



OAKLAND COMMUNITY COLLEGE™
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INFORMATION

Board Agenda Item 6.2
April 23, 2019

CAREER AND TECHNICAL EDUCATION MONITORING REPORT

Table of Contents

Background.....	3
Performance Area: Recruitment and Enrollment.....	4
Performance Area: Quality Curriculum.....	6
Performance Area: Academic Progress.....	8
Performance Area: Goal Attainment.....	10
Appendix.....	12
Section 1: Programs with External Accreditation (17).....	12
Section 2: Programs with State Perkins Approval (50).....	13
Section 3: Current and Potential CTE Actions.....	15
Addendum Introduction.....	17
Enrollment Capacity.....	17
Seat Fill Rate Trends.....	17
2017-18 Seat Fill Rates by Division.....	18
2017-18 Seat Fill Rates by CTE/Transfer Split.....	18
Seat Fill Rate by Course Type.....	19
Seat Fill Benchmarks.....	20
2017-18 Seat Fill Rates by Discipline.....	21
Division Planning.....	25
Process Summary.....	25
Status by Division.....	26
Action Strategy Implementation.....	27
Program Enrollment Trends – Peer Comparison.....	28
Endnotes.....	29

Background

In its Ends policy on College Purpose (4.1), The Oakland Community College Board of Trustees identifies six critical services that the College shall provide to the Community. These services include career, technical, and transfer programming, workforce training and continuing education, as well as college readiness and student service programming. In addition, the Board has identified accreditation (4.4) and diversity (4.5) as essential elements for supporting the achievement of the College's Purposes.

In carrying out its oversight responsibility, the Board reviews a series of monitoring reports which evaluate College performance in broad operational areas considered critical to the attainment of the Board's Ends. Monitoring reports provide the Board with a comprehensive and consistent evaluative framework to assess overall institutional effectiveness and allow for a more coherent approach to making decisions related to the College's strategic direction, the prioritization of performance improvement initiatives, and the allocation of resources.

[Policy 4.1](#) in part states that professional, career-oriented courses and programs designed to prepare students for entry-level employment and apprenticeships are an essential service. Students receive value by engaging in the College's career and technical education courses and programs, which are designed to prepare them for direct entry-level employment in the workplace or for an industry-recognized apprenticeship. Students benefit from relevant and evolving curriculum that is informed by input from employers, educational partners, and economic development professionals. Students are well positioned for future job growth when their professional coursework and program align with advanced professional degrees at other colleges and universities. This alignment clarifies the transfer pathway, reduces the time spent obtaining advanced professional degrees, increases career flexibility and mobility, and potentially limits student loan debt.

Employers benefit from a supply of employees who possess the knowledge, skills, and abilities needed to succeed. Employers receive value from an agile and skilled workforce that brings new ideas and creativity to a rapidly changing market and work environment.

In accordance with Board [Policy 4.3](#), this monitoring report provides an analysis of key performance indicators, an examination of operational policies and procedures, consideration of external factors impacting college performance, as well as a description of initiatives designed to build on best practices and improve overall college effectiveness.

Within the context of this policy four critical measures of performance have been identified:

- Recruitment and Enrollment
- Quality Curriculum
- Academic Progress
- Goal Attainment

Performance Area: Recruitment and Enrollment

The College elects to submit annual data to the VFA, or [Voluntary Framework of Accountability](#), which is a national system of accountability metrics via the American Association of Community Colleges (AACC). This framework includes data reports on Career and Technical Education (CTE) enrollment and degree completion. In 2015-16, a total of 12,788 students¹ enrolled in CTE credit-based courses, which represents 39% of the total credit enrollment at OCC for that academic year (33,053). CTE programs and courses are a major part of the educational offerings at OCC and they prepare students for work within high-demand fields with good wages. They connect students with skilled career opportunities and respond to the economic needs and growth potential of the county.

Enrollment in Career and Technical Education is impacted by several internal and external factors. For one, despite strong job and salary opportunities available in the skilled trades, high school students and their parents tend to maintain a negative perception of these occupations. Due to traditional, outdated social perceptions, it's challenging to encourage parents and students to consider these lucrative career options when compared to a university education which is more expensive and sometimes less job-oriented. In recent years, many CTE occupations have evolved into advanced technological fields that require specialized skills, education, and training. However, people remain apprehensive about skilled trade careers in part due to their memory of the great recession and its negative impact on those fields. Additionally, with a stronger economy now, families are more able to afford a four-year university tuition and may overlook the many affordable, job-oriented options that OCC provides.

Community college programs offer an accessible path to challenging, rewarding careers in a wide variety of professional fields. The community already has a positive perception of career possibilities within Nursing and allied health professions. Other CTE programs at the College offer a similar benefit of career opportunities and increased earnings. The manufacturing sector has evolved to include computerized technology, robotics, and sophisticated machinery. Information Technology (IT) has expanded into Computer Information Systems, including cybersecurity, software engineering, business systems analysis and other essential roles for our highly technological, interconnected world. Creative careers in the culinary fields and graphic design as well as essential social services such as law enforcement and early childhood education also represent CTE fields with rewarding careers that strongly impact our communities.

