM Project was developed by a core team of community college educators with collective expertise, i.e., instruction, student services, business and finance, and institutional research and planning. The SEM Core Team spent approximately one year researching the field of enrollment management in higher education, and worked with an advisory group comprised of college representatives from across the state of California and across constituent groups. Some of the resulting tools, resources, and services include:

- SEM Institutional Self-Assessment and Facilitator's Guide
- Nine resource guides and companion materials covering various SEM topics
- A bank of SEM Promising Practices
- A one-year cohort-based SEM Program in which 15 colleges participate in a two-day SEM academy and receive support from a team of SEM coaches on their SEM project.

**Background: Intentional Focus on Completion.** In order to align the California Community Colleges (CCC) system with the national student completion goals, in 2017 the Chancellor's Office spearheaded the development of a new strategic vision and imperative for the CCC system of colleges entitled, *Vision for Success*

(<http://californiacommunitycolleges.cccco.edu/portals/0/reports/vision-for-success.pdf>).

This new strategic vision brought a deeper, more intentional focus on the holistic needs of students and a greater call for student completions. The goals for the system through 2022 in the Vision for Success (VFS) are to:

1. Increase by at least 20 percent the number of CCC students annually who acquire associate degrees, credentials, certificates, or specific skill sets that prepare them for an in-demand job
2. Increase by 35 percent the number of CCC students transferring annually to a University of California (UC) or California State University (CSU).
3. Decrease the average number of units accumulated by CCC students earning associate degrees, from approximately 87 total units (the most recent system-wide average) to 79 total units—the average among the quintile of colleges showing the strongest performance on this measure.
4. Increase the percent of exiting Career Technical Education (CTE) students who report being employed in their field of study, from the most recent statewide average of 60 percent to an improved rate of 69 percent—the average among the quintile of colleges showing the strongest performance on this measure.



5. Reduce equity gaps across all of the above measures through faster improvements among traditionally underrepresented student groups, with the goal of cutting achievement gaps by 40 percent within 5 years and fully closing those achievement gaps within 10 years.
6. Reduce regional achievement gaps across all of the above measures through faster improvements among colleges located in regions with the lowest educational attainment of adults, with the ultimate goal of fully closing regional achievement gaps within 10 years.

In order to help the CCCs accomplish the goals in the VFS, the Chancellor's Office mandated two significant system-wide changes. The first one was Guided Pathways (GP), which creates a highly structured approach to student success and provides all students with a set of clear course-taking patterns and supports. The key principles of Guided Pathways include:

- Programs that are fully mapped out and aligned;
- Redesigned and integrated basic skills/developmental education classes;
- Proactive academic and career advising;
- Structured on-boarding processes;
- Responsive student tracking systems; and,
- Instructional support and co-curricular activities.

The second significant mandate was a change in the formula used to provide the CCCs their operational monies. Traditionally, funding had been allocated based on numbers of Full-Time Equivalent Students (FTES). The Student Centered Funding Formula (SCFF) is a new way to allocate funding to community college districts. The SCFF supports access to funding through enrollment-based funding, as well as student equity. The SCFF targets funds to districts that serve low-income students and student success equitably by providing districts with additional resources for successful student outcomes. The SCFF includes the following three allocations:

**Base Allocation.** The Base Allocation is based on districtwide enrollments. The sum of the Base Allocation funding formula in the SCFF is comprised of: 1) the number of colleges and centers in a district, 2) the size in terms of enrollments, 3) the enrollments in credit, noncredit, and career development and college preparation (CDCP) noncredit courses, and 4) enrollment of special admit students and inmates in correctional facilities;

**Supplemental Allocation.** The Supplemental Allocation is based on the number of low-income students enrolled, as determined by the number of Pell Grant recipients, College Promise Grant recipients, and AB540 students; and



**Student Success Allocation.** The Student Success Allocation is based on the counts of successful outcomes in eight measures: 1) the number of Associate Degrees for Transfer (ADTs) granted, 2) the number of associate degrees granted (excluding ADTs), 3) the number of baccalaureate degrees granted, 4) the number of credit certificates (16 units or more) granted, 5) the number of students who complete transfer-level mathematics and English courses within the first academic year of enrollment, 6) the number of students who transfer to a four-year university, 7) the number of students who complete nine or more Career Technical Education units, and 8) the number of students who attain a regional living wage. Furthermore, through the Student Success Allocation, a district receives additional funds for the same eight outcomes attained by students who received Pell Grants and College Promise Grants.

Additional legislative efforts that augment and support the mandates noted above include: AB19 (College Promise), AB705 (Assessment Protocol Reform), SB1440 (Associate Degrees for Transfer) and the Strong Workforce Program.

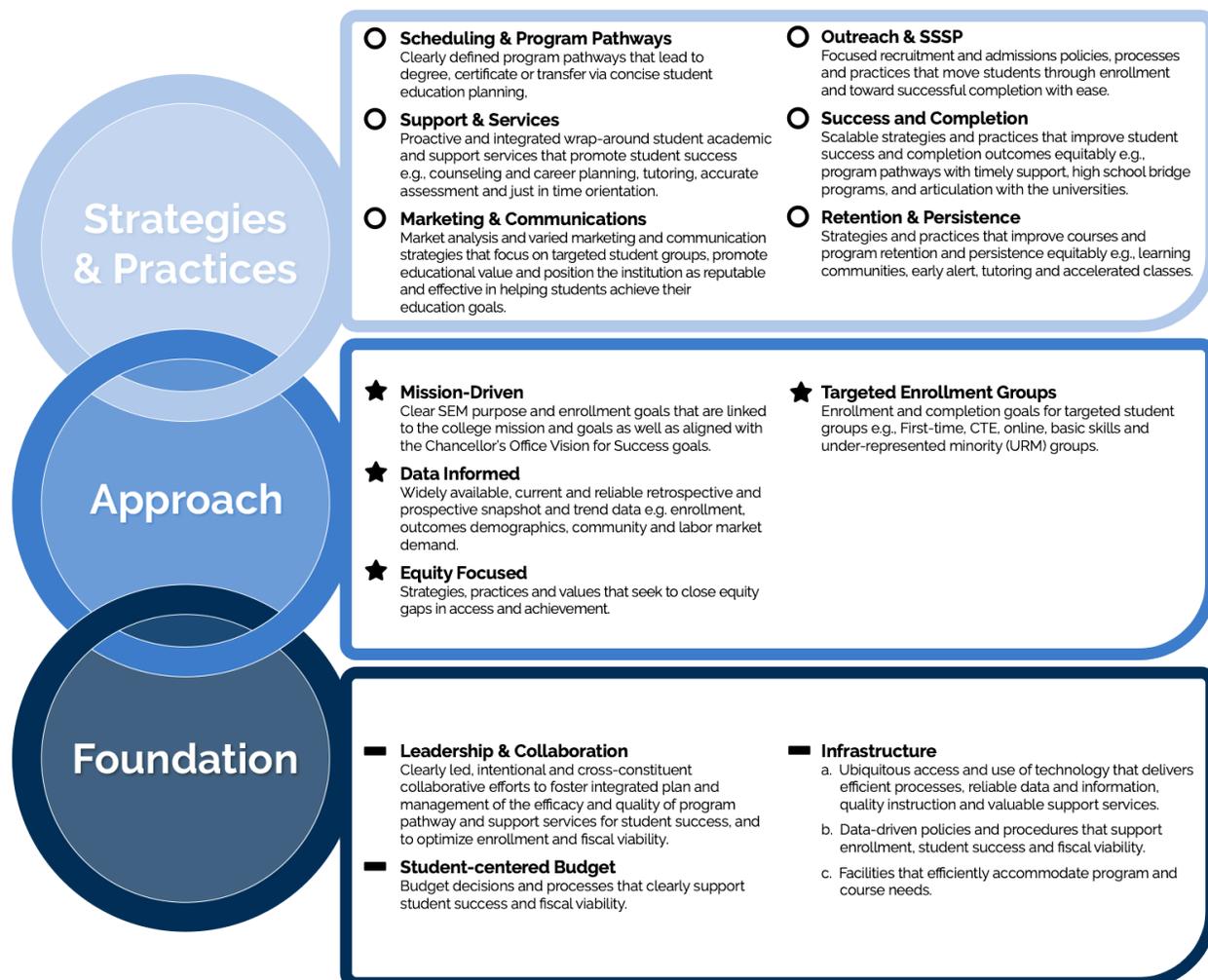
**Reframing SEM.** With the establishment of the Vision for Success, Guided Pathways, the Student Centered Funding Formula and other supporting initiatives, the SEM Project has continued to update and develop important tools, resources, and services that clearly align with these major statewide initiatives and legislation. The SEM Project continues to support college and district SEM efforts in order to help build and sustain healthy and dynamic community college environments. The strategies and practices for SEM are generally most responsive in a system that is open, dynamic, and responsive to its environment: accepting continuous input, analyzing this input in a timely manner, adjusting as needed in order to achieve organizational goals, and transmitting necessary information back out to the environment. To continue being a vital strategy for student success, enrollment optimization, and fiscal viability, SEM efforts must evolve alongside crucial changes that occur in community colleges.

