



California
Community
Colleges



INSTITUTIONAL EFFECTIVENESS
PARTNERSHIP INITIATIVE

Developing and Managing the Class Schedule

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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.

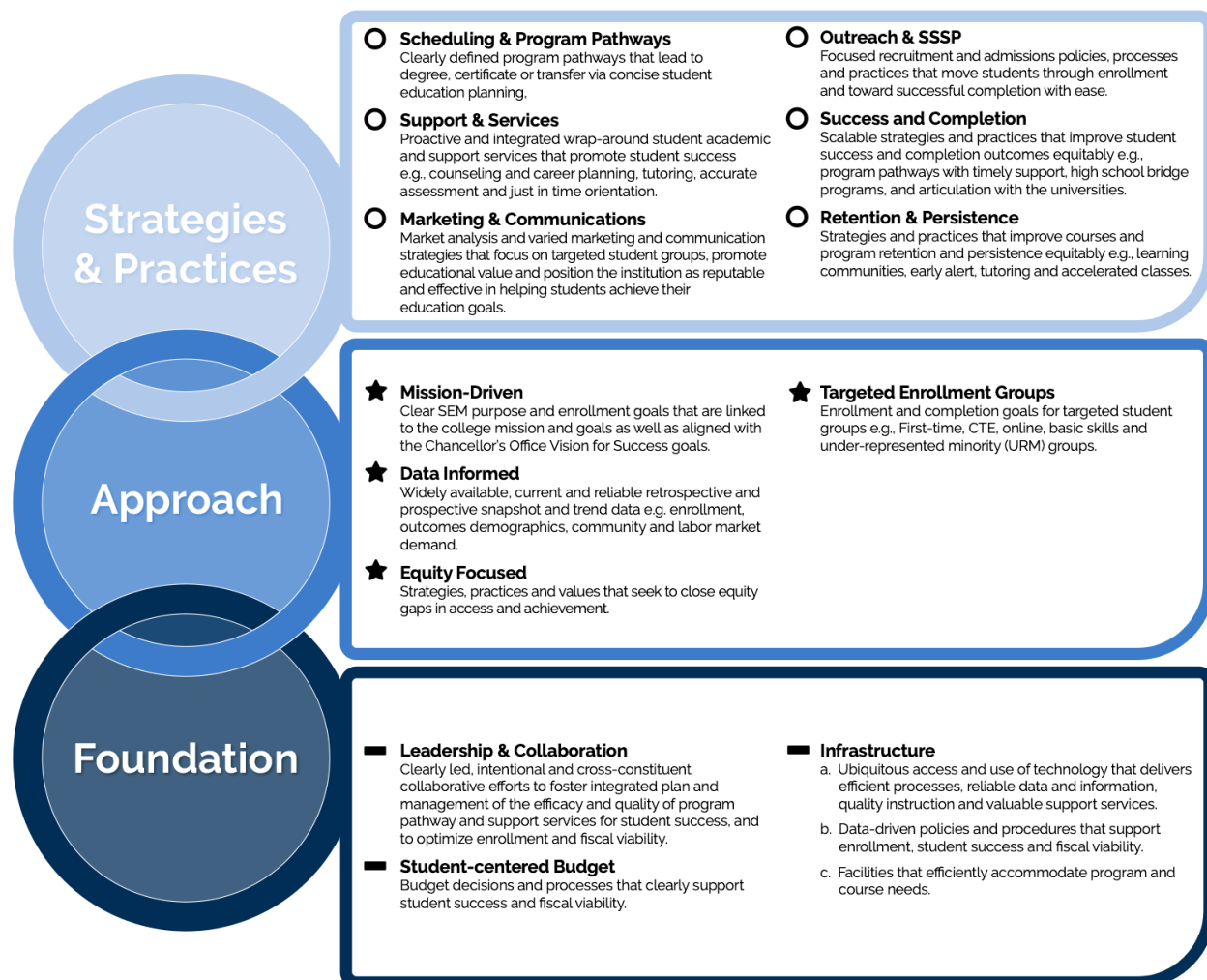
Reframing SEM. With the establishment of the Vision for Success, Guided Pathways, the Student Centered Funding Formula and other supporting initiatives, the SEM Project has continued to update and develop important tools, resources, and services that clearly align with these major statewide initiatives 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 goals¹. 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.

¹ 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

One of the most complex aspects of any college's operations is to develop a schedule of classes that first and foremost helps students reach their academic goals. The schedule must also ensure the fiscal solvency of the college by (a) meeting the full-time equivalent student (FTES) target, (b) using physical resources such as classroom and laboratory spaces efficiently and effectively, and (c) optimizing faculty workload. While the FTES metric is currently the primary funding mechanism for a college, completion metrics contribute to the way a district earns its general fund revenue too. Although schedule development is the primary responsibility of the Chief Instructional Officer (CIO), it is done in consultation with deans, faculty, researchers, and business officers.

In many ways, schedule development operationalizes the Strategic Enrollment Management (SEM) plan of a college. For example, if a college has set a target to increase the number of dual-enrolled/concurrently enrolled K12 students, the class schedule needs to include the types of courses these students need. Timing and location of the classes are also important considerations. Similarly, if a college is interested in increasing its working adult population, it must evaluate the types of programs and needs of these students and translate that information into a collection of classes offered at a time, place, and modality that is amenable to those students' work schedules.

For the California Community College (CCC) system, enrollments vary according to the health of the California state budget and overall economy. Generally, when the economy declines, community college enrollments increase; conversely, when the economy improves, enrollments decrease as more potential students find employment. This cycle creates three common climates of enrollment management: high enrollment, low enrollment, and stable enrollment. During the budget crisis that began in 2009, for example, the CCC system lost nearly 600,000 seats because colleges were forced to reduce section capacity as well as the number of available sections, although demand for seats often increased. As the economy has improved, colleges have reinstated those available seats. At the time of this publication, more students have found employment, so enrollment trends are currently either static or in decline. But that can change.

In 2017, the CCC Chancellor's Office unveiled a new strategic vision for the system, the Vision for Success, which is focused on improving student success and completion and reducing achievement gaps. In order to help the California Community Colleges, accomplish that vision, a new framework, Guided Pathways, was mandated for all colleges. In Guided Pathways, the goal is to streamline curricular pathways for students and provide comprehensive, holistic support for students throughout their educational journeys. In addition to mandating Guided Pathways, legislative reforms recently are aimed at boosting student success and reducing time to completing a degree or certificate. These include:

- AB 705: Developmental Education Reform-Assessment Protocols
- AB 19: College Promise
- SB 1440: Associate Degrees for Transfer
- Student Centered Funding Formula

With respect to SEM in general and the schedule in particular, Guided Pathways and these legislative changes will require some change in practice. For example, colleges will need to review their course offerings to ensure that the appropriate classes are being offered to support the meta-major and program pathways they have developed for students. Additionally, the changes in developmental education will require colleges to adjust course offerings, reducing pre-collegiate offerings in math or English and increasing them in transfer-level offerings. However, the largest change to the schedule stems from the implementation of Guided Pathways. (See section titled *Determining the Appropriate Mix of Curricular Offerings* in this guide for more information.)

Traditionally, colleges have developed schedules aimed at capturing as much FTES as possible since colleges have traditionally been funded on this metric. With the change in funding structure, less importance is given to FTES generation and more funding is given based on student success and completion. Moreover, with the renewed focus on the integration of student services, student support, and instruction, it is imperative that the schedule be developed from an inclusive, integrated approach rather than the traditional silo approach (e.g., instruction, department or discipline only) of the past. Although not the only source of funding, FTES as a metric remains key in a number of processes related to developing and managing the schedule—an idea that will be discussed throughout this resource guide. Additionally, colleges will still need to develop schedules that meet the needs of students irrespective of the funding mechanism. Thus, a well-developed schedule should balance the equally important goals of student success, program completion, new program development, and fiscal sustainability.

Impact

A balanced schedule of classes impacts college operations and SEM in multiple ways:

- The class schedule represents a collection of courses the college has assembled to meet its mission, support meta-majors and program pathways, and effectively serve students.
- Student attendance in classes generates FTES, a significant source of college funding and a metric used throughout the scheduling process.
- Faculty provide the instruction and facilitate the learning environment inside and outside the classes. In addition, they recruit and retain students, fulfilling a critical role in SEM. Faculty also provide the academic expertise in determining such things as the appropriate course sequencing and delivery mode.
- Overscheduling (e.g., offering too many sections or not offering the right mix of courses) leads to cancelations, which negatively impacts both students interested in taking the courses and faculty who are assigned to teach the courses.

- Under-scheduling (e. g., offering too few sections or not the right mix of courses) leads to student frustration in not being able take required courses, which can have both short-term and long-term effects on their ability to reach their educational goals.
- A well-designed and balanced schedule considers the needs of students, the appropriate pedagogy, and the required resources. It facilitates student completion and is constructed in a way that optimizes efficient and effective FTES generation.
- When scheduling is done right, it also supports the college in meeting its SEM goals.

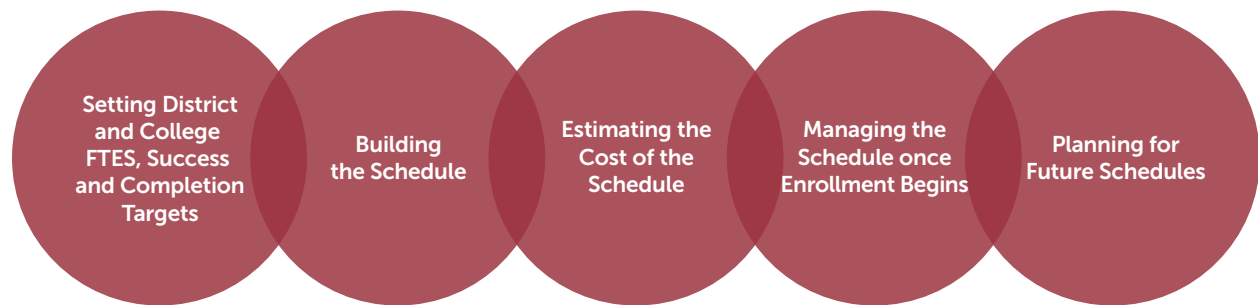
Description

The purpose of this scheduling resource guide is to explain the processes often used in developing and managing schedules. Colleges and CIOs approach development and management of a class schedule in different ways. Although this guide does not prescribe or endorse a specific process, any scheduling should be a collaborative process with the CIO who has primary responsibility for its establishment. The examples presented here are drawn from different colleges with different perspectives to illustrate the variety of methods a college may use.