While OCC offers affordable, accessible paths to a wide variety of CTE professions, the College faces competition from for-profit and private institutions. In some cases, these institutions are more expensive and their academic, graduation, and employment outcomes may not be as strong. However, they recruit intensely and they offer students fast, flexible programs that may not be as rigorous as those of an accredited public institution such as OCC. OCC must comply with a wide range of federal and state requirements, along with accreditation standards, which limit to some extent the flexibility of timelines and academic requirements, but provide students with a high-quality education and credentials that matter for future success.

Finally, the College continues to foster partnerships with companies, schools, and non-profit organizations, to offer CTE opportunities via both credit-based credentials and training through Workforce and Continuing Education. In many cases, CTE students may be employed full-time

and take just a couple courses at OCC to improve skills for work. While this goal is sufficient in some cases, in other cases workers can benefit from shorter certificates or other stackable credentials that align closely with the professional standards or other certification requirements of an industry. Further, engagement of high school students through early college and dual enrollment helps expose them to career options available within CTE, and develops their relationship and experience with OCC. These connections will continue to grow via the work of the Director of Secondary Partnerships. These efforts increase the College's success in alignment with strategic initiatives to [grow partnerships, enhance and innovate educational offerings, and guide students to their desired outcomes](#), in addition to helping them explore and define possible educational and professional goals.

Performance Area: Quality Curriculum

Measurement of quality curriculum in the career and technical courses and programs at OCC relies on both internal and external components. Within the College, the assessment of student learning outcomes helps measure academic quality and consistency. Through assessment, faculty define the most important knowledge, skills, and abilities that students should attain in every course and program, then measure student performance on those learning outcomes on a cyclical basis to determine their success. The results help faculty identify where actions to improve student learning are required, lead to curricular changes, and pinpoint pedagogical best practices. They improve consistency of student learning across campuses, sections, and modes of delivery (online, hybrid, and face-to-face). The assessment process also helps programs and disciplines propose improvements to instructional materials or equipment, providing important data to inform the budgetary and operational planning processes of the College. Implementing actions and measuring their impact creates a process of continuous improvement and fulfills crucial components of the [Higher Learning Commission \(HLC\) Criteria](#) for accreditation.

In the 2016-17 academic year, 1,496 career and technical course benchmarks were scheduled for assessment in courses that successfully ran. Of those, 1,083 had assessment results submitted (72%). For those with assessment results, 1,031 (95%) met or exceeded the benchmark for student learning. In the following academic year, 2017-18, 1,404 career and technical course benchmarks were scheduled for assessment in courses that ran. Of those, 1,027 had assessment results (73%) and 985 met or exceeded the benchmark (96%).

Assessment results in career and technical courses can tend to be higher than those of other courses at the College for a number of reasons. For programs with an external licensure component, it is especially important for students to attain the necessary skills and abilities. For instance, in Nursing and the Health professions, student competencies are essential for successful licensure and safe patient care. Technical fields, such as Welding, require that students show mastery of tasks and techniques in order to achieve the necessary skills to pass the course. Finally, for the programs at the College with [external accreditation](#), assessment is often tied to their accreditation requirements and the nature of their professions requires that students achieve at a high level on core learning outcomes. For these reasons, in some cases in CTE courses the assessment is set up as a pass/fail. Students need to succeed on essential concepts and tasks in order to continue to more advanced work and techniques.

When benchmarks for student learning are not met, faculty create actions for improvement. From Fall 2016 through Fall 2018, student learning assessment at OCC resulted in 380 action strategies. These actions, at both the program and course level, use data of student learning to propose improvements to pedagogy, curriculum, related instructional matters, and the assessment process itself. Through ARTIS (the Assessment Results Tracking Information System), actions are tracked to monitor improvement on student learning over time. Through this process, faculty have common conversations on the learning that occurs throughout various programs, disciplines, campuses, course sections, meeting times, delivery methods, etc. Faculty critically examine what pedagogical methods are most successful to help students attain the knowledge, skills, and abilities of a particular field. In the case of career and technical education, the cycle of student learning assessment helps programs meet [external accreditation](#) requirements and

professional standards, by providing an ongoing structure for the establishment and measurement of learning outcomes required by the profession or career.

Further, the ongoing cyclical curriculum review process at the College helps to evaluate and improve educational quality and student success in completing CTE programs. Among 78 currently active CTE programs, 54% (43) had at least 20 or more students complete the program over a three-year period from 2015-2018. In total, 4,967 CTE degrees were attained by students in that timeframe.

Since 2015, 47 action strategies have been created through curriculum review processes in CTE programs. Many actions aim to improve curriculum, assessment, program completeability, and course sequencing. Some involve applying for [external accreditation](#), increasing articulation agreements, or expanding early college recruitment and enrollment. A few programs propose innovative strategies to increase student success. One health program plans to create a board review course that fully prepares students for the professional licensing examination. Another program wants to revise program plans to include a winter start, summer start, three-year, four-year and six-year plan (with evening only options as well), to meet diverse student attendance needs. Another academic area plans to add milestones and outreach at key points in their program to encourage student persistence and completion. Curriculum review as a cyclical process allows programs and disciplines to take a comprehensive look at how their curriculum contributes to student success. Their actions are driven by data analysis and trends. The outcomes of this process can be considered for larger planning and budgetary purposes as well.

As evidenced by data explored further in this report, alignment of curricula with external standards, professional organizations, and formal certifications and licensure increases academic quality and student performance. Unsurprisingly, students in programs that directly prepare them for a credential that is essential for their chosen career are more likely to persist and complete the degree and external assessment, where applicable.