**The SEM Organizing Framework.** The SEM Organizing Framework depicted in Diagram 1 was originally designed in 2016 to guide the development of the tools, resources and services for the SEM Project. It evolved out of research including an extensive literature review of SEM in higher education and primary research into current SEM practices in the California Community Colleges. It was revised in 2019 to more closely align with recent statewide initiatives and legislation (e.g., VFS, GP and SCCF), which in turn helped to guide the revisions of the SEM Project tools, resources and services. As the California Community Colleges work to implement these initiatives and legislation, the SEM Project continues to support these efforts through the variety of resources, tools, and services.

The SEM Organizing Framework exemplifies a holistic approach to SEM, and represents conditions for excellence in SEM. It contains three core dimensions: Foundation, Approach and Strategies. Each dimension contains multiple components of SEM that together define the essential elements of SEM.



Diagram 1. SEM Organizing Framework



**Strategic Enrollment Management (SEM) Operational Definition.** The SEM Purpose Statement was created by the SEM Core Project Team in conjunction with the SEM Advisory Committee. It reflects the same values, principles, and approach found in the Vision for Success (VFS) and its implementation framework, Guided Pathways (GP). Ultimately, the overarching purpose of SEM, VFS, and GP is to increase program completion, transfer, and gainful employment, and to close equity gaps in access and achievement. In addition, SEM, VFS, and GP use a holistic, integrative and collaborative approach for developing and implementing related strategies and practices. SEM also includes a focus on optimizing enrollment and maintaining fiscal viability, both of which are conditions needed in order to fully support the VFS goals, GP implementation, and align with the Student Centered Funding Formula (SCFF).



**SEM Purpose Statement.** As open-entry institutions, California community colleges serve a diverse student body with wide-ranging educational goals. We must regularly adapt our programs and services to meet the changing needs of our students, and to facilitate the achievement of their educational goals. At the same time, we must maintain our fiscal viability to ensure that we can support our communities now and into the future.

SEM is a holistic concept and process which enables the fulfillment of an institution's mission and its students' educational goals<sup>1</sup>. SEM directly supports the Community Colleges Chancellor's Office Vision for Success and related goals. As it focuses on all aspects of the student experience, it coincides with the four pillars of Guided Pathways: 1) Clarify the Path, 2) Enter the Path, 3) Stay on the Path, and 4) Ensure Learning. Moreover, with its attention to financial stewardship in service of students, SEM supports colleges by ensuring adequate resources to improve equitable access and student outcomes through the Student Focused Funding Formula.

The purpose of SEM is to:

- Establish comprehensive student enrollment goals that are aligned with the college's mission, and core plans;
- Promote student success by improving access, engagement, persistence, and completion of program pathways;
- Ensure fiscal stability and viability by optimizing enrollments and integrating SEM into the college financial planning, budgeting, and allocation processes;
- Offer quality and relevant programs with clear educational pathways, course offerings, and appropriate student support;
- Implement strategies that lead to equitable access and outcomes;
- Create a data-rich environment to inform decisions and evaluate strategies;
- Design and implement communications and marketing with internal and external stakeholders to increase understanding of SEM and to meet SEM goals; and,
- Increase collaboration among departments across the campus to support the enrollment management program.

<sup>1</sup> Adapted from: Bontrager, B., and K. Pollock. 2009. *Strategic enrollment management at community colleges. Applying SEM at the Community College*. Washington, DC: American Association of Collegiate Registrars and Admissions Officers.



# Background

The core mission of the community college system of California is serving students seeking to reach educational goals. On the financial side, students are districts' main source of funding. **The total measurable hours of contact by the student forms the primary metric used by the state to provide the dollars necessary to operate California's community colleges.** Very simply put, colleges report the number of contact hours of students' attendance and the state compensates each college based on their reported hours of attendance, along with other metrics that are used in the funding formula. The metric employed in the reporting of attendance is called FTES or Full-Time Equivalent Students.

As reflected in the SEM Purpose Statement, college districts ensure fiscal stability and viability by optimizing enrollments and integrating SEM into their college financial planning, budgeting, and allocation processes. From a budget perspective, districts annually identify a target FTES they seek to achieve to optimize their revenue that is within the confined framework of the state's funding model. They also identify the resources needed to generate the target FTES. It takes many resources to generate FTES; however, one significant resource is the faculty hours providing instruction in the classroom. Called faculty contact hours, the hours are often translated to a percentage of a full-time load called Full-Time Equivalent Faculty or FTEF.

Colleges offer course schedules to meet student needs and generate FTES. Colleges must ensure both the academic integrity of their course offerings and optimize the allocation of the resources needed. Colleges use measures of efficiency to track and monitor how resources are optimized to produce FTES. Historically, the metric Weekly Student Contact Hours to Full-Time Equivalent Faculty or WSCH/FTEF has been used. However, the more direct measure of Full-Time Equivalent Students to Full-Time Equivalent Faculty or FTES/FTEF is becoming more common. Maintaining high efficiency in classroom utilization is another approach and allows a college to monitor its potential FTES.

Monitoring and evaluating the impact of the schedule on student completion and success is important. Monitoring and evaluating enrollments, student interest and demand, and efficiency as it relates to helping the college maintain its fiscal viability is important too. Respondents to a system-wide survey of California Community Colleges, completed in 2017, revealed an interest in resources describing how FTES, FTEF, efficiency, and other scheduling metrics are calculated and used in SEM.

## Description

This guide includes a brief overview describing Full-Time Equivalent Students (FTES), Full-Time Equivalent Faculty (FTEF) and associated efficiency metrics considered by colleges as part of budgeting and scheduling. The guide covers how these metrics are calculated and how they inform a college's strategic and operational enrollment management practices.

*NOTE: As mentioned, districts and colleges calculate and utilize efficiency ratios such as WSCH/FTEF or FTES/FTEF to inform the budgeting and scheduling process. Traditionally, within the California Community Colleges system, these ratios have often been referred to as "productivity" ratios and the terms efficiency and productivity used interchangeably. In this guide, these ratios are referred to as measures of efficiency.*

## Impact

While this guide focuses on the nuts and bolts of understanding and calculating FTES, FTEF, and efficiency metrics, it is important to place these metrics in the context of a college's budget and scheduling processes.

Through 2017-18 California Community Colleges received most of their revenue based on the number of hours of instruction provided to students. The new funding formula that went into effect in 2018-19 distributes revenue on the basis of a number of additional measures beyond hours of instruction. Regardless, districts will receive a significant percentage of their funding based on student enrollment, so understanding FTES remains important when considering SEM.

A district's most significant expense is in human resources (salaries and benefits). To ensure it maintains its fiscal viability, districts must earn apportionment dollars in amounts that exceed their expenditures. As part of the budgeting process, districts identify their expected revenue and project their expenses. It is in the interest of districts to provide high quality education and services in the most efficient way possible. Understanding how FTES, FTEF, and other scheduling metrics are generated, calculated, and utilized in the budgeting and scheduling process is critical to SEM.

In creating a schedule of classes each term, college schedulers experience numerous challenges and constraints. Accurately forecasting student demand for specific courses in future terms is a major determinant of effective scheduling. If more sections of a course are scheduled than students need, enrollment per section is typically lower than the potential enrollment set by the maximum section capacity and/or the capacity of the classroom, which creates inefficiency.



If too few sections of a course are scheduled relative to student need, students will be turned away from enrolling in sections that are filled to capacity. This inefficiency results from under-scheduling. In terms of budgeting the faculty costs per section, budget allocations to departments (or divisions) should flow to the course sections that are filling at or very near their capacity so that over allocation of budget dollars to under-enrolled sections is minimized.

Effective budgeting and scheduling is foundational to SEM. Effective budgeting ensures a college remains fiscally viable and effective scheduling meets student course section needs efficiently so that a student's time to completion of their educational goal (usually a course, a certificate, or a degree) is minimized.



## Strategies & Practices

This section provides an overview of attendance accounting and how to calculate:

- FTES
- FTEF
- WSCH/FTEF and FTES/FTEF

Funding for California Community Colleges is based substantially on the number of hours that students attend classes.

- The length of the traditional academic year is 35 weeks. The year is divided into two 17.5-week semesters or three 11.67-week quarters.
- A full-time student is defined (for attendance accounting purposes) to be one who attends classes 15 hours per week, or 525 student contact hours per year.
- Each reportable hour of classroom or laboratory instruction must be supervised by a qualified faculty member who is responsible for organizing the curriculum, evaluating the students, and certifying attendance.

Several metrics are used to keep track of students: (a) student headcount is the number of individuals enrolled in a college, irrespective of the number of hours attended, and (b) **student contact hours** is the number of hours attended, which is the basis for the substantial portion of college funding derived from student attendance.