Generally, the scheduling process begins with the establishment of an academic calendar and the setting of district fiscal targets to ensure that colleges remain financially solvent. Once established at the district level, the responsibility of developing the schedule then moves to the college. The CIO leads those involved in the scheduling process (e. g., deans, faculty, researchers) in evaluating student need and or demand along with other data from past scheduling cycles. Often, this includes the development of efficiency targets for the schedule that help ensure the goals of the schedule are accomplished in the most cost effective manner. Next, the CIO and his or her team ensures that the appropriate mix of curricular offerings are included in the schedule so that pathway, degree, and certification completion are facilitated. This is accomplished by ensuring that schedule times, locations, and modalities are matched to student demand or need and includes the efficient and effective use of classroom facilities. After the schedule is constructed and staffed with full- and part-time faculty, the CIO can estimate the cost of the schedule and compare it with the amount of FTES generated so that an evaluation of efficiency can be made. Once registration begins, department chairs, deans, and the CIO monitor enrollment and take steps to rebalance courses according to student demand, which might mean adding or cancelling sections. Finally, the effectiveness of the schedule is assessed to identify the need to adjust course offerings for future academic terms.

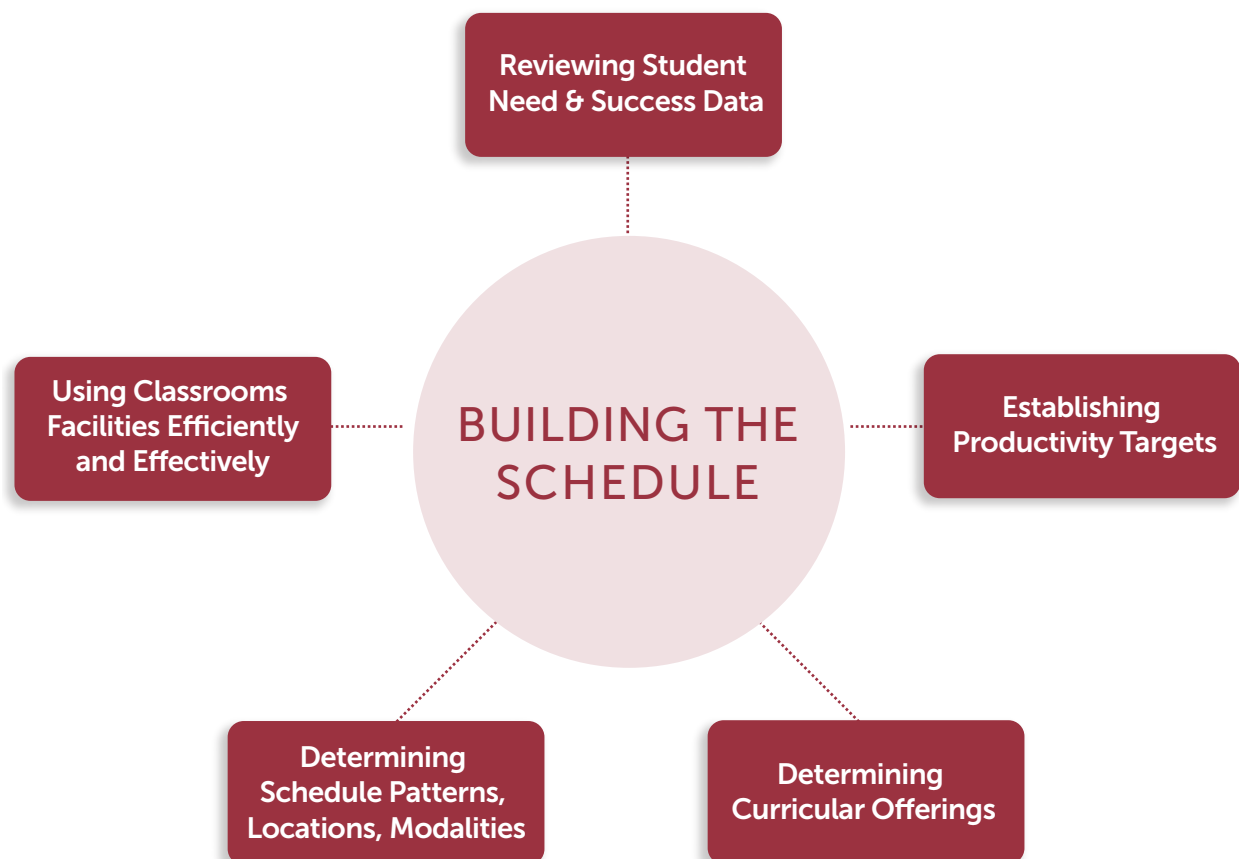
The content of this guide is organized under the following broad topics areas shown in Diagram 2.

Diagram 2. Five Broad Topic Areas Addressed in this Guide



The process for building the schedule has a number of components as shown in Diagram 3. Although the five components appear in one specific order, the scheduling process is actually flexible, and may be conducted in the manner that works best for individual colleges. The intent here is to illustrate and clarify some of the processes most often used. Some colleges may also go well beyond what is listed in this scheduling guide.

Diagram 3. Building the Schedule: Related Processes and Components



As colleges consider their options for developing a schedule as presented in this resource guide, they might benefit from reviewing the complementary guides and documents in the SEM Project, and in particular the guide titled, *Calculating and Understanding FTES and Efficiency* and the *Data Tools and Metrics for Strategic Enrollment Management*. These are especially valuable for administrators, faculty, and staff who are new to their positions or are from out of state. All of the SEM Project resources are beneficial for individuals as well as for committees or teams (e.g., for Flex day or orientation retreats/workshops) as they expand their understanding of SEM functions. All of them can be found at <https://visionresourcecenter.cccco.edu/ask/topic/sem>.



Strategies & Practices

Each of the components of the scheduling process (Diagram 4) is considered separately in the following section. Instructional professionals often refer to the scheduling process, which includes activities related to building and managing the schedule as the enrollment management cycle or process.

SETTING DISTRICT AND COLLEGE FTES, SUCCESS, AND COMPLETION TARGETS

Districts need to establish FTES targets for their colleges to remain financially viable. With the changes in funding structure, FTES remains as the primary metric upon which colleges are funded, and colleges will still need to establish fiscal targets. In addition, some colleges may consider establishing fiscal targets related to the completion metrics included in the funding formula or conduct simulations to evaluate the impact of changes in one type of metric over another. In 2018-19 as the California Community Colleges transitioned to the new Student-Centered Funding Formula, the Chancellor's Office contracted with the Fiscal Crisis and Management Team (FCMAT) to develop a calculator that assists districts and colleges in creating four-year funding projections. The calculator, which allows colleges to use different assumptions and scenarios, can be found at: <http://fcmat.org/local-control-funding-formula-resources/>

In order to establish an FTES target, 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, CIO generally estimates how much full-time equivalent faculty (FTEF), or faculty contact hours, will be needed to achieve those targets and reviews cost figures from the prior term in order to estimate the additional monies required to achieve growth targets. The Chief Business Officer (CBO) works to ensure that the CIO has sufficient resources to achieve the targets.

In many respects, the new funding formula means that effective scheduling is more important now than ever before because scheduling to serve student needs is linked directly to the three major funding components (a) Base Allocation (FTES and growth), (b) Supplemental Allocation (headcounts of students with financial need), and (c) Student Success Allocation (degree, certificate, and Career Technical Education [CTE] course completion, successful transfer to 4-year universities, completion of transfer-level math and English courses in the first year, and attainment of a regional living wage). By creating schedules designed to reach specific student target groups and accelerating time to student goal achievement, more students are served in each category and total funding rises as a result. Ways and means of increasing schedule effectiveness need to be



explored. Examples include development of a system-wide scheduling software tool to ensure courses needed for completion are being offered when students need them and tools to communicate with student target groups about available needed classes, among others.

Once a district identifies its target FTES and other student success goals, resources needed to generate the FTES are considered. One metric that helps districts determine the costs needed to achieve the targeted FTES is 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 example in Table 1, the mix and number of courses and the FTEF needed to generate the FTES varies between the two districts. Both districts start with the same base allocation of 12,000 FTES, but 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 an insufficient number of larger-sized lecture classrooms, ineffective scheduling processes, a number of full-time faculty on reassignment (please see the section Estimating the Cost of the Schedule for more discussion of this issue), or a different mix and types of courses. That extra 50 FTEF costs District B approximately \$175,000 more to accomplish the same goal as District A, which gives District A a possible advantage, as they now have \$175,000 to use toward instructional supplies, equipment, or facilities and can potentially improve the quality of instruction and experience received by its students.

Table 1. 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 productivity estimate, some also employ models for establishing FTES targets and FTEF allocations at the division, department, and discipline levels.

For a complete description on FTES targets, FTES/FTEF ratios, and FTEF allocations, including the impact of the type of academic calendar on FTES generation, please refer to the resource guide titled, *Calculating and Understanding FTES and Efficiency*.



Guiding Questions For Discussion

1. What process does your district use to establish FTES fiscal targets?
2. How is your schedule linked to FTES forecasting and the budget development process?
What conversations are occurring related to FTES and the changes in funding structure?
3. How is your district addressing the student completion metrics in the new funding structure?



BUILDING THE SCHEDULE

The Academic Calendar

The academic calendar determines when classes are offered. While there are constraints on the length of the academic calendar imposed by the state and collective bargaining agreements, discussion about dates for the beginning and ending of instruction as well as holidays (non-instructional days), are important and the CIO, deans, and faculty should be engaged in conversations that place students' needs first in the development of the calendar. For example, discussions about registration dates, add/drop dates, census dates, etc. can all potentially impact not only FTES but also financial aid for students. Stakeholders from all constituent groups in the district should be involved in developing the academic calendar so all of these factors can be accommodated. Once the calendar is established, the CIO, deans, and faculty, with support from researchers (or data), can begin the scheduling process. Additionally, with greater emphasis on student success and completion as well as the holistic needs of the students, these conversations should be intentional and thoughtful about student needs. Finally, the length of the term (e.g., 15-18 week semesters) can also affect completion and enrollment goals.



Guiding Questions For Discussion

1. Who is involved in the development of the district's academic calendar?
2. How are student needs addressed in the academic calendar?
3. How are pedagogical needs addressed in the academic calendar? Are faculty a part of the academic decisions made regarding length of class (e.g., short-term sections) and delivery mode (e.g., online)?

Reviewing and Evaluating Student Need, Demand and Success Data

Before beginning the scheduling process, the CIO, deans, and researchers need to analyze past schedule performance and student success indicators. Some key performance metrics are:

- Enrollment trends by course and section
- Fill rates (the number of students enrollment divided by the number of seats available or capacity, expressed as a percentage)
- Wait list data, including attempts to enroll in class sections that were full
- FTES earned by section and/or department



- Regulatory and/or operational changes that may affect enrollment patterns
- Student retention, persistence, and success rates by course and/or discipline
- Meta-major and program pathway offerings and student educational plan data
- CSU and University of California general education (GE) pattern offerings

Enrollment trends and fill rate reports let deans and faculty know which courses students are choosing to take and when. These reports also help deans and faculty identify whether or not the schedule's course capacity (the number of seats available) is adequate, over-built, or under built. The enrollment trends and fill rate reports also provide information on the speed with which courses and sections fill, which is another indicator of student demand. Courses that fill slowly should be reviewed to determine if too many sections are being offered that meet the same requirements. For example, both English 104 and Philosophy 167 in College A meet the critical reasoning requirement of general education. However, English 104 tends to fill immediately whereas Philosophy 167 takes longer to fill. The college may choose to market Philosophy 167 to students as another option for meeting the critical reasoning requirement, reduce the number of sections of Philosophy 167 and increase sections of English 104, or adjust when and how each of these courses are offered throughout the day. This highlights the importance of considering or integrating conversations about the holistic nature of the schedule as part of the development timeline. It is important to include faculty perspectives in such discussions, because there are instructional or academic considerations to discuss in addition to the consideration of fill rates.