Via the [Carl D. Perkins Career and Technical Education Improvement Act of 2006](#) (federal legislation first authorized in 1984), the State encourages the academic achievement of career and technical education students. Perkins services and associated funding are intended to promote programs that prepare students for high-skill, high-wage, and high-demand careers. The Act also provides support for special populations, to help students with access and success in CTE programs, such as those with disabilities, those from economically disadvantaged families, single parents, students pursuing careers in which their gender is underrepresented, and others.

When CTE programs undergo the intensive process of becoming approved by the State, they can access Perkins funding. Currently, OCC has [fifty programs approved](#) by the State and an additional [eight programs](#) applying (within Collision Auto Repair, Emergency Medical Services, Police and Fire Academies, and the Criminal Justice Generalist degree that the College also offers online). Approved programs in Public Services rely on Perkins funding to purchase large equipment that students require for training. Once current applications are completed and approved, all Public Services programs can benefit from Perkins support and funding.

The efforts described in this section propel the College to [improve the student experience and enhance utilization of people, processes, and technology](#) in our vital CTE programs.

Performance Area: Academic Progress

As part of the annual reporting required by Perkins for CTE programs, the College submits performance data to the State on student retention in postsecondary education, whether through further enrollment at OCC or transfer to another institution. In 2016-17, 66.6% of students were retained at a college or university and in 2017-18 that rate rose to 68.0%.ⁱⁱ Both rates exceed the State benchmark of 63.9% for this metric. During College forum discussions and analysis of Perkins data, it was also found that student performance is higher for applicant-based programs and those aligned with external credentials. Applicant-based programs are those that have admissions requirements in addition to those of the College, which may include an orientation, prerequisites, testing, interviews, and sometimes a competitive selection process. Programs aligned with external credentials are those where the relevant industry involves a certification, licensure, professional examination, or similar mechanism for verifying the professional competencies and abilities of its practitioners. In 2017-18 at OCC, 87.3% of students from applicant-based CTE programsⁱⁱⁱ were retained in higher education. For programs aligned with external credentials,^{iv} 80.3% of students continued to enroll.

There are a number of possible reasons why students in applicant-based and externally-aligned programs have a higher retention rate. First, some applicant-based programs have competitive admissions processes that select students most likely to succeed. Even for applicant-based programs that allow most interested students to enroll, there are required prerequisites or, at minimum, a required orientation session that ensures students understand the nature of the program and field, and make an informed choice to pursue it. Students in CTE programs can tend to have a more direct academic and career path than those enrolled in the arts and sciences to obtain a general degree or transfer credits. Particularly in the case of applicant-based programs, they are part of a student cohort that provides peer support and encouragement throughout the degree. When there is an external credential required for work within a field (such as a professional licensure or certification) and the OCC program curriculum is closely aligned with it, students are especially motivated to continue their studies and gain the full knowledge and experience to successfully attain the professional credential.

On the other hand, there are some fields and industries that do not require a specific credential, or that are more skills-based in nature. Students can take just those courses they need to gain skills, then use them to pursue employment rather than continue with the degree. These factors vary by program and whether a specific discipline or technical area of study has accreditation, licensure, or certification tied to the degree. While program completion can lead to a more well-rounded individual and more versatile employee, the incentive for completion is not always as clear or as strong when there is not an external credential guiding the curriculum and acting as a gateway to the profession.

That said, employers and skilled trade unions increasingly stress the need for life skills in the employees they hire. They want to see individuals who not only have the necessary preparation and technical skills but who are also motivated, dependable, personable, and function as team players. Through higher education, and particularly [general education outcomes](#), OCC exposes students to skills that go beyond technical proficiency to include critical thinking, effective communication, information literacy, personal development, etc.

Logistical aspects also impact student retention and academic progress. Program length matters, as does course sequence, faculty engagement, student connection with the institution and a peer group, etc. For students who attend a course or two at a time, perhaps at night, on the weekends or online, it can be challenging to develop a sense of belonging and identity with the College. That said, OCC provides a tremendous resource for people in the community who want to gain skills or pursue a career while juggling work, family, and life responsibilities. In recent years, OCC has conducted substantial analysis and made changes to course scheduling in order to help shorten the time required for program completion. Student needs for scheduling vary widely and with many different sub-groups to satisfy, no one solution will work for all (needs vary by age, working hours, family responsibilities, personal preference, etc.) However, by thoroughly understanding our diverse range of students, we can better help them define and achieve their academic and professional goals through the wide range of CTE courses and programs available at OCC. Through these efforts, the College helps to [increase persistence and completion, and guide students to their desired outcomes.](#)

Performance Area: Goal Attainment

CTE students attend OCC with a wide variety of academic and professional goals, from taking one or more courses to improve skills, to transfer to another institution, to completion of a degree or certificate. In the case of CTE reporting, as in other areas, the structure of how student goal attainment is measured does not fully account for the range of students that attend a community college and their purpose for doing so. Reporting metrics, as currently defined, prioritize students who enter the institution with a clear goal in mind, then attend full-time or on a consistent part-time basis to either earn a credential or follow a pre-determined plan for transfer to a four-year college or university. Yet a fundamental part of a community college's mission is its accessibility and flexibility for the needs of its surrounding population. As an individual's academic and career goals evolve, the college is able to meet those needs. As life circumstances, work obligations, family responsibilities, health challenges, and other factors place constraints on options for meeting personal and career goals, the community college provides education and training to succeed that fits into the complex lives of its students. For the working professional wanting to gain additional skills, the completion of a course or two signifies goal attainment, although that individual will not be counted as a "completion" as traditional reporting defines it. Similarly, for students that attend the college in order to become employed, taking a series of courses without completing a full credential can lead them to successfully attain that goal.