### ACADEMIC CALENDARS

An **academic year** is defined in Education Code to be 175 days in length (35 weeks, not counting holidays or breaks). Two semesters of equal length will have semesters ranging from 16 to 17.5 weeks depending on the type of academic calendar chosen. Holidays are not included as academic calendar days.

Many colleges operate with a **traditional** calendar of 175 days—each semester is 17.5 weeks in length, or each quarter is 11.67 weeks long.

A college may use up to 15 of the 175 days in the academic calendar for noninstructional activities with no loss of FTES if approved by the California Community Colleges Chancellor's Office (CCCCO) to have a **flexible calendar**.

Colleges may opt for semesters of shorter length (less than 17.5 weeks) by applying to the CCCCCO for approval of a **compressed calendar**, in which the number of weeks is reduced and the weekly meeting times of classes expanded in a way that no instructional time is lost. *In no event may a semester be less than 16 weeks in length.*



For 2017-18, 54 colleges (47% of all colleges) chose traditional or flexible calendars with term lengths of 17.5 weeks (semesters) or 11.67 weeks (quarters). Further, 61 colleges (53%) chose to compress their calendars into term lengths ranging from 16 to 17 weeks.

Whatever calendar type is chosen, 175 calendar days in two semesters or three quarters must be identified and reported to the Chancellor's Office each year for approval. Saturdays and/or Sundays that have at least 3 hours of scheduled classes may be counted as instructional days and included in the 175-day count for the academic year.

In compressed calendars, there is generally no loss of total instructional hours because class meeting lengths are expanded across the shorter term. The compressed calendar can provide an opportunity to offer a winter intersession prior to the spring semester, or two summer sessions instead of one. For flexible calendars, days in lieu of instruction and activities that have replaced instruction must be identified and faculty attendance reported to the Chancellor's Office.

Table 1, below, shows how compressing an academic calendar affects weekly hours of full-term courses. The benchmark to keep in mind is the 3-hour class in a traditional 17.5-week semester: total meeting time in 3-unit, 3-hour classes is 52.5 hours (3 hours x 17.5 weeks = 52.5 hours). Notice that as the semester length is shortened, the weekly contact hours are increased. Also, as a result of the calculation formulas, the total student contact hours increases from 52.5 total student contact hours in a traditional 17.5-week semester to more than 54 hours.

Table 1. How Calendar Compression Affects Weekly Contact Hours

Semester Length	Weekly Contact Hours in a 3-hour class	Total Student Contact Hours (TSCH)
17.5 weeks (not compressed)	3.0	52.5
17 weeks	3.2	54.4
16.5 weeks	3.3	54.5
16 weeks	3.4	54.4

## CALCULATING FTES

### WHAT IS FTES?

A "full-time equivalent student" is an enrolled student who attends 15 hours each week during the semester (or a group of students who, together, attend 15 hours each week). In an academic year, this hypothetical full-time student generates 525 student contact hours. Even though not all students are full-time and not all classes are scheduled for 17.5 weeks, this definition provides a



unit of measure applicable to all classes and calendar types (e.g., traditional length, flexible, and compressed). This definition of full-time is used for funding calculations only, not for classifying the status of actual students for financial aid or other purposes.

The student attendance accounting framework in place since 1988 uses a full-time equivalency unit of measure called **FTES (Full-Time Equivalent Student)** that is calculated by dividing **total student contact hours (TSCH)** by 525, providing a standardized “workload measure” basis for college funding. The basic formula for FTES calculation is

$$\text{FTES} = \text{Total Student Contact Hours (TSCH)} \div 525$$

To summarize, ONE FTES represents:

- 1 student (or a group of students)
- Attending 15 hours per week
- For two semesters of 17.5 weeks (3 quarters of 11.67 weeks) for
- A TOTAL of 525 contact hours

When districts report FTES to the state, they report it by the following categories, as funding varies based on student residency and the credit/noncredit status of courses:

- Students who are California residents
- Students who are not California residents (nonresidents)
- Students enrolled in credit courses
- Students enrolled in noncredit courses (with or without enhanced funding)

#### CALCULATING FTES FOR WEEKLY CENSUS, DAILY CENSUS, AND POSITIVE ATTENDANCE COURSES

To calculate the FTES for a particular course section, one needs to know the following:

- the number of students enrolled in the course section,
- the number of contact hours scheduled for a particular section based on its meeting dates and times,
- the attendance accounting procedure for the section, and
- the Term Length Multiplier (TLM) or Course Length Multiplier (CLM).

The *number of contact hours* scheduled for a particular section of a course is based on its meeting pattern of days and times. In creating a class schedule, it is important to distinguish between clock hours (60 minutes) and class hours (50 minutes). For each clock hour a course is scheduled, except for the last clock hour in a multiple hour class, class length may be no more or less than 50 minutes. This regulation allows for 10 minutes “passing time” during which students and faculty may travel to their next class or activity. In classes scheduled for



a time period longer than one hour (for example, 90 minutes, 2 hours, and so forth) several prescriptive rules apply. The number of weekly contact hours of a course section depends on the actual time schedule of the course—the number of class meetings each week and the length of each session. *For simplicity, sections of 3 contact hours per week in a semester-long class will be used as the standard course structure discussed here.*

Scheduling examples are shown in Table 2 below.

Table 2. Scheduling Examples

Clock Hours (including Passing Times)	Contact Hours (Actual Times)	Class Hours	Days	Total Student Contact Hours
8:00-9:00 a.m.	8:00-8:50 a.m.	1.0	MWF	3.0
8:00-9:30 a.m.	8:00-9:15 a.m.	1.5	MW	3.0
8:00-11:00 a.m.	8:00-10:50 a.m.	3.0	F	3.0

There are five distinct student attendance accounting procedures that are used to determine FTES. Each scheduled course section must follow an appropriate procedure. The actual meeting schedule of the course section determines the procedure that can be followed:

1. **Weekly Census Procedure:** for full-term regularly scheduled classes; uses **weekly student contact hours (WSCH)** as the basis for calculating total student contact hours.
2. **Daily Census Procedure:** for regularly scheduled classes that are less than full-term or scheduled in a summer or winter intersession. This method uses **daily student contact hours (DSCH)** as the basis for calculating total student contact hours.
3. **Actual Hours of Attendance Procedure:** for course sections that are irregularly scheduled (e.g., class meetings with different numbers of hours or on varying days of the week) and for all noncredit classes. This method, most often called **Positive Attendance**, requires that the actual hours the student attends be tracked and reported.
4. **Alternative Attendance Accounting Procedure:** for independent study (IS) course sections, work experience (WE) courses, and most distance education courses. The reporting for IS, WE, and lecture-based distance education classes is based on course units rather than contact hours.
5. **Noncredit Independent Study and Distance Education Procedure:** a procedure involving two census dates that is rarely used since few colleges offer noncredit independent study or distance education classes.



When a section of a course is created, the section is coded to indicate the attendance accounting procedure to be followed. Typically, colleges schedule the vast majority of sections using the Weekly Census procedure. These sections are full-term, with student attendance measured on a single census date in the term. The **Census Day** for Weekly Census classes is Monday of the week nearest to one-fifth (20%) point of the term, or Tuesday of that week if the Monday is a holiday. For example, in a 17.5-week semester, the Census Day occurs in the third week of the term because one-fifth of the term is 3.5 weeks ( $17.5 \times 0.20 = 3.5$ ). Daily Census course sections use an individual census date to calculate total student contact hours. It is the date of the class meeting nearest 20% of the total number of class meetings.

The Term Length Multiplier (*TLM*) is used when calculating FTES for Weekly Census classes. The number of weeks included in a semester or quarter is based on the academic calendar. For colleges on a “traditional” length calendar, the TLM is 17.5. For colleges on a “compressed” calendar the TLM is less than 17.5 but cannot be less than 16. As the length of a term compresses (shortens), each class meeting expands by enough minutes so that total student contact hours for the term are approximately the same as in a traditional 17.5-week calendar. When colleges adopt a compressed calendar, their TLM is determined by the Chancellor’s Office.

#### SAMPLE FTES CALCULATIONS: WEEKLY CENSUS CLASSES

To summarize, Weekly Census classes

- are offered during primary terms\* only,
- run the length of the primary term,
- are scheduled for the same number of days each week, and
- are scheduled for the same number of hours each week (including TBA hours).

\*Primary terms are fall/spring semesters or fall/winter/spring quarters.

##### EXAMPLE #1:

College A operates on the basis of a “traditional calendar” where each semester is 17.5 weeks in length. A class meets each Wednesday of the term from 7:00-9:50 and has 35 students enrolled on Census Day.