A companion piece of information to the enrollment trend data is the waitlist or a student demand report, which identifies unmet capacity. This information lets the deans and faculty know where to adjust future schedules so that student demand is met. Particular attention should be paid to the days and times when demand peaks. These reports show which courses had the most numbers of students trying to enroll but also include the days and times students were trying to register for courses. This information lets the deans and faculty know where to adjust future schedules so that student demand is met.

More detailed analyses can occur when the number of sections offered is compared with the amount of FTES that is earned per section. This information can also clarify where the schedule is overbuilt or underbuilt. For example, if 10 sections of History 1 are offered with average enrollments of 15 or 16 (when capacity and the agreed-upon maximum is 45 students per section), the FTES per section would be approximately 1.5 or 1.6 as compared to 4.5. To correct this imbalance, the number of sections would need to be reduced so that reasonable capacity is maintained for students in a manner that reduces costs for the district. In this case, the 15 students per section represents a capacity of 150 enrollments in History 1, but the capacity that was established was 450. In order to address this, the number of sections could be reduced from 10 to 4 (180 enrollment capacity). That extra capacity ($450 - 180 = 270$) could be reallocated to another department that has unmet student demand, thus, both needs are



addressed without increasing costs to the district. However, another factor is that some sections might be smaller but are necessary for certain students to complete their program (e.g., day student vs. night student).

Detailed comparisons of student retention, persistence, and success by course modality provide critical information that impact the class schedule. Deans and faculty can review reports disaggregated by departments, meta-majors, program pathways, and/or courses to determine which modality (e. g., online, face- to-face, short-term, etc.) promotes greater student success. Most colleges have student success thresholds for each modality and frequently compare how successful students are in each type. Deans and faculty can identify anomalies in student success for each modality and make determinations about changes that may be needed in class offering patterns, or identify additional support services or instructional changes that might be used to improve student success.

Regulatory changes such as AB 705 (the restructuring of assessment) can also impact demand for courses. For example, when College A introduced multiple measures assessment by using high school grade point averages, most of the students were placed in transfer-level English instead of English 1 (below transfer). Initially, such changes will not be reflected in the prior year trend data. The CIO in consultation with deans and faculty needs to identify such changes and amend the schedule to accommodate shifts in demand. Additionally, colleges are revising their curriculum and adding co-requisites, which require different blocks and longer times per course, and they are also changing the pathways through math depending on a student's program (e.g., non-STEM majors).

As colleges develop meta-majors and program pathways, the scheduling team will need to evaluate student behavior related to the pathways. For example, data from student educational plans can let them know which pathways are more popular with students, and reports can be extracted from the student information system that show when students are planning on taking specific courses. Although students may or may not adhere strictly to these plans, knowing this information helps the deans and faculty plan appropriate capacity in future schedules

Other data to inform the decisions about when to schedule various courses include the following: local certificate and degrees (terminal and for transfer), the CSU GE pattern, and the University of California Intersegmental General Education Transfer Curriculum (IGETC) pattern. These pathways identify the requirements students must meet to fulfill certificates, degrees, and four-year GE certifications. Reports can be generated that show what the district has offered in each of these pathways and identify oversaturation, as well as gaps, in offerings. Both instructional and counseling faculty should play a prominent role in pathway and sequencing determinations, including the CTE arenas.



Guiding Questions For Discussion

1. What data or reports are readily available to support the scheduling process? With whom are those reports discussed, and how is that information used? Is there broad participation with constituent groups?
2. How has your college evaluated the efficacy of its scheduling practices? Who is involved in those discussions?
3. In what ways do your college's scheduling practices advance meta-majors, program pathways, and student success and completion?
4. What data about student success and enrollments is available through the student information system or data enterprise system? How, and with whom, is that information discussed?
5. What conversations about student success and class scheduling are occurring? Who is included in those conversations? In what ways are student services and student support personnel involved in these discussions? What is the decision pathway for actually making changes to the schedule?
6. Are there successful scheduling practices used at other colleges that might be considered?



Establishing College Efficiency Targets

As noted earlier, although the funding structure is no longer based solely on FTES generation, most of the efficiency metrics still require the FTES metric in their formulas. Colleges vary in the extent to which they establish efficiency targets. Some of the more common metrics are FTES, FTES/FTEF, and/or weekly student contact hours (WSCH)/FTEF targets by departments or disciplines. Additionally, based on the type of discipline, the targets will vary. For example, the WSCH/FTEF target for mathematics will be different from the target for English composition because math courses typically have larger class sizes and earn more FTES than English composition courses.

A review of the information found in the Calculating and Understanding FTES and Efficiency resource guides would be very helpful for those districts interested in diving deeper into this issue.



Guiding Questions For Discussion

1. Does your college establish FTES and efficiency targets at the department, discipline, meta-major, or pathway levels? What are the pros and cons of doing this?
2. How do these targets improve the scheduling process?
3. Are these targets well understood by the constituent groups involved in the scheduling process? If not, what opportunities for professional development should be provided?

Determining the Appropriate Mix of Curricular Offerings

Historically, institutions have considered courses offered in three broad categories: transfer and degree applicable courses, CTE courses, and basic skills courses. Colleges have balanced the mix of the three categories based on the mission of the institution, the programs unique to that college, the anticipated demand, capacity (both physical space and human), and fiscal constraints. The implementation of Guided Pathways and other legislative changes have challenged that perspective on balance, modifying the mix of offerings based upon program requirements as a package (or a group or bundle). In addition, the role of noncredit support courses, basic skills and short-term CTE, sometimes controlled by a separate scheduling and administrative group, are becoming more integrated with the overall institution in order to provide flexibility in scheduling. These factors and their influence on the balance and mix of offerings are briefly described below.



Legislated Factors. Many new aspects of legislation have directly or indirectly mandated shifts in considerations for course offerings, such as SB 1440 (Guaranteed Transfer degrees), Guided Pathways (SB 85 Education Code Sections 88920-88922), AB 288 (Dual Enrollment), AB 705 (transfer mathematics and English), the Student-Centered Funding Formula (AB 1809) and SB 850 (CCC Bachelor Degree Programs). This is not a comprehensive review of the factors but begins to address new perspectives and considerations that will be consequential.

Transfer and Articulation. The California Community Colleges (CCC) Associate Degree for Transfer (ADT) are two-year associate degrees that are fully transferable to the CSU and require no more than 60 semester units or 90 quarter units. This guarantee to the students requires that all components of these programs are available and balanced with regards to units and availability. The challenge for balancing the offering within these degree and/or transfer pathways lies in the new perspective for GE offerings. In many colleges, traditional GE has not been treated like a program but rather like a loose set of requirements independently scheduled and created by different disciplines.

GE Breadth requirements (for CSU) in areas A1: Oral Communication, A2: Composition, A3: Critical Thinking, and B4: Quantitative Reasoning are often referred to as the Golden Four and considered as foundational skills for college level outcomes that should be completed by students within their first year. Colleges should consider whether they are offering adequate sections of EACH of the golden four for students. AB705 legislation focuses on ensuring students can complete their transfer-level mathematics and English courses (i.e., area A2 and B4). However, some colleges have found that the true gatekeeper is inadequate section offerings in A.3.

In addition, courses that scaffold skills or have prerequisites should be scheduled with those factors in mind. Even if a specific course is a restricted elective in an ADT, adequate sections of that course based on the number of students declaring that major should be offered according to the program maps.

Guided Pathways. Guided Pathways requires colleges to balance their course offerings based upon programs or meta-majors (groupings of programs based on similarities), driven by a goal to reduce time to degree and accumulation of units. Many colleges have constructed program maps directing students to take specific coursework during particular semesters in order to more clearly direct students to completion. Colleges must consider the ability for students in each program pathway to complete not only the program's major courses, but also the appropriate GE and other support components specific to the pathways. This places a greater significance on student education goals and majors as sources of information regarding the number and timing of section offerings.

In Diagram 5, the Biology program map from Bakersfield College identifies not only the biology courses required for the degree, but it also lists the preferred GE courses that should be taken and the semesters in which they should be taken.



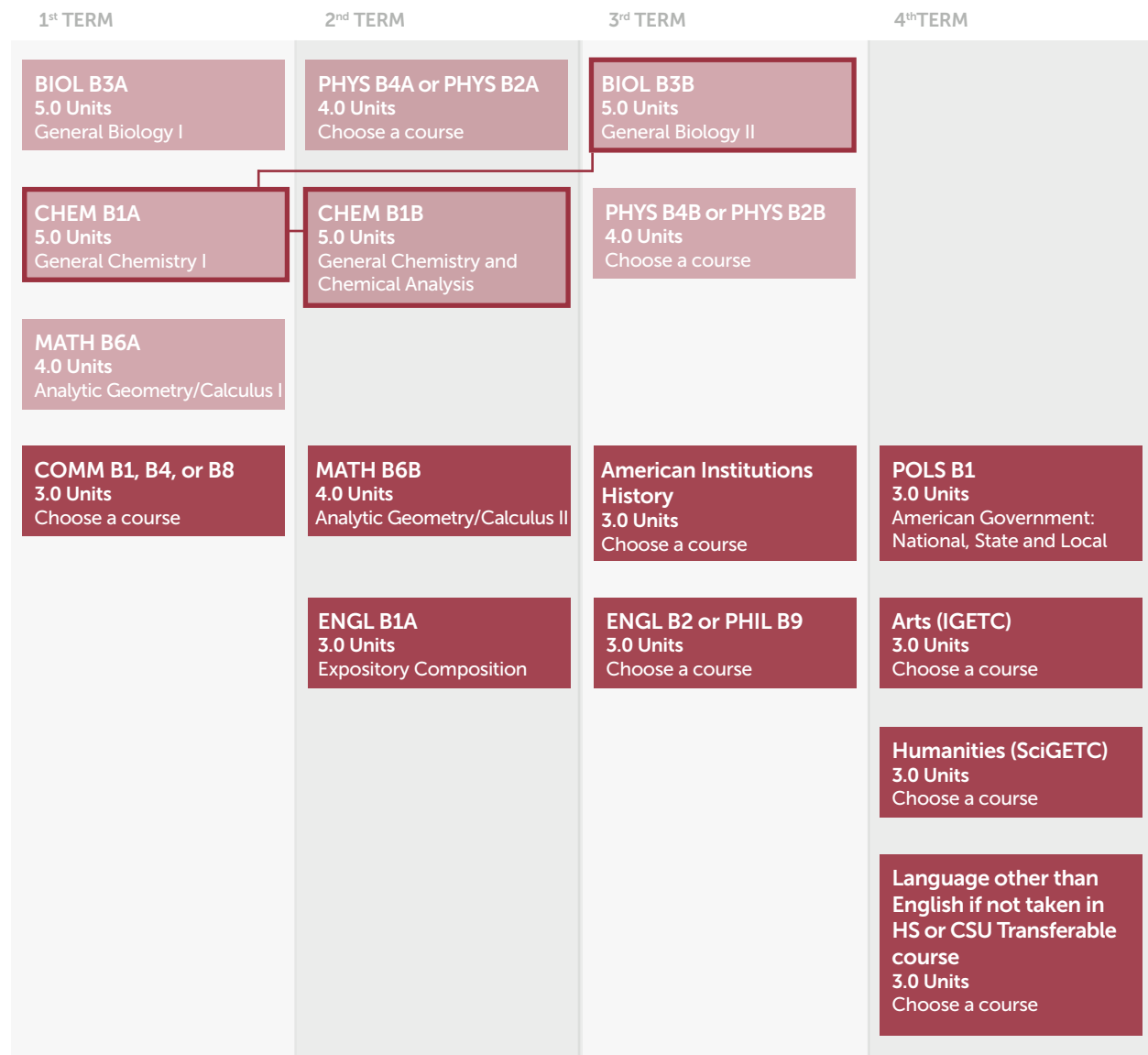
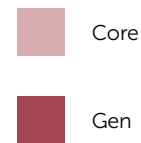
Diagram 5. Example of a Program Map