The VFA reporting uses data from [IPEDs \(the Integrated Postsecondary Education Data System\)](#) of the U.S. Department of Education's National Center of Education Statistics) to track CTE degree completions reported by the College. For 2015-16^v, that data shows the following attainment of CTE credentials at OCC:

CTE Associate Degrees Awarded	987
Certificates Completed (One Year or Over)	181
Certificates Completed (Less Than One Year)	252
Total CTE Credit Credentials Earned	1,420

Based on Perkins data submitted for the 2016-17 reporting year, 94.88% of CTE concentrators at OCC who took a third-party technical skills assessment aligned with industry-recognized standards (such as the [National Council Licensure Examination for Registered Nurses, or NCLEX-RN](#)) successfully passed it.^{vi} In 2017-18, this rate held at 94.0%. Both rates exceed the state benchmark of 82.57%. When looking solely at applicant-based programs, in 2017-18 that rate of success rises to 95.2%. For students that left higher education as of 2016-17, 24.5% of them earned a degree, certificate, or third-party credential.^{vii} In 2017-18, that rate rose to 27.1%. While trending upward, these rates fell short of the state benchmark of 27.9%, so OCC is implementing a local improvement plan containing the following four strategies:

1. Develop program plans for first-time part-time students
2. Expand partnership with National Coalition of Certification Centers (NC3) to incorporate more 3rd party credentials into occupational programs.
3. Incorporate (Perkins) Core Indicators into the college's cyclical curriculum review process with required action strategies when program fails to meet benchmark.
4. Review Technological Sciences program and evaluate the extent to which the program is decreasing Perkins-funded occupational programs graduation rates.

However, when looking at this metric for students in programs aligned with external credentials, the rate of attainment rises to 47.3% in 2017-18. When focusing on students in applicant-based programs in that year, the number goes even higher to 68.5%. In some cases, as mentioned previously, a student's goal may be to take a few classes to increase skills or to transfer, or the student's field or desired job may not require the credential in order to gain employment and good wages, factors that provide an important context to the data.

When considering employment as the goal, the CTE students at OCC who leave higher education successfully obtained employment in 2016-17. Overall, 87.5% of students were employed,^{viii} exceeding the state benchmark of 79.3%. In 2017-18, that rate rose to 93.3%.

Even if the student's field or job does not require the degree and mainly rewards the skills and preparation that can be gained from course completion alone, students can still benefit over the span of their careers from earning a college degree. For this reason, it can be useful to help students at the College for shorter-term goals to earn credentials for which they qualify or are close to attaining. In some cases, students may already meet the requirements to earn a Certificate on the way to an Associate's degree and not know it. In other cases, students may need only one or two more classes to complete one. Greater tracking and outreach in such cases could potentially be helpful to students and the College. Completing a college credential can positively impact a student's lifetime earnings, long-term career prospects, and possibly motivation for further education.

As noted previously, Career and Technical Education involves a large, diverse set of programs and courses that range from Interior Design to Welding, from Business to Collision Auto Repair. Each of these programs and their students have a unique set of requirements and context for student success, but all prepare OCC students for valuable careers that benefit both the student and community. The Health programs and Public Services often benefit from selective or restricted admissions, program orientations, cohorts of students, strong alignment with professional organizations, clear career pathways in high-demand fields, specific requirements of licensure and certification exams, etc. Other CTE programs offer rigorous, relevant, high-quality curricula, but rely on one full-time faculty member and adjunct staffing to manage all aspects of a program and support its students. An overall examination of CTE at OCC highlights several areas of the College's strengths and challenges. Through the forums involved in establishing and implementing a set of performance indicators for the College, faculty and staff at OCC can continue to engage in meaningful conversations around data across the institution, to deepen understanding, build awareness, and drive improvement in Career and Technical Education and in the College as a whole.

Appendix

Section 1: Programs with External Accreditation (17)

17 total programs in 13 academic areas:

Police Academy (CRJ.OPA.CA)
Culinary Arts (CUL.AASX) and Baking and Pastry Arts Certificate (CUL.BPA.CT)
Dental Hygiene (DHY.AASX)
Diagnostic Medical Sonography (DMS.AASX)
Emergency Medical Services (EMS.AAS)
and EMT (EMS.EMT.CA) and Paramedic Certificate (EMS.PAR.CT)
Fire Academy (FFT.CA)
Medical Assisting Certificate (MDA.CT)
Nursing (NUR.AASX, both traditional and transitional tracks)
Paralegal (PLG.AAS) and Post Baccalaureate Professional Certificate (PLG.CT)
Radiologic Technology (Extended) (RAL.AASX)
Respiratory Therapy (RSP.AASX)
Sign Language Interpreter (SLI.AAS)
Surgical Technology (SUR.AASX)