##### TO CALCULATE FTES:

Determine Total Weekly Student Contact Hours (WSCH) by multiplying the number of students times the number of contact hours the class meets each week.

$$\text{WSCH} = 35 * 3 = 105$$

Multiply WSCH by the Term Length Multiplier (17.5) and divide by 525 (total annual hours of 1 FTES).

$$\text{FTES} = (\text{WSCH} * \text{TLM}) / 525$$

$$\text{FTES} = (105 * 17.5) / 525$$

$$\text{FTES} = 1,837.5 / 525$$

$$\text{FTES} = 3.5$$

**EXAMPLE #2:**

College B offers classes on a “traditional calendar” where each semester is 17.5 weeks in length. A class meets each Monday and Wednesday of the term from 7:00-8:15 and has 35 enrollments. The class is scheduled for 1 hour and 15 minutes each day, without a break.

**TO CALCULATE FTES:**

Determine Total Weekly Student Contact Hours (WSCH) by multiplying the number of contact hours the class meets each week by the number of students enrolled in the class.

$$\text{Weekly Student Contact Hours} = (1.5 \text{ hrs Mon}) + (1.5 \text{ hrs Wed}) = 3 \text{ hrs}$$

$$\text{WSCH} = 35 * 3 = 105$$

Multiply WSCH by the Term Length Multiplier (17.5) and divide by 525 (total annual hours of 1 FTES).

$$\text{FTES} = (\text{WSCH} * \text{TLM}) / 525$$

$$\text{FTES} = (105 * 17.5) / 525$$

$$\text{FTES} = 1,837.5 / 525$$

$$\text{FTES} = 3.5$$

**EXAMPLE #3:**

College C offers classes on a “compressed” calendar with a Term Length Multiplier of 16.7. A class meets every Tuesday during the fall semester from 1:00 to 4:10 pm and has 33 students actively enrolled at census.

**TO CALCULATE FTES:**

The number of contact hours for each class meeting is 3.4, calculated as follows:

1:00 – 1:50 1.0 contact hour, followed by a 10-minute break

2:00 – 2:50 1.0 contact hour, followed by a 10-minute break

3:00 – 3:50 1.0 contact hour, with no break following

3:51 – 4:10 0.4 contact hours, calculated by dividing the partial class hour of 20 minutes by 50 (the number of minutes per contact hour)

Since the class meets once per week, the WCH (Weekly Contact Hours) = 3.4

$$\text{WSCH (Weekly Student Contact Hours)} = \text{WCH} * 33 = 3.4 * 33 = 112.2$$

$$\text{FTES} = \text{Total Student Contact Hours} / 525$$

$$\text{FTES} = (\text{WSCH} * \text{TLM}) / 525 = (112.2 * 16.7) / 525 = 3.57$$



## SAMPLE FTES CALCULATION DAILY CENSUS CLASSES

To summarize, Daily Census classes:

- meet five or more days,
- meet the same number of hours on each scheduled day,
- and are NOT coterminous with a primary term.

Examples of Daily Census classes include regularly scheduled classes in a summer or winter intersession, or fast-track shorter-length courses offered during a semester or quarter.

The *Course Length Multiplier (CLM)* is the number of days the course is scheduled to meet.

**EXAMPLE #4:** College D offers 8-week fast-track classes. One of the fast-track classes meets on Mondays and Wednesdays from 12:00-2:50 p.m. The class has 28 students enrolled as of the census date.

**TO CALCULATE FTES:**

Determine Daily Contact Hours

$$\text{DCH} = 3 \text{ hours (12:00-2:50)}$$

Determine the Daily Student Contact Hours (DSCH)

$$\text{DSCH} = \text{Number of students at Census} * \text{Daily Contact Hours}$$

$$28 * 3 = 84 \text{ DSCH}$$

Determine number of meeting days (this is the Course Length Multiplier or CLM). Note - If a holiday is scheduled on one of the class meeting dates, the CLM does NOT include that day as a class meeting day.

$$\text{No. of Meeting Days (CLM)} = (8 * 2) = 16$$

Calculate FTES by multiplying the Daily Student Contact Hours (DSCH) by the CLM and divide by 525.

$$\text{FTES} = (84 * 16) / 525 = 2.56 \text{ FTES}$$

## SAMPLE FTES CALCULATION POSITIVE ATTENDANCE CLASSES

Positive Attendance classes

- meet fewer than five days and/or
- are irregularly scheduled with respect to the number of days per week or number of hours on scheduled days, and/or
- are noncredit courses.



FTES for these classes is based on the actual count of enrolled students present at each class meeting.

**EXAMPLE #5:** College E offers an eight-hour course over two Saturdays (four hours each Saturday). A total of 24 students enroll in the class. On the first day, all 24 students attend. On the second day only 20 students attend.

**TO CALCULATE FTES:**

Determine Total Student Contact Hours

$$\text{Total Student Contact Hours} = (24 * 4) + (20 * 4) = 176$$

Divide Total Student Contact Hours by 525

$$176 / 525 = 0.33 \text{ FTES}$$

### SAMPLE FTES CALCULATIONS: ALTERNATIVE ATTENDANCE ACCOUNTING METHOD CLASSES

Unlike classes that use weekly, daily, and positive attendance accounting where students are physically present in a lecture classroom or laboratory, classes where instruction occurs outside the traditional classroom setting use the Alternative Attendance Accounting method. Supervision and evaluation of students occurs on job sites for work experience, online for distance education, and in independent study settings where the student is not directly supervised for each hour by a qualified faculty member. Attendance accounting is based on course units for lecture and work experience classes with additional hours for qualifying laboratory courses. The attendance for Alternative Attendance method courses that are full-term during primary terms is reported separately from that of courses that are not full-term, but FTES for all Alternative Attendance method courses is calculated by the same formula.

Irrespective of the length (begin date to end date) of an Alternative Attendance method class, the college's official TLM is used in calculating the FTES of the class. The census date for the class is the day at the 20% point of the duration of the class. The calculation is similar to that for Weekly Census classes, except that the Weekly Contact Hours in the formula are replaced by the number of Units of Credit associated with the course. The underlying assumption is that the same amount of academic work is done for a course with a given number of units whether it is done over a short period or over a full semester or quarter.

**EXAMPLE #6:**

College F, with a traditional calendar with semesters of 17.5 weeks, offers a distance education version of a 3-unit lecture course that, when offered on campus in a classroom, meets for 3 contact hours per week. 30 students are actively enrolled as of the Census Date of the class. This course section is coterminous with a primary term. Therefore, the Census Date of this class is the same as that for Weekly Census classes.

**TO CALCULATE FTES:**

Multiply the number of students enrolled at census by the number of units associated with the course to get the equivalent of the Weekly Student Contact Hours (WSCH) of the class.

$$\text{WSCH (equivalent)} = 30 * 3 = 90$$

Then multiply that product by the Term Length Multiplier (TLM) to calculate the Total Contact Hours (TCH) of the class.

$$\text{TCH} = 90 * 17.5 = 1,575$$

Finally, divide by 525 to get the FTES.

$$\text{WSCH (equivalent)} = 30 * 3 = 90$$

$$\text{TCH} = 90 * 17.5 = 1,575$$

$$\text{FTES} = 1,575 / 525 = 3$$

**EXAMPLE #7:**

College G, with a compressed calendar and a Term Length Multiplier (TLM) of 16.4, offers a distance education version of a 3-unit lecture course that, when offered on campus in a classroom, meets for one hour and 25 minutes twice per week over a full semester. That on-campus section might be scheduled from 8:00 to 9:25 on Monday and Wednesday, for a total of  $2 * 1.7 = 3.4$  Weekly Contact Hours.

This distance education version of the course is offered during an eight-week summer intersession. Assume that 30 students are actively enrolled as of the Census Date (20% of the way through the eight-week duration of the class).

**TO CALCULATE FTES:**

The fact that this is an accelerated class has no bearing on the FTES calculation since, as pointed out above, the assumption is that the same amount of academic work is done for a 3-unit course irrespective of the length (duration) of the class.

Multiply the number of students actively enrolled at census by the number of units associated with the course to get the equivalent of the Weekly Students Contact Hours (WSCH) of the class. Then multiply that product by the college's Term Length Multiplier (TLM) to calculate the Total Contact Hours (TCH) of the class, and divide by 525 to get the FTES.

$$\text{WSCH (equivalent)} = 30 * 3 = 90$$

$$\text{TCH} = 90 * 16.4 = 1,476$$

$$\text{FTES} = 1,476 / 525 = 2.81$$



## Guiding Questions For Discussion

1. Where can you find reports showing FTES for your college? Does your college publish daily enrollment reports showing FTES generated?
2. What type of academic calendar does your college have?
3. Where can one find more information on how to calculate FTES?
4. While it is not expected that everyone is an expert in calculating FTES, why is understanding FTES important when considering SEM?

### CALCULATING FTEF, WSCH/FTEF, AND FTEF/FTES

With the exception of community funded (formerly called Basic Aid) districts, FTES constitutes a large part of the basis of Unrestricted General Fund revenue for districts, who apply resources to generate this revenue. Faculty Weekly Contact Hours (FWCH) make up the lion's share of a district's costs in offering course sections that generate revenues (FTES). To maintain sustainable operations, college revenues must exceed costs of instruction.