Program Map

Biology Associate in Science for Transfer

Pathway To:
CSU - Bakersfield

Time to Completion:
2 years



Dual Enrollment. Dual or co-enrollment offers a unique opportunity to help students engage early with college and complete pathways sooner. The significant research indicating the connection between dual enrollment and completion and transfer makes these courses important components of the overall balanced curricular offerings. To the extent that courses maintain the appropriate



rigor, these experiences help students bridge to college-level expectations early and may provide the opportunity to complete GE requirements and explore various higher education areas of interest before declaring majors. (Note that completion of English and math and/or quantitative reasoning requirements in these courses could negatively impact funding formula incentives for completion in the first year and AB705 accountability.)

Math/Quantitative Reasoning and English/English as a Second Language Completion. AB 705, which focuses on moving students through transfer-level curriculum in math, English, and English as a Second language (ESL), has led to a significant reduction in the number of basic skills courses offered in mathematics/quantitative reasoning and English/ESL. To ensure that a student can complete the appropriate transfer-level courses within specified time frames, colleges are placing more students directly into transfer-level coursework and requiring adequate support courses, such as co-requisite and supplemental instruction to be jointly offered.

The co-requisite model must be carefully considered as it adds units and time to a student's schedule for a single course completion. For this reason, many colleges are using non-credit courses for co-requisites to provide more flexible support, reduce nontransferable units and reduce cost. Some have mistakenly interpreted this legislation as prohibiting the offering of pre-transfer courses, but in fact Education Code Section 66010.4 requires that colleges offer courses and instruction to achieve the provision of developmental education for those that need it.

The Student Centered Funding Formula. The Student Centered Funding Formula (SCFF) rewards completion, transfer, reduced unit accumulation, workforce indicators, and reduced equity gaps. Like the Guided Pathways legislation, balancing courses for completion within pathways is crucial. In addition, the new funding formula, as implemented by the CCC Chancellor's Office, incentivizes joint completion of transfer-level math/quantitative reasoning and English/composition courses in the first academic year a student attends, which substantially shifts the importance of providing first-time students adequate sections for which to register and complete. This will require deep conversations about the effect of coupling these milestones within the first year and providing adequate types of courses that enable students to meet these milestones within their own educational goals and pathways. As required by AB 705, adequate support must be provided for students placed directly into college or transfer-level courses. This essentially increases the classroom space and faculty FTE required for a single course within the same semester.

Career Technical Innovations. Special attention should also be given to Career Technical Education (CTE) programs where completion is rewarded through the SCFF. Faculty should recommend proper sequencing for CTE courses, which often include sequential or scaffolded courses and may culminate in a capstone course or internship that prepares students for certification or licensure requirements. Care should be taken to ensure that courses are scheduled to support the availability of those courses. Innovative scheduling such as compressed courses and weekend or hybrid courses has enabled the broader use of CTE equipment and labs. One proactive strategy is for faculty and deans to develop a 2- or 3-year schedule of offerings for



all types of courses and pathways that informs students about which term specific courses will be offered and, hopefully, in which modality (face-to-face and online). Counseling and advising faculty and staff can use this information to inform students during the educational planning process. By using such a strategy, the college can adjust for student demand by not committing to the number of sections that will be offered (thus not committing to additional section costs), but still provide a blueprint of timing for course offerings that can help students and counselors plan more effectively.

Baccalaureate Degrees. The approval of bachelor's programs at the California Community Colleges created a new perspective in the system as a whole—one that has not yet been fully embraced. Table 2 shows the currently available bachelor of arts/science programs offered in the CCC. Now, a student can transfer from an associate degree program to a bachelor's degree program within the same CCC system. These programs provide affordable, advanced higher education and transfer for associate degree programs if the prerequisite courses for the pathways are considered. Alignment of existing CTE programs and courses with prerequisites for transfer to other CCC bachelor's programs could create additional opportunities within CTE.

Table 2. Bachelor's Degree offered at CCC

COLLEGE	DEGREE
Antelope Valley	Airframe Manufacturing Technology
Bakersfield	Industrial Automation
Cypress	Mortuary Science
Feather River	Equine and Ranch Management
Foothill	Dental Hygiene
MiraCosta	Biomanufacturing
Modesto	Respiratory Care
Rio Hondo	Automotive Technology
San Diego Mesa	Health Information Management
Santa Ana	Occupational Studies
Santa Monica	Interaction Design
Shasta	Health Information Management
Skyline	Respiratory Care
Solano	Biomanufacturing
West Los Angeles	Dental Hygiene



Guiding Questions For Discussion

1. How do you decide which meta-majors and program pathways to offer? How are these processes connected to curriculum and program review processes?
2. Have you mapped out the best pattern for programs regarding the appropriate major requirements, restricted electives, and GE courses to complete within a reasonable time line? If so, how are these maps informing your schedule of class offerings.
3. How will discussions about pathways extend beyond the disciplines and include GE requirements? Who will be part of these discussions?
4. When was the last time your college critically reviewed its course offerings to determine gaps in requirements for transferring to CSU or University of California? Does your college offer an appropriate balance of GE courses?
5. How do you decide which CTE courses to offer? How well are the CTE courses aligned with business and industry?
6. How well are CTE scheduling needs integrated with GE offerings?
7. Colleges are defining their meta-majors and creating program maps now. At the same time, they are developing their schedule for next year. What are the implications of this?



Determining Course Scheduling Patterns, Locations, and Modalities

The new legislation (discussed above) and expectations for reducing time and units to completion indicate that student education plans and student education goals should be the first layer of detail to estimate course and program needs. It is important to consider factors relative to diverse student populations from the perspective of timely completion, such as full- and part-time students, incarcerated students, online students, and dual-enrolled students. This will mean constructing program pathways, ensuring appropriate sequencing and percentages of course within meta-majors, program pathways, and degrees and certificates are offered on the main campus, at various centers, and at a variety of times. Balancing the curricular offerings (including GE offerings) also means that those requirements should be scheduled, and balanced for completion, by locations, during day and evening sessions, online and weekends when appropriate.

The CIO, deans, and faculty should have discussions about the modalities of scheduled course offerings, meta-majors, and program pathways. Colleges may have agreed-upon processes for determining the best modality for the targeted students and for a specific curriculum and/or course. These include the ratio of face-to-face to online (or hybrid) courses, short-term or fast-track scheduling, block scheduling, and dual enrollment programs which become part of the divisional goals for the deans and faculty. Each of these practices helps provide different student populations with access to a college education, and each has its strengths and weaknesses.

- **Online/Hybrid:** Helps students who have difficulty getting to a physical campus. There are many considerations when deciding on this modality including, not all students have the self-discipline required for online learning and some curriculum is not compatible with distance learning. Additionally, faculty members need to be well prepared to adapt their curriculum and teaching methods for distance education. Any change to class size from the course outline should be discussed with faculty. For more information about the faculty role in distance education including relevant Title 5 regulations and Education Code citations. See the paper, *Ensuring Effective Online Education Programs: A Faculty Perspective*, published by the Academic Senate in 2018 (<https://asccc.org/sites/default/files/OE%20Paper%20Final%203.12.18.pdf>).
- **Short-Term/Fast Track:** Helps students complete pathways more quickly and allows for colleges to open new courses during a term to accommodate student demand. This approach means there are multiple starting dates in the schedule of classes, which can be confusing to students, and switches apportionment rules from weekly student contact hours (WSCH) to daily student contact hours (DSCH), potentially decreasing FTES generation. However, short-term fast track courses often provide a viable option for part-time students. Part-time students and/or working students can complete a course in less time thus allowing them to earn and keep the credits rather than lose them if they have to drop mid-term. (See *Calculating and Understanding FTES and Productivity* resource guide for additional information on changes to how FTES is calculated for short-term courses.) Many colleges are noticing stronger enrollments in their short-term and online courses.



- **Block Scheduling:** Helps new students, especially those coming from high school, by providing a structured, cohesive schedule and improves space utilization and FTES production. Block scheduling implies a “one-size fits all” approach which can challenge programs, in particular CTE, that have courses that may not necessarily fit easily into the block. The *Calculating and Understanding FTES and Efficiency* document, included as part of the SEM Project and a complementary resource to this guide, provides examples of block schedules.
- An additional perspective and option for block scheduling can be found at the following link:
<http://www.austincc.edu/academic-and-career-programs/block-schedule-options>.
The Austin Community College class schedule is organized into block schedules by program. The block schedule program gives students the option to schedule their classes in back-to-back blocks that can fit a full course schedule into one or two days a week during mornings, evenings, and online. Students select their program or award of interest and then receive different block schedule options.
- **Dual Enrollment:** Helps students who are currently attending high school by providing them with dual credit for college-level courses. This approach is made more difficult by the need to find instructors who meet both high school and college level discipline requirements. Still, AB 19 incentivizes colleges to have high school students engage in college as soon as possible. Colleges may choose to offer dual enrollment to facilitate that engagement. For more information about Dual Enrollment, see the resource guide, *High Impact Retention, Persistence, and Success Strategies for Strategic Enrollment Management*.
- Colleges must also discuss whether to offer courses at off-campus sites. If the college spreads its offerings to more off-campus sites in support of access, additional complexities arise in the form of support for the faculty teaching at these sites (appropriate technology, equipment, supplies, etc.) and the lack of other college services (e. g., counseling, library, etc.). However, providing on-site classes closer to students’ work and daily life can lead to increased enrollments and student achievement of goals.