Programs In Process of Seeking External Accreditation (7):

Automobile Servicing (AUS.AAS)
Automobile Servicing Certificate (AUS.CT)
Collision Auto Repair: Non-Struct Repair Tech Certificate (CAR.NRT.CT)
Detailer / Painter Assistant (CAR.PRT.CA)
Collision Auto Repair: Paint & Refinish Tech Certificate (CAR.PRT.CT)
Library Technician (LBT.AAS)
Library Technician Certificate (LBT.CT)

Section 2: Programs with State Perkins Approval (50)

Automobile Servicing (AUS.AAS)
Automobile Servicing (AUS.CT)
CAD Computer Aided Engineering Tech (CAD.CAE.AAS)
CAD-Computer Aided Engineering Tech (CAD.CAE.CT)
CAD-Level I (Fundamentals) (CAD.LV1.CA)
CAD-Level II (Intermediate) (CAD.LV2.CT)
CAD-Product Design Option (CAD.PDO.AAS)
CAD Product Design Certificate (CAD.PDO.CT)
CAD-Vehicle Design Option (CAD.VDO.AAS)
CAD-Vehicle Design Option (CAD.VDO.CT)
CIS-Software Engineering (CIS.SWE.AAS)
CIS-Software Engineering Certificate (CIS.SWE.CT)
Construction Management (CMN.AAS)
Construction Management (CMN.CT)
CRJ-Corrections (CRJ.CRO.AAS)
CRJ-Law Enforcement (CRJ.LAW.AAS)
CRJ-Police Evidence Technology (CRJ.PET.AAS)
Culinary Arts (CUL.AASX)
Hotel/Motel Management (CUL.HMM.AAS)
CUL-Restaurant Management (CUL.RMP.AAS)
Dental Hygiene (DHY.AASX)
Diagnostic Medical Sonography (DMS.AASX)
Early Childhood Education (ECE.AAS)
Emergency Medical Services (EMS.AAS)
Fire Fighter Technology (FFT.AAS)
Graphic Design (GRD.AAS)
Health Care Administration (HCA.AAS)
Health Care Administration (HCA.CT)
HVAC/R Systems Technology - Air Conditioning (HVA.HVC.CT)
HVAC/R Systems Technology - Heating (HVA.HVH.CT)
HVAC/R Systems Technology - Refrigeration (HVA.HVR.CT)
Heating, Ventilation, Air Conditioning and Refrigeration Technician Option (HVA.HVT.AAS)
Library Technician (LBT.AAS)
Library Technician (LBT.CT)
Medical Assisting (MDA.AAS)
Medical Assisting (MDA.CT)
Business Management(MGT.BUS.AAS)
Mental Health/Social Work (MHS.AAS)
MTT-Numerical Control (MTT.CNC.AAS)
MTT-Numerical Control (MTT.CNC.CT)
Nursing (NUR.AASX)
Photographic Technology (PHT.AAS)
Photographic Technology (PHT.CT)
Radiologic Technology (RAL.AASX)
Robotics-Automated Systems Tech (ROB.AUT.AAS)
Robotics-Automated Systems Technology (ROB.AUT.CT)
Robotics-Programmable Controllers (ROB.PCT.CA)

Respiratory Therapy (RSP.AASX)
Sign Language Interpreter Program (SLI.AAS)
Welding Technology (WEL.CT)

Programs Seeking State Perkins Approval (8):

CAR-Non-Structural Repair Technology (CAR.NRT.CT)
CAR-Detailer/Painter Assistant (CAR.PRT.CA)
CAR-Paint & Refinish Technology (CAR.PRT.CT)
Criminal Justice-Generalist (CRJ.GEN.AAS), one of OCC's two online programs
EMS Paramedic Certificate (EMS.PAR.CT)
EMS EMT Certificate (EMS.EMT.CA)
Oakland Police Academy
Oakland Fire Academy

Section 3: Current and Potential CTE Actions

Through the process of gathering data and holding forum discussions with content area experts, a number of proposed actions arose. A list of potential actions will be maintained so they can be considered as a whole and prioritized according to the work and strategic initiatives of the College.

Actions in Process:

1. Continue to apply for State/Perkins approval, to expand CTE funding opportunities.
2. Continue to encourage alignment with external credentials/external accreditation, to improve curriculum and student outcomes.
3. Grow student and parent awareness of CTE careers and corresponding programs at OCC via Director of Secondary Partnerships and Dual Enrollment, Oakland Early Technical College, etc.

Actions under Consideration:

1. Research CTE retention and academic success by program, course delivery method, and/or term length. Investigate transfer and/or employment outcomes of CTE students.
2. Investigate what students qualify to earn certificates on their way to an Associate's degree or transfer goal. Encourage students that are close to completing a credential to finish.