On a semester basis for a college with a traditional (not compressed) calendar, a faculty member's full-time load is generally 15 lecture contact hours per week. A three-hour weekly course is 3/15 or 20% of a full-time load. Just as FTES does not equal student headcount, the total FTEF assigned to teach courses does not equal faculty headcount.

For example:

- Instructor 1 teaches 8 hours per week
- Instructor 2 teaches 9 hours per week
- Instructor 3 teaches 10 hours per week
- Instructor 4 teaches 6 hours per week

**Total FTEF across the *four* instructors is 33/15 or 2.2 FTEF.**

### WSCH/FTEF AND FTES/FTEF EFFICIENCY METRICS

Districts and colleges calculate efficiency ratios to inform the budgeting and scheduling processes. Traditionally, within the California Community College system these ratios have been referred to as productivity ratios and the terms productivity and efficiency have been used interchangeably. In this guide, these ratios are referred to as measures of efficiency.



The traditional efficiency ratios used by colleges include calculating the number of Weekly Student Contact Hours generated by one Full-time Equivalent Faculty (WSCH/FTEF) or the number of Full-time Equivalent Students generated by one Full-time Equivalent Faculty (FTES/FTEF).

## CALCULATING WSCH/FTEF

Calculating a WSCH/FTEF ratio for weekly census courses is straightforward. WSCH and FTES are summed across the course sections and the ratio calculated. Not all classes offered by a college follow the Weekly Census attendance model (e.g., Daily Census and Positive Attendance classes). Historically, most classes were Weekly Census classes so colleges may not have included the few specially scheduled courses in their WSCH/FTEF ratios. However, over time as many more classes were scheduled that did not fit the Weekly Census attendance accounting requirements, colleges began to include these classes in their WSCH/FTEF ratio by calculating a WSCH equivalent for them.

**EXAMPLE #1:** During a Fall term, College A offered three Weekly Census classes within a specific discipline. FTEF assigned to each class was .20. The college offers courses via a traditional calendar (17.5 weeks). Given the potential WSCH generated for each class below, calculate the WSCH/FTEF.

**GIVEN:** Course 1 = 3.2 Weekly Contact Hours with 32 enrollments for a Total WSCH  
 $(32 * 3.2) = 102.4$

Course 2 = 3.0 Weekly Contact Hours with 35 enrollments for a Total WSCH  
 $(35 * 3) = 105$

Course 3 = 3.0 Weekly Contact Hours with 28 enrollments for a Total WSCH  
 $(32 * 3) = 96$

**To Calculate WSCH/FTEF:** Sum WSCH  
 $WSCH = 102.4 + 105 + 96 = 303.4$

Sum FTEF  
 $FTEF = .20 * 3 = .60$

Divide WSCH/FTEF  
 $WSCH/FTEF = 303.4 / .60 = 505.7$



**EXAMPLE #2:** College B offered three eight-week classes which produced a total 5,137 Daily Student Contact Hours (DSCH). FTEF assigned to each class was .20. The college has a traditional calendar (17.5 weeks). Calculate the WSCH/FTEF.

**To calculate WSCH/FTEF ratio:**

Convert DSCH to WSCH by dividing DSCH by the TLM

$$\text{WSCH} = 5137 / 17.5 = 293.57$$

Sum the total FTEF assigned to the classes

$$\text{FTEF} = .20 * 3 = .60$$

Calculate the WSCH/FTEF ratio

$$\text{WSCH/FTEF} = 293.57 / .60 = 489.3$$

**EXAMPLE #3:** College C offered a Positive Attendance class that produced 1,774 total hours (PAH) across all student enrollments. The college has a compressed calendar with a TLM of 16.8. FTEF assigned to the class was .33. Calculate the WSCH/FTEF ratio.

**To calculate WSCH/FTEF ratio:**

Convert PAH to WSCH by dividing PAH by the TLM

$$\text{WSCH} = 1,774 / 16.8 = 105.6$$

Calculate WSCH/FTEF

$$\text{WSCH/FTEF} = 105.6 / .33 = 320.0$$



## CALCULATING FTES/FTEF

Over time, many districts have transitioned to using FTES/FTEF as the preferred measure of efficiency. The calculation is straightforward and does not require conversion to WSCH. Also, adjustments to overall target ratios based on academic calendars (e.g., traditional, flex, compressed) are not needed. To calculate an overall FTES/FTEF ratio, simply sum the total FTES across the college and divide by the total allocated FTEF.

## TARGET WSCH/FTEF AND FTES/FTEF RATIOS

WSCH/FTEF and FTES/FTEF are effective metrics when looking at efficiency over time. Historically, colleges have targeted an *overall* standard efficiency metric based on:

- An average of 35 students,
- enrolled in a standard 3-hour course via a traditional length calendar,
- with a standard .20 FTEF instructional load.

Given this standard, *Target FTES/FTEF* ratios are typically 17.5 per semester or annualized to 35 for the year.

Determining Target *WSCH/FTEF* ratios is not quite as straightforward as adjustments must be made for the TLM.

For colleges on traditional calendars, the overall target *WSCH/FTEF* *historically* is:

### **WSCH ÷ FTEF = 525 WSCH**

- $WSCH = 35 \text{ students} * 3 \text{ hours} = 105$
- $FTEF = .20$
- $105 / .20 = 525$

For compressed calendars, the corresponding target is either 560 or 595 depending on the amount of compression the schedule has. If a schedule is compressed so that the TLM (term length multiplier) is between 16.8 and 17.0, then 560 is typically used.

### **WSCH ÷ FTEF = 560 WSCH**

If the TLM is between 16.0 to 16.7, then 590 is typically used.

### **WSCH ÷ FTEF = 590 WSCH**



When reference is made to the desired WSCH/FTEF ratio being equal to 525 statewide, the adjustment for compressed calendars has not yet been made. It is important that the conversion from 525 WSCH/FTEF be made for compressed calendars as appropriate.

*NOTE: The “525” WSCH/FTEF target is based on historical standards. Not all colleges will target a standard of 17.5/35 FTES/FTEF or 525 WSCH/FTEF. The specific target for a college depends on such factors as overall expenditures, consideration of the mix of classroom capacities, courses in the schedule, enrollment targets, and student demand. Furthermore, not every class is expected to generate the same efficiency. For example, classes with heavy writing requirements or with enrollment maximums set by accreditation standards, and performance/skills labs, will enroll fewer than the targeted enrollment count. These classes are typically balanced out by lecture classes with larger class maximums. Colleges seek to balance their course offerings to ensure they remain fiscally viable.*



## Guiding Questions For Discussion

1. How does the mix or balance of course offerings affect FTES/FTEF or WSCH/FTEF?
2. Does your district and/or college set an overall target FTES/FTEF or WSCH/FTEF?
3. Does your district and/or college set different FTES/FTEF or WSCH/FTEF targets for the college, divisions, departments, and disciplines? If so, why? If not, why not?
4. Is your district and/or college achieving its target FTES/FTEF or WSCH/FTEF? If not, why do you think it is not meeting its target? Where can you find reports showing FTES for your college? Does your college publish daily enrollment reports showing potential FTES generated?
5. How do Guided Pathways and the Student Success Funding Formula affect how your college thinks about FTES/FTEF? What impact do Guided Pathways and the Student Success Funding Formula have on the development and management of the schedule?



# HOW COLLEGES USE FTES, FTEF, AND EFFICIENCY METRICS

## SETTING TARGET FTES AND ALLOCATING FTEF

Districts need to establish FTES targets for their colleges to remain financially viable. FTES is the primary metric used to determine a district's general fund revenue. In order to establish these targets, the district's chancellor or superintendent/president, often with the executive team, discusses the state budget picture for the coming year (e.g., possibility of new growth monies available or expectations for budget cuts) and sets an overall FTES target to be achieved. The district's master plan and SEM plan also inform these discussions. In addition, the board of trustees is typically briefed on the district's target.

In multi-college districts once the overall FTES target is determined, an agreed upon formula for splitting FTES across the colleges may be used to assign targets to each college. Once college targets are set, the chief instructional officer generally estimates how much FTEF (or faculty contact hours) is needed to achieve those targets and reviews cost figures from the prior term in an effort to estimate the additional monies required to achieve growth targets. The chief business officer works to ensure that the chief instructional officer has sufficient resources to achieve the targets.

Any growth allowed by the state enables the district to earn additional revenue. As an example, consider the following information for a single college district. The district has a base FTES allocation of 12,000, generating approximately \$60 million dollars (\$5,005 per FTES). The state has allocated the district a 1.5% growth rate, meaning the district will be paid for up to a 1.5% increase or 180 FTES (e.g., 12,180 FTES base allocation). This could potentially add an additional \$900,900 ( $180 \times \$5,005$ ) in revenue to the district. In order to ensure it earns the extra 180 FTES, the district may establish its FTES target slightly higher than 12,180. This will also place the district in a good position to capture "additional" growth in the event the 1.5% growth rate increases at a future point (e.g., 12,400 FTES). Districts may set higher FTES targets beyond achieving growth to maintain or attain a specific college size (small, medium, or large) as college size is used to help determine a "base" funding allocation.