Ultimately, the college must assemble the collection of classes it plans to offer. Generally, there are three practices in developing the schedule: using a rollover schedule, using a “zero-based” schedule, or using a combination of the two. However, these scheduling processes are driven by past practice, and the college should ensure that they are now more deeply informed by data related to student education goals and majors and include not just departmental review but also institutional review by curricular experts. As Guided Pathways become a reality, it is likely that colleges will move from developing the class schedule in silos (e.g., by department/discipline) to utilizing a more student-centered holistic approach that examines programs and offerings across specific departments and disciplines.



Many colleges prefer to use a rollover schedule in which the previous term forms the basis of the new schedule (for example, Fall 2017 would be used for Fall 2018). In this case, the deans and faculty would update the schedule with any changes in instructor names or classroom assignments. The rationale for this approach is that much of the schedule remains the same term after term, and only minor modifications are needed. The drawbacks of this approach include a greater likelihood of error (not catching all of the instructor and room changes for example) and also that it might be basing the scheduling process on convenience rather than students' needs. It also downplays the need for the critical analysis of the current data referenced earlier.

Some colleges go to the opposite extreme, using a “zero-based” scheduling process in which the schedule is essentially developed from scratch each new term (e.g., Los Angeles City College in the Practical Application section of this document). The rationale for this approach is that it keeps the scheduling process responsive to both data and student need. A possible drawback of this approach is that additional work may be necessary to build new sections of highly-enrolled, cost-efficient courses that could have been easily rolled over from the previous term. (Note, in the Los Angeles City College example, once the class sections are determined, a technical “rollover” within the system is completed and adjustments are made to ensure the schedule in the college's database aligns directly with zero-based schedule.)

Most colleges use a combination of approaches, starting with a rollover but making changes to department allocations based on new data and student demand. The rationale for this approach is that it saves schedule builders time (e.g., usually administrative assistants) in the actual schedule development process, and allows schedule planners (deans and faculty) the flexibility they require to adjust their schedules as needed. Some departments may be given additional capacity based on the data, and other departments may have capacity reduced.



Guiding Questions For Discussion

1. How will your college integrate the student education plans, majors, and program maps into the scheduling discussions?
2. How are decisions about what courses to offer online made? Who is involved in those conversations?
3. If accelerated or short-term classes are offered, what processes or discussions are used to determine what should be offered, when, and in what format?
4. In what ways are issues of course sequencing addressed so that students can complete? Have you considered sequences and prerequisite course requirements (such as Calculus, Physics 1 and Physics 2)?
5. Is schedule development done in silos (e.g., within separate divisions, departments, disciplines)? If so, what are the advantages and disadvantages of this? How do Guided Pathways, AB 705, and AB19 affect these conversations?
6. What type of schedule building process does your college use (rollover, zero-based, combination)? Is it effective? Why or why not?
7. As colleges expand schedule planning efforts to cover a 1-, 2-, or 3- year period, what requirements of a software tool could emerge and facilitate this task?
8. To what extent does your college follow a process that analyzes the proposed schedule and makes adjustments based on conformity with block scheduling modules? Why is this step important to students and room utilization?
9. To what extent does your college's scheduling process ensure that early morning, later afternoon, evening, and Friday/weekend offerings are sufficient to meet student demand? Why is this scheduling goal important?
10. How is academic and student support integrated or timed with your offerings?



Using College Classroom Facilities Efficiently and Effectively

Availability of space is another critical factor in schedule development, and colleges need to ensure that available classrooms and laboratory spaces are used efficiently. Also, availability of space may restrict schedule development even when there is demand. For example, a college may have unmet demand in Chemistry 1 but cannot offer more sections due to insufficient laboratory space.

Each classroom has an established maximum capacity. That capacity should be matched with the course capacity limit or “class size” which is established through the curriculum processes. The goal is to match course capacity with classroom maximum capacity for maximum efficiency. For example, if a Political Science 2 course has a capacity of 45, the college should not offer the course in a classroom that seats 30, as it would result in a loss of 1 .5 FTES. Conversely, an English 1A class with an established course capacity of 30 should not be offered in a large lecture hall with a classroom capacity of 75, as in this case, 45 classroom seats would go unused, creating a loss of approximately 4.5 FTES.

Issues related to course capacity often involve curriculum and negotiation processes. Still, all individuals involved in the scheduling process must have an understanding of the college’s facilities capacity. Facilities usage reports can help deans and faculty identify available classroom space for future scheduling efforts. Additionally, as new facilities are built, thought should be given toward balancing the needs of smaller, specialized classrooms with larger capacity lecture halls. Regardless of size, each classroom should have the appropriate technology and equipment to support effective instruction.

A practical approach to room allocation is to view all available rooms as the college inventory and not limit availability to specific division inventory. This approach helps optimize the classroom usage across disciplines/divisions. However, it is a common practice for the CIO to give the deans and faculty “first scheduling rights” in a block of rooms for the practical allocation of rooms. The CIO and the deans may adjust the rooms or reallocate them to other divisions in support of student demand. For example, assume a classroom in the business division has a capacity of 45. The course scheduled in the room has a capacity of 35 but realistically, the demand shows that it may enroll 30 students. The mathematics department needs a classroom with a capacity of 45, so offering the mathematics class in the business building would serve more students. The CIO often has to help facilitate these sometimes politically-charged conversations around room usage.



Guiding Questions

For Discussion

1. Does your college have a campus-wide room inventory? How is this information reviewed and used during the scheduling process?
2. What reports are available about space utilization and allocation? How do classroom allocations get made? Who is involved in those conversations?
3. Is there an established process to address room usage in case of a scheduling conflict?
4. Does your college periodically review classroom utilization to ensure that classroom under-utilization is not a problem?



ESTIMATING THE COST OF THE SCHEDULE

Although the funding structure for districts has changed, CIOs and the deans must still be concerned about the cost of the schedule so that resources are used as efficiently and effectively as possible and the schedule is within budget. This ensures that the district does not over-extend itself from a resource perspective while attempting to earn FTES targets, and frees up additional resources to support student success and completion efforts, which lead to increased funding. There are several factors that affect the cost of the class schedule.

First, the CIO and deans in particular should have financial information regarding class costs disaggregated by faculty type (e.g., full-time load, overload assignment, or part-time load). By understanding class costs by faculty type, the CIO and deans can make decisions about how class assignments for faculty load will be made. In normal scheduling practices, all full-time faculty are given assignments to meet their contractually mandated load of classes. Collective bargaining agreements sometimes also stipulate how overload assignments (for full-time faculty) are allocated and the amount of overload assignment that is permitted for each faculty member. Depending on the collective bargaining agreement, overload salaries for full-time faculty could be higher than part-time faculty salary for the same course. Thus, it behooves the CIO and the deans to understand the potential ramifications of overload assignments.

State regulations and local collective bargaining agreements also place limits on the amount of load a part-time faculty member may teach. For example, state regulations stipulate that if a part-time faculty member teaches .67 of a full-time load over multiple terms, the college would be obligated to convert that individual into a full-time faculty member, resulting in unanticipated, increased costs to the college. Because of this, CIOs and deans must strictly monitor the amount of over-load assigned to both full-time and part-time faculty members.

Another factor that affects the budget for the schedule is the various types of leaves available to full-time faculty members. These can include sabbatical leave (can be either a semester or full-year of time as permitted by the collective bargaining agreement), reassignment of full-time faculty to other college responsibilities (e. g., chairing an important college committee or working on special projects that require extensive commitments of time), “load banking” (a situation in which faculty members have taught above their contractual loads and thus are able to bank or save that load to be used as leave in a future term), and any known or anticipated medical or parental leave. Each of these types of leave represents gaps in the scheduling process; in other words, classes that would normally be taught by full-time faculty members and covered by their full-time salary must either be covered by another full-time faculty member (thus altering that faculty member’s schedule) or “backfilled” with a part-time faculty member, which increases costs to the schedule. The challenge for the CIO and the deans is to balance the impact of all of these factors in the schedule development process.



The hiring of new faculty and the retirement of other faculty is an additional element to be considered in estimating schedule costs. Generally, colleges manage this shifting of the faculty ranks through the processes associated with the state's Faculty Obligation Number (FON) requirement. Briefly stated, the state expectation is that colleges are striving to ensure that 75 percent of their instruction is taught by full-time faculty and only 25 percent by part-time faculty. The state uses a formula that examines both full-time and part-time faculty load, along with FTES, to establish annual targets for colleges. If colleges fail to meet the FON, penalties are imposed. In reality, very few colleges are at the ultimate goal of 75/25 instructional ratios, but all colleges should be meeting their annual FON target.

In reviewing FON requirements, colleges will evaluate the impact of anticipated retirements and new faculty positions for the coming year. This is usually done at the mid-year point so that the CIO and CBO, again in consultation with executive cabinet, can determine how many new faculty the budget can support, measured against the college's FON requirement. Although retirements will be discussed in the process, the CIO and CBO should not assume these cost savings will actually materialize until the faculty member actually submits a retirement letter that is accepted by the college. After all retirements have been submitted, the district and college can review the cost savings resulting from retirements, the annual FON obligation, plus existing and projected budget realities in order to determine how many new faculty can be hired for the next academic year.

With respect to the class schedule budget, each new faculty member's faculty load (if not a replacement for a retiring faculty member) should result in a reduction of part-time faculty costs in that new faculty member's discipline. To illustrate, suppose a part-time faculty member's salary for a Psychology 1 class is estimated at \$4,000 per class. Because a new faculty member has been hired for the psychology department, that individual's full-time load would be five classes (assuming a 3-unit load). This means that the psychology department would experience a reduction in part-time costs (for scheduling purposes) of \$20,000 (\$4,000 x five classes) per term for the academic year. Of course, these cost savings may not materialize because of other circumstances noted above (e.g., leave and reassignment). The point is that the CIO and the deans need to actively monitor all of these situations and adjust the class schedule budget with these anticipated circumstances in mind.

Finally, the CIO and the CBO need to make adjustments to the class schedule budget to accommodate any negotiated salary increases for both full-time and part-time faculty. This also means there will be additional benefit costs that the budget must cover. However, once the decision is made to hire new faculty, the college's costs for full-time faculty are beyond the control of the CIO. The only option for the CIO to manage these costs is to ensure that all faculty are teaching their contractually obligated load. Thus, the CIO can really only control overload and part-time costs.



Because the class schedule budget can be affected by so many variables, the CIO and CBO must carefully review each term's costs so that established budgets are realistic yet flexible. These costs and efficiency targets (with respect to faculty load) should be part of the data used in the schedule development process.

Table 3 below shows a simplified breakdown of the impact of part-time and overload assignments (including scheduled and replacement sections) on the cost of a schedule using FTEF. A more detailed and accurate example could be created utilizing actual paid contract hours, however, for ease of interpretation, FTEF is used. In this example, since the contract or full-time faculty salaries are actually part of the overall budget and beyond control of the CIO, they are not included in the table. Review of the table shows the importance of calculating the costs of part-time and overload assignments made to replace contract faculty on leave or reassignment. In the example below, replacement FTEF for the 36 FTEF of contract faculty on leave or reassigned would cost about \$750,000. This is important information for both the CIO and CBO to consider when creating a budget for the class schedule.