Addendum to Monitoring Reports:
Capacity Analysis, Division Planning,
and Comparative Program Enrollment

Addendum Table of Contents

Addendum Introduction	17
Enrollment Capacity.....	17
Seat Fill Rate Trends.....	17
2017-18 Seat Fill Rates by Division	18
2017-18 Seat Fill Rates by CTE/Transfer Split	18
Seat Fill Rate by Course Type.....	19
Seat Fill Benchmarks	20
2017-18 Seat Fill Rates by Discipline.....	21
Division Planning.....	25
Process Summary.....	25
Status by Division.....	26
Action Strategy Implementation.....	27
Program Enrollment Trends – Peer Comparison	28

Addendum Introduction

Both qualitative and quantitative components influence how planning occurs at OCC, at the level of programs, disciplines, divisions, and the College as a whole. [Division planning](#) is a comprehensive process that synthesizes data and information from multiple sources to gauge each program's community need, faculty staffing, student academic progress and goal attainment, and student employment outcomes. This process results in actions for improvement that are ranked according to priority. The in-depth review of programs helps to inform enrollment capacity and how courses are scheduled to meet the needs of students, employers, and the community.

Enrollment Capacity

Various components impact the capacity of a course or program to enroll students. From an internal perspective, faculty staffing, availability of facilities and equipment, and course sequencing all play a role. Externally, enrollment is significantly influenced by community need and demand within the local economy, the unemployment rate, and competition from other institutions. In specific programs, particularly within the health professions, enrollment is limited by the availability of clinical placements and by faculty to student ratios required by external accreditation, to maintain high standards of professional preparation.

One way to consider enrollment capacity that takes into account several of these variables is the seat fill rate. Of the total possible seats in scheduled sections, how many are filled with students who not only register, but attend the course? Data can be viewed via overall trends, as well as analyzed at the level of the division or primary course function, whether career and technical education (CTE) or transfer. Extensive processes go into shaping the curriculum and course scheduling, including division planning, curriculum review, analysis of staffing, and other studies that lead to data-informed practices. For the purposes of setting benchmarks for action, disciplines and programs with a seat fill rate under 50% have High priority for improvement, those with 50%-80% Medium priority, and those over 80% Low priority since they already exceed the target.

Seat Fill Rate Trends

The tables below depict the overall attainment of each seat fill rate level by discipline. For example, in 2017-18, out of 71 disciplines (ENG, MAT, etc.), 60 of them (84.5%) met or exceeded the 50% seat fill rate based on total course enrollment out of scheduled seats. This fill rate helps meet course section size requirements as informed by the State.

Year	50-100% Seat Fill
2017-18	84.5% (60/71 disciplines)
2016-17	89.2% (66/74 disciplines)
2015-16	95.9% (71/74 disciplines)
2014-15	94.4% (68/72 disciplines)

For the purposes of analysis in this report, it is helpful to see seat fill rates as a continuum, where efforts are continually made to push disciplines up into the next range.

Year	0-50% Seat Fill	50-80% Seat Fill	80-100% Seat Fill
2017-18	15.5% (11/71 disciplines)	32.4% (23/71 disciplines)	52.1% (37/71 disciplines)
2016-17	10.8% (8/74 disciplines)	40.5% (30/74 disciplines)	48.6% (36/74 disciplines)
2015-16	4.1% (3/74 disciplines)	54.1% (40/74 disciplines)	41.9% (31/74 disciplines)
2014-15	5.6% (4/72 disciplines)	50.0% (36/72 disciplines)	44.4% (32/72 disciplines)

2017-18 Seat Fill Rates by Division

Division	Number of Disciplines	CTE Disc.	Transfer Disc.	0-50% Seat Fill	50-80% Seat Fill	80-100% Seat Fill
Math, Natural & Life Sci.	6	0	6	0 (0.0%)	0 (0.0%)	6 (100.0%)
Comm., Arts & Hum.	18	5	13	0 (0.0%)	4 (22.2%)	14 (77.8%)
Social Sciences	10	2	8	0 (0.0%)	3 (30.0%)	7 (70.0%)
College Readiness	2	0	2	0 (0.0%)	1 (50.0%)	1 (50.0%)
Business & IT	5	2	3	1 (20.0%)	2 (40.0%)	2 (40.0%)
EMIT	16	15	1	4 (25.0%)	7 (43.8%)	5 (31.3%)
Public Services	4	4	0	1 (25%)	2 (50.0%)	1 (25.0%)
Health Professions	9	9	0	4 (44.4%)	4 (44.4%)	1 (11.1%)
Learning Resources	1	1	0	1 (100%)	0 (0.0%)	0 (0.0%)
Total	71	38	33	11 (15.5%)	23 (32.4%)	37 (52.1%)

2017-18 Seat Fill Rates by CTE/Transfer Split

	Seat Count	Course Sections	Average Section Size	Average Seat Fill Rate
CTE	17,268 (17.9%)	941	18.4	71.7%
Transfer	78,983 (82.1%)	3,302	23.9	87.4%
Total	96,251	4,243	22.7	84.1%

In reviewing the data on seat fill rates, it is useful to consider those courses that are primarily career and technical education (CTE) and those that are primarily transfer. While students can use certain courses for either credit transfer or job preparation, courses and programs are designed with a primary function in mind. In looking at student enrollment this way, the transfer courses, as a whole, have a higher seat fill rate. For one, many of these courses meet general education requirements and/or are part of the [Michigan Transfer Agreement \(MTA\)](#), which encourages a higher level of consistent enrollment. These general requirements form the basis of both OCC's general and technical degrees, so the demand for them is naturally greater and the seat fill rates tend to be higher. In other words, CTE students take transfer courses as part of their program requirements, but the reverse is not true. All students need courses in Communication/English, Fine Arts/Humanities, Mathematics/Science, and Social Science in order to earn an Associate's degree, while CTE course enrollment is more focused on

students completing the specialized technical requirements designed specifically for those degrees and industries.