Once a district identifies its target FTES, resources needed to generate the FTES are considered. One metric that helps districts determine the costs needed to achieve the targeted FTES is number of faculty contact hours, which is translated to a percentage of FTEF. Colleges must build a schedule with the capacity to generate the FTES, and they must allocate the appropriate number of instructional hours to the schedule. How districts manage FTEF to achieve FTES targets can be different based upon the type of courses offered and other factors in the schedule such as class size and the mix and balance of courses.

In the *simplified* example below (Table 3), the mix and number of courses and the FTEF needed to generate the target FTES varies between the two districts. Both start with the same base allocation of 12,000 FTES. District B needs an additional 50 FTEF in part-time faculty resources to earn the same amount of FTES. There could be multiple reasons for this, including ineffective scheduling processes, or a number of full-time faculty on reassignment or a different mix of courses of various types.



That extra 50 FTEF costs District B approximately \$175,000 more to accomplish the same goal as District A. This gives District A a possible advantage as they now have \$175,000 to use toward instructional supplies, equipment, or facilities, thus potentially improving the quality of instruction and experience received by District’s A students.

Table 3. Example of Targeted FTES and Allocated FTEF for two Districts.

TARGET FTES / ALLOCATED FTEF	DISTRICT A	DISTRICT B
Target FTES	12,000	12,000
Total FTEF Allocated to Schedule	675	725
- Full-time Faculty FTEF	425	425
- Part-time Faculty FTEF	250	300
FTES/FTEF	17.8	16.6
Cost per Part-time FTEF	\$3,500	\$3,500
Part-time FTEF Total Cost	\$875,000	\$1,050,000

While most colleges identify overall target FTES and allocate resources based on a desired efficiency estimate, some also employ models for establishing FTES targets and FTEF allocations at the division, department, and discipline levels.

**THE ROLE OF FTES/FTEF METRICS AND FACILITIES MANAGEMENT IN SCHEDULING**

Course performance metrics are often calculated and reviewed over time to inform a college’s scheduling decisions. An example of such metrics is shown in the table below for a set of accounting courses offered at College A.

In Table 4, an initial set of descriptive data for the courses is presented. Each course has a course identification number such as ACCTG 101. Review of the table shows three sections of ACCTG 101 course were scheduled and 91 students enrolled at census. These sections were scheduled in rooms with a total capacity of 96 seats. ACCTG 101 met for 3.4 hours per week. The college is on a compressed calendar with a term length multiplier of 16.7 weeks. Actual FTES earned for 91 enrollments is 9.84 FTES. (Recall that  $FTES = (WSCH \times TLM)/525$ ). Had all the rooms filled to capacity, 96 enrollments would have been reported earning 10.38 potential FTES. The three sections of ACCTG 101 generated 309 WSCH. Each ACCTG 101 class offering is comprised of three weekly faculty contact hours, or .20 FTEF, thus .60 FTEF was allocated to teach the three sections.



Table 4. Attributes of Courses and Sections Offered in a Term

Course I.D.	Sections	Enrollment	Total Seats (Room Capacity)	Weekly Contact Hours	Actual FTES	Potential FTES*	WSCH	Total FTEF
ACCTG 101	3	91	96	3.4	9.84	10.38	309	0.60
ACCTG 104	2	55	64	2.3	4.02	4.68	127	0.27
ACCTG 105	1	32	42	4.6	4.68	6.15	147	0.27
ACCTG 107	1	32	42	4.5	4.58	6.01	144	0.27
ACCTG 110	6	132	192	4.5	18.89	27.48	594	1.80
ACCTG 115	2	62	84	2.3	4.54	6.15	143	0.27
ACCTG 201	11	396	458	4.6	57.94	67.02	1,822	2.93
ACCTG 202	6	250	248	4.6	36.58	36.29	1,150	1.60

\*Potential FTES = (Total Seats x Weekly Contact Hours x 16.7)/525, where the TLM = 16.7.

### Using Course Data to Inform Scheduling

Colleges utilize significant data to inform their scheduling process as well as manage the schedule during registration. Examples of data used by colleges are shown in Table 4. Prior to developing a schedule for a future term, colleges will examine the prior performance of the schedule for a similar term. They typically use an array of performance metrics to guide them. Scheduling performance metrics include fill rate, FTES per section, FTES/FTEF, and WSCH/FTEF. To assess performance, each performance metric can be compared to a target value, which serves as the benchmark performance level to reach. Consider the data in Table 5.

Table 5. Course and Section Efficiency

Course I.D.	Actual FTES	Target FTES	Fill Rate	FTES/Section	FTES/FTEF	WSCH/FTEF (Load)	Target FTES/Section	Target WSCH/FTEF (Load)	Target FTES/FTEF
ACCTG 101	9.84	9.86	94.8%	3.28	16.40	516	3.29	517	16.44
ACCTG 104	4.02	4.45	85.9%	2.01	14.90	469	2.22	518	16.47
ACCTG 105	4.68	5.84	76.2%	4.68	17.34	545	5.84	680	21.62
ACCTG 107	4.58	5.71	76.2%	4.58	16.97	533	5.71	665	21.15
ACCTG 110	8.89	26.11	68.8%	3.15	10.50	330	4.35	456	14.51
ACCTG 115	4.54	5.84	73.8%	2.27	16.80	528	2.92	680	21.62
ACCTG 201	57.94	63.67	86.5%	5.27	19.78	622	5.79	683	21.73
ACCTG 202	36.58	34.47	100.8%	6.10	22.86	719	5.75	677	21.55



- **Target FTES** This college expects each section to fill to at least 95% of room capacity. Thus, Target FTES is established by the college and in this example, is 95% of Potential FTES.
- **Fill Rate** is the actual enrollment in a section or summed across sections divided by the potential enrollment (in this case, maximum seat capacity). As with Section Counts and Course Offerings, this metric is typically disaggregated across courses, disciplines, departments, and divisions.
- **FTES per section or yield** is the actual FTES in the sections divided by the number of sections offered. The value actually scheduled is compared to the Target FTES per section so that a performance assessment can be made. Since ACCTG 101 has nearly a 95% fill rate, it has essentially reached its target level of FTES of its offerings for this course.
- **FTES/FTEF** reflects how much FTES each FTEF is generating.
- **WSCH/FTEF** often referred to as Load, uses enrollment and weekly contact hours. These values vary due to calendar compression. Since FTES does not vary with calendar compression, its values form a standardized metric allowing for easy comparison across disciplines.
- **FTES per Section, WSCH/FTEF, and FTES/FTEF** each have college district-determined values based on expectations of near-full utilization of classroom space (seats). When actual values fall short of target values, a conversation is usually started to find out the causes for the mismatches and to find solutions that will reach targets in future terms.

Looking at the data, an assessment is made for each course that determines if the course has been overscheduled, meaning too many sections have been offered relative to student demand, under scheduled, meaning an insufficient number of sections has been offered, or if the number of sections essentially fulfills student demand. For example, ACCTG 101 and 201 have relatively high fill rates. FTES per section for both of these course offerings exceeds Target FTES per section. Using tools that forecast student demand, such as class wait lists or demand studies, the college might consider adding a section of each course.

On the other hand, consider ACCTG 110. It has a 68.8% fill rate, is earning 3.15 FTES per section, and its target FTES per section is 4.35. There are 6 sections being offered. It appears that this course has been overscheduled relative to student demand. There may be reasons for this such as ensuring the course is offered during the day and evening and across locations. However, the college will likely consider reducing the number of offerings in future class schedules.

### **Monitoring Course Data During Registration**

Colleges typically engage in some level of enrollment or schedule management throughout the enrollment period for each term. Schedule management is the process of altering the number of sections to achieve a specified target level of FTES per section. It is important to note that adding and cancelling sections should occur as early as possible during registration.



Monitoring daily each section's fill rate is a common technique. For example, suppose a department has scheduled 12 sections of a 3-hour introductory economics course and each section is capped at 50 students. The enrollment potential is 600 enrollments ( $12 \times 50 = 600$ ). The FTES potential is 5.0 FTES per section or 60 FTES. Historically, the fill rate has averaged 95% for this course, which means that if hit, enrollments will be no fewer than 570 and unfilled seats no more than 30.

In a growth scenario, all or most sections of a course attain 100% fill rates. When this happens, adding a number of sections to match student demand is usually considered to ensure hitting FTES targets. Adding sections increases student access as well as FTES, but comes at a cost in relation to faculty time. Special care must be taken not to negatively affect efficiency by adding to many sections. By the same token, when numerous sections of a course have low fill rates, some may be cancelled and the students directed to sections with available seats so that their fill rates rise.

Consider the scenario where more sections have been scheduled than students need; suppose enrollments the Friday before the first day of classes average 40 students per section for a total of 480 seats filled. This is a fill rate of 80% ( $480 \text{ enrollments} \div 600 \text{ seats} = 0.8$  or 80 percent). A college in this situation might cancel 2 sections, thus increasing both fill rate and efficiency. The seat potential falls from 600 to 500, and the 480 enrollments out of 500 possible creates a 96% fill rate.