Table 3. Example of Schedule Cost Estimate for Part-time and Overload FTEF

Estimates Cost per 3 Weekly Faculty Contact hour class or (.20 FTEF) for PART-TIME = \$4,000.00
 Cost per 3 Weekly Faculty Contact hour class or (.20 FTEF) for OVERLOAD = \$6,000.00

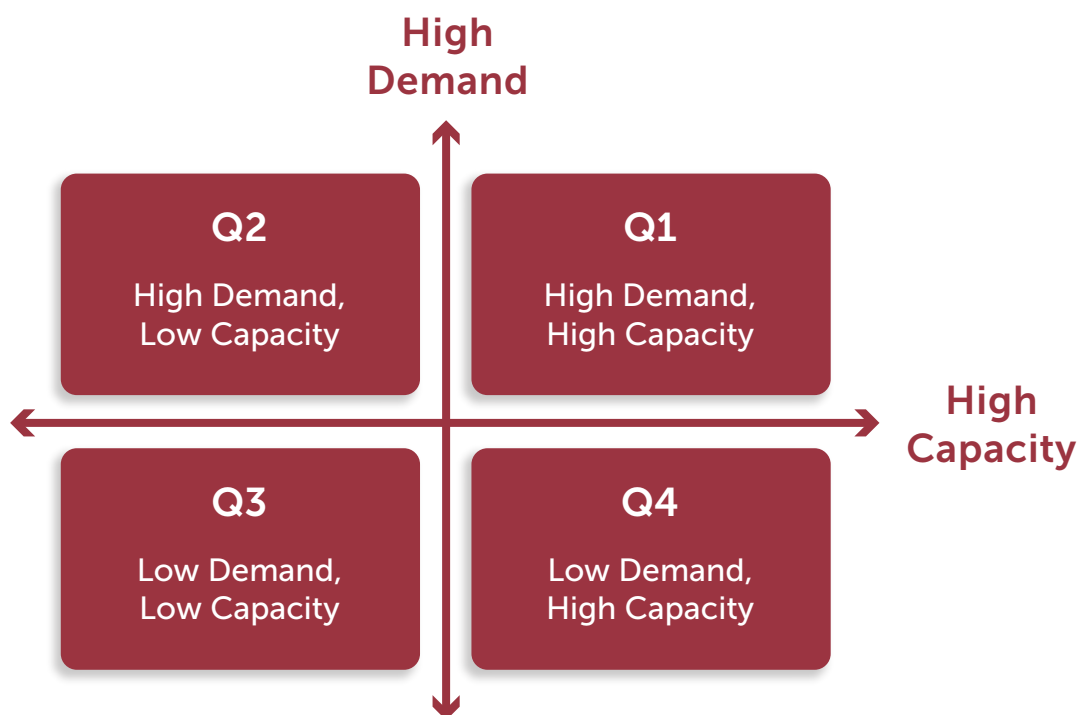
	FTEF	ESTIMATED COSTS
Full-time Faculty Attributable to FTEF		
FTEF Attributable to Full-time Faculty Teaching in Classroom	455.0	
FTEF of Full-time Faculty on Re-assigned Time	25.5	incl *
FTEF of Full-time Faculty on Load Bank Leave	3.5	incl *
FTEF of Full-time Faculty on Sabbatical or Other Leave	7.0	incl *
<i>Total FTEF of Full-time Faculty not in classroom</i>	36.0	incl *
<i>Total FTEF Contract / Full-time Faculty</i>	491.0	incl *
Part-time Faculty Attributable to FTEF		
FTEF of Part-time Faculty Teaching in Classroom assigned	389.8	\$7,796,000.00
FTEF of Part-time Faculty Teaching in Classroom replacement	33.0	\$660,000.00
<i>Total FTEF of Part-time Faculty</i>	422.8	\$8,456,000.00
Overload FTEF		
FTEF of Contract Faculty Overload Assignments either Assigned	12.9	\$387,000.00
FTEF of Contract Faculty Overload Assignments replacement	3.0	\$90,000.00
<i>Total FTEF Contract Faculty Overload Assignments</i>	15.9	\$477,000.00
Total FTEF / Estimated Cost of Replacement FTEF		
	36.0	\$750,000.000
TOTAL FTEF / Cost of Part-time and Overload		
	438.7	\$8,933,000.00

incl* = Full-time Faculty Staff Costs committed in institutional budget.

A Comment on Efficiency. It should be noted that no schedule is perfectly efficient, and the college balances highly-efficient, low cost courses (e.g., those in the social and behavioral sciences) with resource-intensive courses that will always cost more than they earn (e.g., nursing). In thinking about the schedule as essentially a collection of course sections informed by student education plans that lead to student goal completion, each section can be placed into one of the following four quadrants shown in Diagram 6.



Diagram 6. Four Quadrant Demand by Capacity Model



Since colleges still receive funding primarily through FTES generation, colleges must schedule in efficient and effective ways so that costs can be reduced and those savings deployed to support students in other areas (e.g., the support metrics in the funding formula). Thus, the four-quadrant demand model helps colleges explain how the balance of offerings supports their comprehensive suite of curriculum. The courses that support Guided Pathways also fall into this four-quadrant model (for the sake of explanation).

The first quadrant (Q1) represents courses that are in high demand and have large seat counts. Typically, social science courses such as Psychology 101 or Sociology 101 fall in this category. These courses satisfy student demand as well as generate revenue. The second quadrant (Q2) represents courses that are in high demand but have small seat count for pedagogical reasons. Although such courses are required, they often do not generate enough revenue to pay for themselves. English composition, as well as CTE courses requiring individualized instruction belong in this category. The third quadrant (Q3) typically represents capstone or specialty courses that are required for completion; however, the seat count is low because of pedagogical reasons and there is not much demand. Courses in the fourth quadrant (Q4) do not have a high demand but can accommodate many students. Emerging programs are likely to have courses in this category.



High demand courses are often needed by the students for completion or progress, but if they do not have a high capacity, these courses may not generate enough revenue to offset their costs. Any balanced schedule must ensure that the mix of courses is such that the college is fiscally viable as well as supportive of student needs. The college should use the agreed upon curriculum process and collaborative discussions to establish course capacities for both face-to-face and online courses. Class size should conform to that which is established by local policies and justified by the requirements of the course as delineated in the course outline of record. Generally, FTES/FTEF efficiency targets are more easily reached when section enrollment caps are matched with classroom capacity (seat counts). Classroom allocations to programs should periodically be reviewed to ensure that the program can increase sections to meet student demand.



Guiding Questions For Discussion

1. What are your actual class schedule costs for the past three years? Is this information disaggregated by full-time, overload, and part-time categories? Do you know whether or not the budget for the class schedule was adhered to, over-spent, or resulted in savings? How might you adjust next year's budget to accommodate this information?
2. What types of leave are negotiated for faculty in your collective bargaining agreement? What are your plans for covering them in the schedule?
3. How does your college address the FON? What processes are used to balance faculty retirements with the hiring of new faculty? How are these processes connected to program review processes?
4. What processes are in place for assuring that part-time faculty load assignments do not exceed established limits? Who is involved in those processes?



MANAGING THE SCHEDULE ONCE ENROLLMENT BEGINS

After the schedule has been developed and students have had sufficient time to review course offerings, the enrollment process begins. For the CIO, deans, and faculty, that means the management period of the schedule also begins and includes monitoring enrollment, canceling classes, and adding additional capacity.

From the beginning of the enrollment period, daily reports should be run that demonstrate registration activity by course section. This provides schedulers the opportunity to monitor registration activity and also creates a comparison point against past-term registration performance. These comparisons can serve as barometers of whether or not adjustments are needed in the immediate term.

Most colleges have language in the faculty collective bargaining agreements about class cancelation procedures and processes, as well as the minimum number of students required before a class becomes immune from cancelation. Regardless of whether or not such language exists, consideration of all aspects of students' needs are important and are balanced against the college's financial health. Additionally, canceling classes may affect students' progress in their chosen program pathways. The following strategies can be helpful once the decision to cancel a class is made:

- Cancel the class as early as possible to give students the opportunity to register for another class. Calling the students personally to let them know the class is being canceled and letting them know options about other open sections supports their success and reduces disruption for them. Sometimes, students can be automatically transferred into another open section (at the same day/time) through the Admissions and Records Office.
- Before a class is canceled, deans and faculty need to consider the impact of capstone and completion classes, particularly in the CTE areas. The decision might be made to let a low-enrolled class continue throughout the term for the sake of student success and completion. This should, however, be the exception and not the rule.
- If the decision is made to cancel a class, try to replace it with a high-demand course as evidenced by the immediate term waitlist activity. It is helpful to have additional instructor availability identified at the beginning of the term. When adding sections at this stage, deans and faculty will need to work with counselors and others to help get the word out to students about the new class. Replacing the canceled class in this manner can help keep the college on target with FTES goals.
- Keep detailed notes about what classes are canceled and what classes are added. This information becomes useful when planning the next term's schedule.



Regardless of whether or not particular classes are canceled, deans and faculty should be analyzing waitlist data in the immediate term to see where additional capacity is needed and if it can be met. Some colleges build “shadow” sections of high demand courses as classrooms or instructors become available. By doing this, they can easily activate the course, allowing students to register for them. Regardless of the practice, the CIO needs to be involved in any decisions to add classes so that the overall FTES targets and costs are properly addressed.

On many campuses, class cancellation is a topic of ongoing discussion. Schedules that are well built and provide for courses to meet student demand and completion needs result in fewer cancellations. This benefits students and faculty (in particular part-time faculty) who also feel the impact of class cancellations.



Guiding Questions

For Discussion

1. What are the stipulations in the faculty collective bargaining agreement about course cancellations or minimum class size?
2. What conversations occur about canceling or adding classes at the beginning of each term?
3. What research has been done to evaluate the impact of class cancellations on student enrollment and completion?
4. How can you plan for additional capacity that may be needed in case there is an opportunity to add classes?
5. How have you identified which capstone or low-enrolled classes need to be accommodated? How are they sequenced over time?
6. When you analyze your cancellation data, are there areas where too many cancellations occur? How can that be corrected?



PLANNING FOR FUTURE SCHEDULES

After the registration period has ended, the CIO often engages in two important processes in preparation for the next scheduling cycle: analyzing schedule outcomes for the term that just ended, and developing a plan to adjust the schedule depending upon areas that need scheduling improvement and, importantly, state funding factors.

An effective schedule should enable students to enroll for the classes they need, help students complete their degrees and/or certificates faster, increase classroom and laboratory utilization, improve WSCH/FTES, and meet the FTES goals for the institution. Some of the goals are relatively simple to measure while others require longitudinal tracking to document their impact on the schedule.

Increased fill rate and decreased waitlists indicate that the schedule of classes is better aligned to demand. The fill rate and waitlists should be monitored at the department and class section levels to identify any opportunity for better alignment. For example, out of 10 sections of Accounting 1, if three have empty seats and the other seven have waitlists, further analysis should be conducted to find out if there is a mismatch in the time of offering for the course. Similar analysis should be conducted for the mode of instruction (online vs. on-campus) to understand if the schedule can be better aligned to student demand.