Further, schedule optimization efforts in recent years have resulted in better alignment between student demand and course section scheduling, leading to fewer course cancellations and greater consistency for students. The curriculum life cycle and ongoing curriculum review process helps programs and disciplines take a critical look at their courses, course sequences, student enrollment, and student outcomes, with an effort toward improving student success.

In the career and technical education programs, there can be smaller enrollment overall in more specialized degrees and fields. As the economy of Oakland County has improved, potential students for these programs may have successfully found work, reducing their immediate need for further education or a career change. However, as a community college it is a central part of OCC's mission to continue to offer degrees that produce a skilled workforce and meet community need. When enrollment in certain technical programs fluctuates, the College maintains a strong curriculum to continue meeting community demand. Oakland County relies on OCC to provide well-trained and professionally certified welders, surgical technologists, and machinists even as community supply and demand for such workers fluctuates with the economy, student awareness, student interest, and local business needs.

Further, in CTE disciplines, students may only need to take a course or two in order to gain the skills needed for employment. Certain CTE fields do not require a degree and it can be challenging to schedule such programs and courses when students in one course may not choose to enroll in the next course in the sequence. Enrollment activity and student behaviors in such cases are difficult to predict and project for planning purposes. Overall, in both CTE and transfer courses, student retention poses a challenge to effective scheduling and optimal seat fill by section.

In fact, when analyzing seat fill rates at the course level for disciplines falling below 50%, there is a difference in comparing introductory-level courses to the higher-level courses in the curriculum. The introductory-level courses in these combined fields show a seat fill rate of 43.3%, while the higher-level courses have a seat fill rate of 37.0%. A larger number of students start at the introductory level of these disciplines than persist to advanced coursework, so their retention would positively impact the overall seat fill rates of these fields.

Seat Fill Rate by Course Type

Course Type	Number of Disciplines 2017-18	50-100% Seat Fill
CTE	38	27 (71.1%)
Transfer	33	33 (100.0%)
Total	71	60 (84.5%)

Course Type	Number of Disciplines 2017-18	0-50% Seat Fill	50-80% Seat Fill	80-100% Seat Fill
CTE	38	11 (28.9%)	17 (44.7%)	10 (23.6%)
Transfer	33	0 (0.0%)	6 (18.2%)	27 (81.8%)
Total	71	11 (15.5%)	23 (32.4%)	37 (52.1%)

Seat Fill Benchmarks

In terms of setting a benchmark, it is useful to see where disciplines fall within the range of fill rates in 2017-18. Based on these ranges, the following goals are proposed.

Transfer Seat Fill Benchmark

Below Target 0-50%	Within Target 50-80%	Exceeding Target 80-100%
0 (0.0%)	6/33 (18.2%)	27/33 (81.8%)

➔ In 2017-18, 81.8% of transfer disciplines exceed the 80% target. Within two years, that figure will be **84%**.

CTE Seat Fill Benchmark

Below Target 0-50%	Within Target 50-80%	Exceeding Target 80-100%
11/38 (28.9%)	17/38 (44.7%)	10/38 (26.3%)

➔ In 2017-18, 71.1% of CTE disciplines meet or exceed the 50% target (combining both the yellow and green categories). Within two years, that figure will be **74%**.

Benchmarks will be attained via improved scheduling, marketing, student recruitment and financial support via scholarships and financial aid, student retention analysis, and initiatives at the discipline and division levels. The Board Monitoring report process allows OCC to analyze and fine tune an approach to the specific needs of each discipline.

Key:

** High Priority for Improvement
* Medium Priority for Improvement
Low Priority for Improvement (Target Exceeded)

2017-18 Seat Fill Rates by Discipline

Note: Course section capacity (seats available) is set to a standard number of students (most often 30) depending on the course. However, disciplines may adjust this section size according to their specific needs.

Business and Information Technology

Discipline	Course Type	Number of Sections	Seats Filled	Capacity	Seat Fill Rate
ECO (Economics)	Transfer	108	2983	3225	92.5%
ACC (Accounting)	Transfer	117	2843	3423	83.1%
CIS (Computer Information Systems)	CTE	226	4637	6042	76.7%*
BUS + MKT (Business + Marketing)	Transfer	180	4041	5363	75.3%*
PLG (Paralegal)	CTE	24	297	680	43.7%**

College Readiness

Discipline	Course Type	Number of Sections	Seats Filled	Capacity	Seat Fill Rate
ASC (Academic Support Center)	Transfer	38	680	760	89.5%
CNS (Counseling)	Transfer	21	435	565	77.0%*

Communications, Arts & Humanities

Discipline	Course Type	Number of Sections	Seats Filled	Capacity	Seat Fill Rate
ARB (Arabic)	Transfer	3	88	90	97.8%
PHI (Philosophy)	Transfer	78	2261	2340	96.6%
JPN (Japanese)	Transfer	3	86	90	95.6%
ENG (English)	Transfer	522	12033	12760	94.3%
HUM + FSH (Humanities)	Transfer	104	2937	3120	94.1%
COM (Communications)	Transfer	83	2087	2244	93.0%
SPA (Spanish)	Transfer	47	1268	1410	89.9%
THE (Theatre)	Transfer	18	307	346	88.7%
SLS (Sign Language Studies)	CTE	70	966	1105	87.4%
ESL (English as a Second Language)	Transfer	148	2541	2960	85.8%
GRD (Graphic Design)	CTE	26	513	603	85.1%
MUS (Music)	Transfer	43	744	912	81.6%
PHO (Photography)	CTE	44	771	961	80.2%
ART (Art)	Transfer	135	2869	3582	80.1%