Note, many factors enter the decision to cancel a course section. One of the most important to consider is if a section is cancelled, will there be a sufficient number of available seats in the remaining sections to accommodate students from the cancelled section? Cancelling sections is not a simple "go/no-go" proposition, as a section could be low-enrolled for a variety of reasons, including being a capstone course in a major, a specialized CTE or STEM class, among others. Generally, colleges have a list of exceptions to consider when making the decision to retain or cancel a course section.

The Vision for Success initiative of the California Community Colleges is a strategic vision focused on goals of student completion, student success, and student equity. The Student Success Funding Formula activates funding to support these goals. Specifically, funding for community colleges is parsed in three areas: base funding (access or enrollments in course sections), supplemental allocation supporting efforts in achieving higher levels of student equity, and a student success allocation funding completion of degrees, certificates, transfer level courses in English and mathematics, and CTE courses, among other successful outcomes. As such, particular attention must be paid to facilitating the successful access, learning, and completion of courses of all students in a timely manner. When considering cancellation of course sections due to "low" enrollment, the lost funding possibly arising from lower completions and reduction of student equity outcomes should be considered in addition to the loss in efficiency.



## Guiding Questions For Discussion

1. Eleven sections of Accounting 201 have been offered generating metrics that fall below targets. Why is this a problem? What are some possible solutions?
2. What factors should be considered when making a determination to cancel a course? How does the introduction of Guided Pathways with specified program maps affect these factors?

### Course Data and Facilities Utilization

Allocating and using classroom facilities plays a critical role in managing FTES and efficiency targets. The amount of FTES that any college can earn is limited by the number and sizes of its classrooms and the number of its online instruction offerings. With classroom-generated FTES, the capacity (or upper limit) for earning FTES is essentially determined by “seats in the classrooms.” For example, in the ACCT example presented in Table 4, enrollments were capped at “Total Seats” or “Total Capacity.” Most colleges seek to align enrollment caps, which are set based on pedagogical considerations and then codified in faculty bargaining agreements, with actual classroom capacity, in order to maximize the use of their facilities.

We have seen in earlier examples of calculating FTES how the number of students actually enrolled in a section can vary from section to section. These variations in actual enrollment are usually the result of student demand and students’ ability to take classes at days and times offered. To attain the highest levels of efficiency consistent with the pedagogical needs of the curriculum, it is essential that colleges assign sections to classrooms that are the same size as the enrollment caps, otherwise seats will be empty. Empty seats mean reduced access for students.

Inefficient classroom use occurs when (a) a section is assigned to a classroom that has a larger seating capacity than the enrollment cap of the section and (b) a high-demand section is assigned to a classroom that has a smaller number of seats (capacity) than its normal enrollment cap. In the first case, the room has empty seats at census. In the second case, there are no empty seats, but it is likely students who wanted to enroll cannot. Both cases result in lower FTES revenue thus putting downward pressure on FTES/FTEF. More importantly, student access and completion are negatively affected by inefficiency. In the Student Centered Funding Formula now in place, fewer student completions means fewer revenue dollars to the college.

From a cost perspective, colleges that set enrollment caps below the potential enrollment of the classroom or assign high-demand sections to small rooms will see the efficiency of scheduled classes declines unnecessarily. In other words, additional funding will be needed to reach the college’s FTES target. This additional funding for the schedule of classes is funding that other areas



of the college cannot use. For these reasons, it is incumbent upon both faculty and administration to work together to ensure budget sustainability and optimal use of classrooms by setting enrollment caps appropriately.

With the ACCTG example in Table 4, Total Seats represents both the course maximum established for the course and the physical classroom capacity. The state pays just over \$5,000 per FTES. If a 45-seat lecture classroom has 45 students enrolled at census in one 3-hour class, then its fill rate is 100%, its classroom utilization rate is 100% for the hours scheduled, and it will earn 4.5 FTES and over \$22,500 in revenue.

If one classroom can reasonably schedule 14 sections in a term, it will generate over \$315,000 in revenue in one semester. In a year, revenues can approach more than three-fourths of a million dollars. Classrooms are a source of significant revenue for a college district and must be used productively and efficiently if the college is to reach its FTES objectives.

Colleges have increased their efficiency and optimized FTES by evaluating their facilities utilization and minimizing the number of classes offered in facilities with larger capacities. They have also increased efficiency and optimized FTES by minimizing the number of classes held in facilities with capacities less than the class maximum.



## Guiding Questions

### For Discussion

1. Does your district and/or college monitor your actual and potential FTES Capacity for each classroom?
2. How efficiently utilized are classrooms on your campus? Can you think of ways to improve their efficiency?

#### **Using Average Enrollment per Section/Room to Manage College-Wide Efficiency**

The concept of efficiency sometimes triggers concerns or misunderstandings among faculty and others concerned about delivering high quality education. Often, the concerns center on compromising quality when enrollment in a class is set too large relative to the pedagogical standard—50 students in an English writing class, for example. Colleges that assign classrooms based on pedagogy, such that seat capacity matches the pedagogical need, are able to achieve efficiency relatively easily through facilities management, which is a process of actively allocating classrooms based on their established enrollment caps.



Another source of concern arises when people assume that an average number is an ideal number or it applies to everyone. For example, when a college sets its FTES/FTEF target at 3.5 per FTEF, this means that it is also setting its average enrollment per section or room at 35 student enrollments. Clearly, courses that have an enrollment cap at 25, 30, or any other number lower than 35 will not reflect this average. Knowing that an average target enrollment does not apply to each and every course offered helps to allay peoples' concerns. Knowing how the average will be achieved also helps. Consider the data in Table 6.

Table 6. Average Enrollment Capacity of Classrooms

Classroom Identification Number	Type of Classroom	Number of Seats
HUM 101	Lecture	25
BIO 202	Laboratory	30
SOCSCI 150	Lecture	50
<b>Total Number of Seats</b>		<b>105</b>
<b>Average Enrollment per Section</b> (Divide the total number of seats by the number of sections)		<b>35</b>

In Table 6, three classrooms of different seat capacities are shown. HUM 101 and BIO 202 together seat 55 students. To reach an average of 35 enrollments they would need a total of 70 seats. Their seat capacity totals just 55, however. Classes assigned to the larger classroom (SOCSCI 150) provide the additional enrollment needed to bring the college-wide average to the 35 enrollment target. Together, the 3 classrooms seat 105 students for an average student enrollment per section/room of 35 students. Looking at all of College A's classrooms and their seat capacities provides the foundation for measuring the college's seating and FTES capacity.

Using the facilities management approach successfully requires periodic assessment about how fully classrooms are being utilized. When classrooms are renovated or new classrooms built, colleges have an opportunity to alter class seating capacity to create improvements in efficiency. In so doing, more students can be served while simultaneously lowering the cost per section due to higher amounts of FTES earned. Facilities management is an ongoing and long-term method that builds efficient use of classrooms automatically (for the most part) into the scheduling process.



## Guiding Questions

### For Discussion

1. Suppose a college sets the enrollment per section target at 36 students per section. Does this mean that all sections must have a minimum of 36 students? Why or why not?
2. If a college has half its lecture classrooms designed to seat 45 students in each room, how does utilizing these rooms fully help achieve the college's fiscal sustainability?
3. Are classrooms allocated/reallocated periodically to programs in response to shifting enrollments? If so, is FTES capacity used to inform district/college-wide FTES targets? If not how would this practice benefit your college/district?
4. In addition to the need to optimize FTES, why is it important for colleges to utilize classroom capacity as fully as possible? How does utilizing classroom capacity as fully as possible integrate with the intent of Guided Pathways?

# Appendix A

## UTILIZING DATA DASHBOARDS TO TRACK ENROLLMENT

Throughout this guide, short examples are presented to show how colleges utilize FTES, FTES/FTEF, WSCH/FTEF, and other metrics to inform their enrollment management processes. Over time as data visualization software has become popular and easy to use, colleges are creating data dashboards. These dashboards build upon traditional daily reports prepared to monitor ongoing enrollments over time. Palomar College has created a series of data dashboards to inform its campus community about enrollment, FTES, efficiency, and student outcomes. One type of dashboard produced by the college includes a series of daily enrollment and FTES reports.

Each dashboard in the enrollment series dashboard provides a variety of “looks” at the data. Executive leadership, deans, department chairs, and faculty can track and monitor data. During registration, the reports provide guidance on student demand and fill rate allowing for adjustments to the schedule as needed. The following screenshots capture the design of the Daily Enrollment and FTES reports.

### Palomar Data Dashboards

The Palomar Data Dashboards comprise (1) daily, interactive data on FTES, enrollments, and fill rates, (2) a student profile at key points in the term, (3) end-of-term student outcome reports, and (4) enrollment management data.