Classroom and laboratory utilization reports can be generated so the CIO and deans can evaluate how effectively and efficiently space was used. An effective schedule should result in a higher proportion of resource utilization.

FTES/FTEF goals should be compared with the original targets. Since this measure of efficiency is fundamental to long term sustainability of the college, the CIO, CBO, deans, and the executive team should be included in this review and rebalance the FTES distribution as needed to achieve the college goals within preset budgets.

An effective schedule should improve student retention, persistence, success, and completion. However, the impact of scheduling on completion is not immediately recognized. Longitudinal tracking is necessary to measure the impact of these important metrics.

As more students finalize their student education plans and the plans are captured through a comprehensive software system, it is possible to aggregate education plans to predict future demand with a higher level of accuracy. The student education plans take into consideration the pathways and sequencing of courses according to co-requisites/prerequisites and academic goals. There are emerging software tools that help students decide their academic pathways and aggregate the data for usage by the institution for planning purposes. In a perfect situation, most students will have comprehensive education plans, yet in reality, it is a complicated process and flawless information is rarely available. However, by using advanced education and degree



planning software tools, colleges can aggregate individual student plans and predict future demand with a higher degree of precision. For more information on these tools, please consult the *Support Services for SEM* resource guide.

While the funding structure for California Community Colleges has been modified, FTES and its management remains a key focus (60% of the funding will come from FTES). Consequently, the CIO, deans, and faculty will need to continue to manage FTES in times of growth and in times of decline. It is important for the CIO to lead ongoing discussions and develop plans to (a) grow the FTES and (b) to reduce FTES. These conversations can be emotionally charged and should occur outside of the cycle. For example, discussing what needs to be cut in the schedule should be done before a budget crisis develops. The college should discuss and prepare for these scenarios ahead of time so that all constituents fully understand the planned courses of action.

It should also be noted that even though only 60% of the budget will be earned through FTES, schedules will have to be larger than the 60% in order to effectively serve students. Thus, the right size for the schedule should be whatever the students need. Some of the general fund money will come from the schedule, but the other money—with less restriction on usage—will come from student success and completion metrics.

Some strategies for managing enrollment during high-enrollment periods include:

- The CIO should work with deans and faculty to have a “shrinkage” plan. The plan should include discussions and practices about pathway requirements, student success by modality, streamlining of GE choices, and program viability discussions.
- As much as possible, the course offerings in the schedule should maximize capacity for students while preserving pathways.
- Increase outreach to students so they understand the value and benefits of attending college full-time and making smart choices when they register for courses.
- Ensure appropriate student support services (e.g., tutoring, supplemental instruction, etc.) are not adversely affected by funding.

It should be recognized that these latter two strategies have a positive impact on downstream FTES flows, thus helping to defray the programmatic costs of these services.

When the state budget contains more resources for colleges, enrollment often declines. During these periods, colleges are challenged to maintain sufficient enrollments necessary to meet base FTES funding levels. The tendency for some colleges is to “chase” FTES by expanding offerings as quickly as possible, in as many locations as possible. But by behaving in this manner, colleges sometimes waste valuable resources by offering courses with little FTES value, increased costs, and less focus on student success.



Some viable strategies for low-enrollment periods include:

- The CIO should work with deans and faculty to have a growth plan. The plan should include discussions and practices about pathway requirements, student success by modality, potential growth opportunities that promote student success, and new evidence-based student success initiatives that the college could implement.
- The college should view growth as a comprehensive package, particularly in light of the new funding structure. In other words, as course capacities increase, student support services should also increase. Some colleges have developed a formula to establish a percentage of growth in student support services that is commensurate with increased class capacity.

When colleges experience stable enrollment climates, the CIO, deans, and faculty should be reviewing data on student retention, persistence, and success to identify additional strategies that could be implemented toward improving those metrics. Additionally, by using processes such as curriculum and program review, careful attention should consistently be devoted to program viability. By following these practices, dramatic increases or decreases in enrollment will not drive program viability conversations in politically-charged environments.



Guiding Questions For Discussion

1. Have you developed a growth plan that identified which areas can grow and which cannot? Have deans and faculty been involved in those conversations?
2. What is your plan for reductions that may need to be made? Which programs will not be offered, and have deans and faculty been involved in those conversations?
3. What are the college's program viability processes? How are they tied to curriculum and program review processes? Are you following those processes?
4. At which sites will you offer instruction? Is there adequate support for students and faculty?
5. How do you assure there are adequate support services to accommodate increased course offerings?
6. Is evaluation of the schedule a part of comprehensive program review?



Practical Application

ZERO-BASED SCHEDULING (LOS ANGELES CITY COLLEGE)

Fast Facts

Fall 2017 Headcount: 17,570

Location: Los Angeles, CA

Fall 2017 FTES: 4,519

Structure: Multi-college district

Fall 2016 FTEF: 210

Background and Purpose

Los Angeles City College has developed a zero-based scheduling model and process for its primary terms. The Vice President for Academic Affairs (VPAA) and the Dean of Institutional Effectiveness (Dean of IE) established the process and its associated scheduling tools in consultation with the college's academic senate and union leadership, as well as department chairs and deans.

The model, which allocates FTEF to each department along with a clearly defined scheduling process and accompanying schedule planning worksheets, helps to make scheduling transparent. It includes an FTEF allocation for each department, which is based on the prior year's like term (fall to fall or spring to spring) performance (FTEF allocated and FTES generated), efficiency goals, and student success.

Process and Procedures

Schedule development begins with a conversation between the College President and VPAA. They discuss the budget and initial FTES targets for the college as provided by the district. The President, Vice Presidents, and Dean of IE determine the overall FTEF for the college. Once the FTEF for the term is set, the Dean of IE allocates the FTEF to each department based on the following agreed upon model:

- 50% of the allocated FTEF is based on the prior year's like term FTEF.
- 30% of the allocated FTEF is based on the department's closeness to the college's efficiency standard.
- 10% of the allocated FTEF is based on the department's nearness to the institutional set standards to course success rates.
- 10% of the allocated FTEF is initially held back by the VPAA and allocated based on individual department or college need.

Table 1 presented at the end of this section shows a sample of the allocation model in an Excel spreadsheet for a spring term. It includes the FTEF allocated for each department based on the model, as well as FTES and efficiency (FTES/FTEF) targets.



To support schedule development, the Dean of IE has created a schedule planning tool that lists each department's FTEF allocation, FTES target, and all of the courses offered in the last three previous like terms (see Table 2 at end of this section). Department chairs and deans use the spreadsheet to enter the number of sections of each course they plan to offer. As they enter information, the total FTEF scheduled and total FTEF remaining is automatically adjusted. The spreadsheet also projects the FTES and compares the projection with the department's target.

After FTEF allocations are made and departments receive their schedule planning tool, the work of building the schedule begins. The schedule is built from scratch each term and does not begin with a "rollover" from the college's information system. The Dean of IE meets with each department chair and dean to review historical course data and complete the schedule planning worksheet for the semester. This step involves the extensive use of data, including examining enrollment and course efficiency, and down to the meeting pattern (e.g., date and time of day), and delivery method (e.g., online and face-to-face). In addition to meeting efficiency and FTES targets and staying within the FTEF allocation, the department discusses how it is offering classes in a timely matter for program completion, including such topics of how it rotates low enrolled classes, electives, and capstone courses.

To help these discussions, program area maps were developed (see Table 3). For example, Table 3 is a program area map for a Computer Application & Office Technology major. It includes all awards and classes offered in a particular major. For each course, it provides curriculum information such as total course units, Taxonomy of Program (TOP) code, pre- and co-requisites, the GE areas that are covered, as well as, offerings, demand, and success rates for the last two years. More importantly, the map highlights for which awards a class is required or elective. Thus, it can be clearly seen the relevance of each course in relation to student success in program completion. Additionally, the maps include awards related information such as number of major units required for completion, TOP code, CTE, and number of completers for the last five years. Looking through the award lens one can see the relationship between the programs to help with course sequencing and to help students with stackable programs. All these discussions happen during the schedule planning meeting. It is important to add that the meeting covers the discussions for the entire academic year, all four terms (Summer, Fall, Winter, and Spring).

Innovation is supported within the scheduling process in two ways. First, new courses can be added to the schedule as long as the department works within its targeted allocation. When identifying new courses, departments provide evidence that the course will be successful and address a specific need. For example, the Math department successfully introduced its math statistics for non-STEM major courses while working with their allocation model.

In addition, while the schedule is built to achieve FTES and efficiency targets, flexibility exists within the process through the 10% FTEF allocation initially held back by the VPAA. When departments are interested in offering new or different electives, or offering classes with different methods of instruction, and demonstrate that their overall schedule meets the targets,



the VPAA uses discretionary FTEF to support the need. Discretionary allocation can also be used to increase course offerings targeted for specific student groups. For example, concurrent and dual-enrollment courses are “paid” for out of the 10% hold.

After each department completes their Schedule Planning worksheet, the Dean of IE meets with the VPAA to review the proposed schedule. Refinements are discussed with chairs and deans, changes are made as needed, and the schedule is then entered into the college’s information system. The college has 24 academic departments and the scheduling process from start to finish takes approximately eight weeks per term.

Outcomes and Effectiveness

For each year, the model has been in place, it has been reviewed by external evaluators appointed by the district’s chancellor. As a result, the college has received commendation for this practice. The process is transparent, and department chairs have reported that the scheduling tool makes it easy to evaluate how changes to the class schedule will affect the department’s allocation and efficiency metrics.

The scheduling practice has allowed the college to maintain its efficiency in the face of declining enrollments. In general, when enrollments drop, colleges typically experience a decrease in efficiency, as the tendency is to add more classes, which makes it even more difficult to fill classes. Consequently, it becomes more expensive to meet FTES targets as classes are added to increase FTES.