Select Term: Spring, 2018 ▼

**Daily Reports**

- FTES & Enrollments
- Fill Rates

**Student Demographics**

- Key Dates
- End of Term

**Student Outcomes**

- Course Success Rates
- Degrees & Certificates

**Enrollment Management**

Enrollment Snapshot			
4 Days After Opening Day			
	2017	2018	% Change
<b>Headcount</b>			
Credit	21,951	22,197	1.12%
Noncredit	1,283	1,286	0.23%
<b>FTES</b>			
Credit	7485.8	7622.1	1.82%
Noncredit	184.2	172.5	-6.38%



The Main Dashboard Page lists the type of reports on the left and provides a brief snapshot of enrollments on the right.

## Daily Report Dashboards

The Daily Report Dashboards provide daily, interactive data on FTES and enrollments, as well as fill rates. Point-to-point comparisons are made at key points in the term.

Spring, 2018

### FTES & Enrollment

- [Daily Comparison](#)
- [FTES Trend](#)
- [Enrollment Trend](#)
- [Key Dates Comparison](#)
- [Summary Report](#)

### Fill Rate

- [Daily Comparison](#)
- [Trend](#)
- [Key Dates Comparison](#)
- [Summary Report](#)

[Return to Palomar  
Data Dashboards](#)



The Daily Report Dashboard introductory page provides an overall summary of the different types of reports for each category (FTES, Enrollment and Fill Rates). By clicking on one of the reports, users navigate to the data table.

**Daily Dashboard Reports**  
**Spring – Enrollments & FTES**  
**Daily Comparison**

Spring, 2018 – 4 Days After Opening Day

Display by  
Location

Filter by: Division (All) Department (All) Subject (All) Catalog Number (All) Accounting Method (All) Method of Instruction (All) Session (All) Day/Eve (All)

Spring 2018 Enrollments & FTES								
	Enrollments				FTES			
	2017	2018	Change		2017	2018	Change	
			#	%			#	%
<b>Credit</b>								
Resident	65,673	65,967	294	0.4%	7,212	7,328	116	1.6%
Non Resident (Not State Funded)	2,522	2,465	-57	-2.2%	274	270	-4	-1.6%
<b>Credit Total:</b>	<b>68,195</b>	<b>68,432</b>	<b>237</b>	<b>0.3%</b>	<b>7,486</b>	<b>7,598</b>	<b>112</b>	<b>1.5%</b>
<b>NonCredit</b>								
Enhanced	1,130	995	-135	-12.0%	153	136	-17	-11.3%
Regular	645	714	69	10.6%	31	37	6	17.7%
<b>NonCredit Totals:</b>	<b>1,775</b>	<b>1,708</b>	<b>-67</b>	<b>-3.8%</b>	<b>184</b>	<b>172</b>	<b>-12</b>	<b>-6.4%</b>
<b>Total (State Funded Only):</b>	<b>67,448</b>	<b>67,675</b>	<b>227</b>	<b>0.3%</b>	<b>7,396</b>	<b>7,501</b>	<b>105</b>	<b>1.4%</b>
<b>Grand Total:</b>	<b>69,970</b>	<b>70,141</b>	<b>171</b>	<b>0.2%</b>	<b>7,670</b>	<b>7,771</b>	<b>100</b>	<b>1.3%</b>

Note: WSCH & FTES combine actual and projected values. Positive Hour Projections based on current enrollment times the avg. hours per student for the prior three like terms. Daily & Weekly Projections (i.e. prior to their census day) are based on current enrollment.

[FTES & Enrollment Daily Comparison](#)
[Enrollment Trend](#)
[FTES Trend](#)
[FTES & Enrollment Key Dates](#)
[FTES & Enrollment Summary Report](#)

The Daily Comparison report allows users to compare the present term’s data as of the current date compared to the previous term’s data at the same point in time (e.g., four days prior to opening day). Users can filter the data by division, department, subject/catalog or course, accounting method, session (e.g., full-term, fast track 1, fast track 2), and Day/Evening status (including online).

## Daily Dashboard Reports

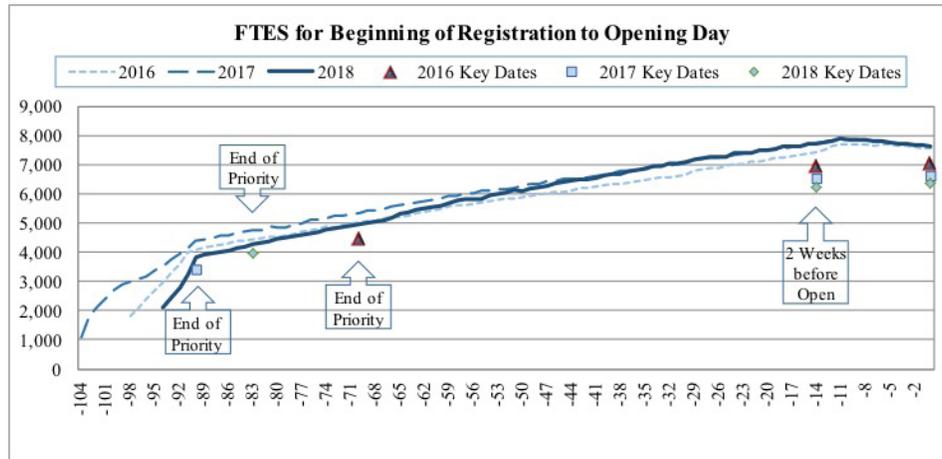
### Spring – Enrollments & FTES

#### FTES Trend

Spring, 2018 – 4 Days After Opening Day

Filter by:

Division	Department	Subject	Catalog	Accounting	Method of	Session	Day/Eve
(All) ▼	(All) ▼	(All) ▼	Number	Method	Instruction	(All) ▼	(All) ▼
			(All) ▼	(All) ▼	(All) ▼		



- |                                    |                  |            |                              |                                  |
|------------------------------------|------------------|------------|------------------------------|----------------------------------|
| FTES & Enrollment Daily Comparison | Enrollment Trend | FTES Trend | FTES & Enrollment Key Points | FTES & Enrollment Summary Report |
|------------------------------------|------------------|------------|------------------------------|----------------------------------|



The Trend report provides enrollment trends for three similar semesters and notates key dates or special events that may have impacted enrollment. This allows users to view enrollment activity over time and compare it to previous terms for better projection and understanding of the data.

**Daily Dashboard Reports**  
**Spring – Enrollments & FTES**  
**Key Dates Comparison**

**2 Weeks Before Opening Day**

Filter by: Division (All) Department (All) Subject (All) Catalog Number (All) Accounting Method (All) Method of Instruction (All) Session (All) Day/Eve (All)

Spring 2018 Enrollments & FTES Key Dates Comparison								
Key Date	FTES:				Enrollments:			
	2016	2017	2018	Change %	2016	2017	2018	Change %
After Priority Registration								
Credit								
Resident	628.6	670.2	673.2	0.5%	5,734	5,820	5,794	-0.4%
Non-Resident	33.1	35.3	35.4	0.5%	302	306	305	-0.4%
Non-Credit	27.4	25.2	25.1	-0.2%	225	229	229	0.1%
2 Weeks Prior to Opening Day								
Credit								
Resident	6,161.9	6,570.1	6,691.1	1.8%	56,211	57,054	58,023	1.7%
Non-Resident	324.3	345.8	347.4	0.5%	2,958	3,003	2,842	-5.4%
Non-Credit	268.9	246.9	246.5	-0.2%	2,210	2,243	2,243	0.0%
First Day of Classes								
Credit								
Resident	6,759.3	7,207.0	7,206.3	0.0%	61,660	62,585	62,592	0.0%
Non-Resident	355.8	379.3	374.1	-1.4%	3,245	3,294	3,287	-0.2%
Non-Credit	295.0	270.9	265.5	-2.0%	2,424	2,460	2,455	-0.2%

[FTES & Enrollment Daily Comparison](#)
[Enrollment Trend](#)
[FTES Trend](#)
[FTES & Enrollment Key Points](#)
[FTES & Enrollment Summary Report](#)

The Key Dates comparison reports provides the same data but are restricted to special or key dates during registration and throughout the semester. The demographic reports (not shown here) also provide key date comparisons that the campus community can utilize to see if enrollment by a specific student group is growing, remaining stable, or decreasing. Enrollment services can refer to the reports to inform their outreach activities. Finally, summary reports (not shown here) provide context and interpretation of the date.

## **SEM Resource Guide in the Series**

- A Roadmap for Strategic Enrollment Management Planning
- Understanding and Calculating FTES and Efficiency
- Data Tools and Metrics for Strategic Enrollment Management
- Developing and Managing the Class Schedule
- High Impact Retention, Persistence, and Success Practices for Strategic Enrollment Management
- Support Services for Strategic Enrollment Management
- Targeted Marketing and Communications for Strategic Enrollment Management
- Understanding CCC Budget and Reporting Part I (CCSF-320 Report)
- Understanding CCC Budget and Reporting Part II (Exhibit C, Fifty Percent Law, and FON)