Table 1: Allocation Model

Allocation		250 FTEF			
Factor Distribution		H.FTEF 50%	Eff 30%	Succ 10%	

	Baseline Data				
	St. Hrs	FTEF	FTES	Eff	Avg CS
Business Administration	203	14	243	18.0	34
Chemistry	201	13	214	16.0	30
English	629	42	666	15.9	30
Kinesiology	193	13	186	14.4	27
Law	78	5	85	16.3	31
Life Sciences	198	13	280	21.2	40
Mathematics	678	45	846	18.7	35
Nursing	246	16	130	7.9	15
Philosophy	51	3	51	15.6	29
STEM	107	7	134	18.9	36
Psychology	173	12	203	17.6	33
Social Sciences	225	15	278	18.5	35
Theatre Arts	143	10	105	11.0	21
Visual Arts	129	9	133	15.5	29
Total	3497	233	3826	16.4	31

Model	FTEF			Expected		1 Y Change	
	Full T	Extra	Sp 18	Eff	FTES	%	N
13.5	7.8	0.1	13.5	18.0	244	0%	-
12.8	5.4		12.8	17.0	218	-4%	(0.57)
39.6	17.8		39.6	18.0	712	-6%	(2.36)
12.0	4.1		12.0	18.0	216	-7%	(0.86)
5.0	4.8	-	5.0	18.0	90	-4%	(0.22)
14.0	5.2	-	14.0	20.0	280	6%	0.81
44.3	23.4	0.9	45.2	20.0	903	0%	-
14.3	2.8	2.1	16.4	8.0	131	0%	-
3.2	3	-	3.2	17.0	54	-5%	(0.15)
7.3	1.5	-	7.3	19.0	140	3%	0.24
11.4	5	0.1	11.5	20.0	231	0%	-
14.9	8.5	0.1	15.0	20.0	300	0%	-
8.5	9.5	1.1	9.5	11.0	105	0%	-
8.2	2.5		8.2	16.0	131	-5%	(0.40)
225.0	106.8	4.3	229.3	17.6	4,043	-2%	(3.7)
Remain		20.7			362		
Total	250.0				4,405		



Table 2: Planning Tool

Spring 2018

Dept: Business Administration

	FTEF	St. Hours	FTEF	Efficiency	Sections	Avg Cl. Size
Allocation	13.80	207	249	18.04		34
Scheduled	13.80	207	273.59	19.83	63	37
Remaining	0.00	0.00	24.59			

Department	Subject	Course	Unit	Load	St. Hours	Last Term	Avg.Enr	Sect#	Reg	Online	Comb Hd
Business Administration	ACCTG	ACCTG 001	5	15	5	Spring 2017	46	5	4	2	
Business Administration	ACCTG	ACCTG 002	5	15	5	Spring 2017	48	3	2	2	
Business Administration	ACCTG	ACCTG 015	3	15	3	Spring 2016	26	1	0		
Business Administration	ACCTG	ACCTG 021	3	15	3	Spring 2017	19	2	2		3
Business Administration	ACCTG	ACCTG 022	3	15	3	Spring 2017	15	1	0		
Business Administration	ACCTG	ACCTG 023	3	15	3	Spring 2017	27	2	2		
Business Administration	ACCTG	ACCTG 027	3	15	4	Fall 2016	14	1	0		

Table 3: Sample Program Area Map

Program Area Map

(Enrl./Succ. - Data for 2 years, Summer 2016 - Spring 2018, Awards - 5 years)

Units	36 units	36 units	24 units	12 units	9 units
Awards	14	6	11	18	8
TOP Code	051400(CTE)	051403(CTE)	051400(CTE)	051401(CTE)	051402(CTE)

Computer Applications & Office Technologies

Course	Course Description	Unit	TOP Code	RAM Code	Enrl	Enrl	Avg. CS	Succ.	AA	AA	Certificate of Achievement	Skills Certificate	Skills Certificate	Prerequisites	Gé
CAOT 001	COMPUTER KEYBOARDING & DOCUMENT APPS I	3	051400	D	21	528	25	30%	REQUIRED	REQUIRED					
CAOT 002	COMPUTER KEYBOARDING & DOCUMENT APPS II	3	051400	D	8	110	14	59%	REQUIRED	Elect (3 of 6 unit)		Elect (3 of 6 unit)		CAOT 1	
CAOT 003	COMPUTER KEYBOARDING III	3	051400	C	4	36	9	75%	REQUIRED	Elect (3 of 6 unit)	REQUIRED	Elect (3 of 6 unit)		CAOT 2 & 084	
CAOT 031	BUSINESS ENGLISH	3	051400	C	7	130	19	55%	REQUIRED	REQUIRED					
CAOT 032	BUSINESS COMMUNICATIONS	3	051400	B	6	173	29	67%	REQUIRED	REQUIRED				English 101 & CAOT 31	
CAOT 033	RECORDS MANAGEMENT AND FILING	2	051400	C	1	15	15	47%							
CAOT 043	OFFICE PROCEDURES	3	051400	B					REQUIRED		REQUIRED	REQUIRED		CAOT 1 & 031	
CAOT 047	APPLIED OFFICE PRACTICE	2	051400	B										CAOT 1	
CAOT 079	WORD PROCESSING APPLICATIONS	3	051400	C	2	36	18	53%	Elect (3 of 6 unit)	REQUIRED	Elect (3 of 6 unit)			CAOT 084, 031 & 082	
CAOT 082	MICROCOMP SOFTWARE SURVEY IN THE OFFICE	3	051400	D	5	108	22	54%		REQUIRED			REQUIRED	CAOT 1 & 098	
CAOT 084	MICROCOMPUTER OFFICE APPS: WORD PROCESSING	3	051400	D					REQUIRED	REQUIRED	REQUIRED	REQUIRED			
CAOT 085	MICROCOMPUTER OFFICE APPS: SPREADSHEET	3	051400	C	4	87	22	47%	REQUIRED	REQUIRED	REQUIRED	REQUIRED			
CAOT 088	MICROCOMPUTER OFFICE APPLICATIONS: DESKTOP	3	051400	C	1	16	16	50%	REQUIRED	REQUIRED	REQUIRED				
CAOT 097	INTERNET FOR BUSINESS	3	051400	C					REQUIRED	REQUIRED	REQUIRED		REQUIRED		
CAOT 098	MICROCOMPUTER OFFICE APPLICATIONS: DISCOVER	3	051400	C					REQUIRED	REQUIRED	REQUIRED		REQUIRED		
CAOT 112	MICROCOMPUTER OFFICE APPLICATIONS: WEB PAGE	3	051400	C					Elect (3 of 6 unit)	REQUIRED	Elect (3 of 6 unit)				

Appendix A

CALIFORNIA COMMUNITY COLLEGES' GUIDED PATHWAYS GRANT TRAILER BILL

CCCs Guided Pathways Grant Trailer Bill Language California Community College Guided Pathways Program (Adds Education Code Sections 88920-88922)

Sec. 1. Part 54.9. California Community College Guided Pathways Grant Program 88920.

a. The Legislature finds and declares all of the following:

1. Students are more likely to graduate on time if they identify a major early on, have a clear outline of the courses required for completion, and are provided consistent ongoing guidance and support throughout their program of study;
2. California has made investments to improve student outcomes at community colleges through providing student intake and guidance services, requiring colleges to focus on closing achievement gaps, improving basic skills instruction and placements, providing enhanced student services for remedial students, and streamlining and simplifying the transfer process;
3. Providing community colleges with strategic, one-time state investments and technical assistance will enable colleges to integrate existing success-focused programs and provide students with predictable course schedules and frequent feedback and support services to ensure students can complete their academic programs more efficiently.

b. It is the intent of the Legislature that community colleges integrate existing student success programs and implement an institution-wide approach to student success based on the guided pathways model, including, but not limited to:

1. Clarifying pathways to student end goals by simplifying student choices with program maps, and establishing transfer pathways with four-year institutions.
2. Helping students choose and enter a pathway by creating stronger bridges from high school to community college, changing remediation instruction to better integrate student's program of study, and supporting students as they explore academic and career options.
3. Helping students stay on a pathway by embedding advising, academic, and other supports in the pathway, monitoring student progress, and intervening when students are off track.
4. Supporting student learning by establishing program-level learning outcomes aligned with student goals for transfer or employment, integrating applied learning experiences within the pathway, and incorporating effective teaching practices throughout the pathway.

88921.

- a. There is hereby established the California Community College Guided Pathways Grant Program to be administered by the Chancellor of the California Community Colleges. The grants are intended to ensure integration of existing programs and services and to build capacity at the community colleges to develop clearly structured, coherent program pathways.
- b. For purposes of this part, "chancellor's office" means the Office of the Chancellor of the California Community Colleges.
- c. The chancellor's office shall distribute grants, upon appropriation by the Legislature, to community colleges that satisfy the requirements of this part and any programmatic criteria, administrative guidelines, and other requirements developed by the chancellor's office.

88922.

- a. (a) From the funds provided for this purpose, the Board of Governors of the California Community Colleges shall allocate:
 1. An amount up to 10 percent for statewide assistance and programmatic support to carry out the intent of this Part.
 2. All other funds shall be allocated as grants to community colleges that satisfy the requirements of this part and any California Community College Guided Pathways Grant Program programmatic criteria, administrative guidelines, and other requirements developed by the chancellor's office.
- b. The chancellor's office shall allocate grant funds as follows:
 1. 20 percent of the total allocation shall be distributed equally among all participating colleges.
 2. 35 percent of the total allocation shall be distributed based on the percentage of fulltime equivalent students at each participating college.
 3. 45 percent of the total allocation shall be distributed based on the percentage of students at each participating college that would qualify to receive federal Pell Grants, including students meeting the requirements set forth in Education Code Section 68130.5.
 4. Notwithstanding paragraphs (1), (2), and (3), the chancellor's office may include other measures or adjust the allocation percentages to accomplish the objectives of this subdivision.
 5. The chancellor shall notify and receive concurrence from the Department of Finance, prior to including additional measures or adjusting the allocation percentages pursuant to paragraph (4) and prior to apportioning these funds to community college districts. The Department of Finance shall consult with the Legislative Analyst's Office prior to determining whether to concur with the use of additional measures or adjusting the allocation percentages.
 6. The Director of Finance shall notify the Joint Legislative Budget Committee of his or her intent to concur with the use of additional measures or adjust the allocation percentages pursuant to paragraphs (4) and (5)."

- c. Prior to the chancellor's office apportioning funding to a community college, a community college shall demonstrate their commitment towards implementing a guided pathways framework by completing the following:
 - 1. Submission of a signed letter to the chancellor's office expressing a commitment from the president of the governing board, the chief executive officer, and the president of the academic senate to adopt a guided pathways model.
 - 2. Notification that the community college has attended an Institutional Effectiveness Partnership Initiative workshop for guided pathways. The chancellor's office shall ensure that community college representatives have sufficient access to an Institutional Effectiveness Partnership Initiative workshop for guided pathways.
 - 3. An implementation plan outlining the community college's commitment to implement a guided pathways program and integrate existing student-success programs, including, but not limited to, the Student Success and Student Support Program, Student Equity Program, Basic Skills Initiative, Strong Workforce Program, and the Adult Education Block Grant.
- d. If the chancellor's office determines that a community college has not sufficiently met the requirements of subdivision (c), the college may access any available technical assistance opportunities and may subsequently revise and resubmit the documentation required pursuant to subdivision (c).
- e. To the extent feasible, the chancellor's office shall leverage the process already underway through the California Guided Pathways Project, including, but not limited to the application, participation agreement, professional development, and technical assistance models.
- f. The chancellor shall report to the Director of Finance and the Legislature on the following:
 - 1. The allocation of funds by July 1, 2018.
 - 2. A summary of the approved plans by July 1, 2019.
 - 3. A summary of follow-up reports on July 1, 2020, July 1, 2021, and July 1, 2022, summarizing each district's progress toward implementing their approved plan.
 - 4. Each of the reports in subparagraph (f) shall include any statutory and regulatory changes necessary to improve the ability for community colleges to implement locally develop guided pathways.

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)