Discipline	Course Type	Number of Sections	Seats Filled	Capacity	Seat Fill Rate
GER (German)	Transfer	5	116	150	77.3%*
INT (Interior Design)	CTE	14	266	352	75.6%*
FRE (French)	Transfer	14	316	420	75.2%*
CUL (Culinary Arts)	CTE	22	322	540	59.6%*

Engineering, Manufacturing & Industrial Technology

Discipline	Course Type	Number of Sections	Seats Filled	Capacity	Seat Fill Rate
TED (Apprentice Engin. / Drafting)	CTE	4	103	120	85.8%
CAD + DDT (Comp. Aided Design and Engin. + Drafting and Design Tech.)	CTE	57	1304	1558	83.7%
MSE (Material Science)	CTE	3	74	90	82.2%
ROB (Robotics)	CTE	15	271	335	80.9%
APP (Applied Technology)	CTE	4	63	78	80.8%
MTT (Machine Tool Technology)	CTE	23	305	412	74.0%*
APT (Apprentice Tinsmith)	CTE	1	22	30	73.3%*
MCT (Mechatronics)	CTE	11	161	232	69.4%*
EEC + ETT (Electric./Electronics Tech.)	CTE	9	139	203	68.5%*
APM (Apprentice Mathematics)	CTE	2	29	45	64.4%*
EGR (Pre-Engineering)	Transfer	4	69	120	57.5%*
AUT (Automotive Technology)	CTE	26	286	520	55.0%*
CMN (Construction Management)	CTE	11	147	298	49.3%**
CAR (Collision Auto Repair)	CTE	13	118	260	45.4%**
WEL (Welding)	CTE	20	107	258	41.5%**
HVA (Heating Vent. Air Condition.)	CTE	24	258	627	41.1%**

Actions:

- Update EMIT facilities to improve educational experience and attract students (some projects completed, some pending). Communicate widely about programs and career opportunities to counselors, high schools, and adult learners. Build partnerships, apprenticeships, and other innovative programs to recruit and grow a skilled workforce in high-demand, high-paying jobs.

Learning Resources

Discipline	Course Type	Number of Sections	Seats Filled	Capacity	Seat Fill Rate
LIB (Library Technical Services)	CTE	9	125	260	48.1%**

Actions:

- Align LIB curriculum with national standards and add online option for this program. Both actions are currently in process. Point of Strength: OCC has the only library technician program in Michigan and Indiana.

Mathematics, Natural & Life Sciences

Discipline	Course Type	Number of Sections	Seats Filled	Capacity	Seat Fill Rate
GSC (General Science)	Transfer	41	1068	1104	96.7%
PHY (Physics)	Transfer	44	1089	1155	94.3%
BIO (Biology)	Transfer	250	6454	6850	94.2%
FSN (Natural and Life Sciences)	Transfer	7	192	210	91.4%
CHE (Chemistry)	Transfer	86	2073	2303	90.0%
MAT (Mathematics)	Transfer	528	12670	15285	82.9%

Nursing & Health Professions

Discipline	Course Type	Number of Sections	Seats Filled	Capacity	Seat Fill Rate
MDA (Medical Assisting)	CTE	48	1172	1395	84.0%
NUR (Nursing)	CTE	9	208	270	77.0%*
HEA (Health)	CTE	29	624	870	71.7%*
HCA (Health Care Administration)	CTE	14	297	420	70.7%*
DHY (Dental Hygiene)	CTE	17	338	510	66.3%*
DMS (Diagnostic Med. Sonography)	CTE	16	171	480	35.6%**
RSP (Respiratory Therapy)	CTE	7	71	210	33.8%**
SUR (Surgical Technology)	CTE	7	68	210	32.4%**
RAD (Radiologic Technology)	CTE	9	84	270	31.1%**

Actions:

- Seek additional clinical sites/spots for students in the Health professions. Note: The enrollment in these courses is limited by the clinical spots available. The College does not offer more student enrollment in courses than can be accommodated in clinical, an essential component of the degree and professional training for licensure.

Public Services

Discipline	Course Type	Number of Sections	Seats Filled	Capacity	Seat Fill Rate
CRJ (Criminal Justice)	CTE	65	1803	1989	90.6%
FFT (Fire Fighter Technology)	CTE	5	132	180	73.3%*
EMS (Emergency Medical Services)	CTE	22	371	630	58.9%*
HLS (Homeland Security)	CTE	15	200	450	44.4%**

Actions:

- Move HLS course into CRJ so that they are more easily found by students. This is where these course typically occur at other institutions. The steps to accomplish this action have occurred and will take effect in the 2019-2020 academic year.

Social Sciences

Discipline	Course Type	Number of Sections	Seats Filled	Capacity	Seat Fill Rate
EDU (Education)	Transfer	2	56	60	93.3%
ANT (Anthropology)	Transfer	34	938	1020	92.0%
HIS (History)	Transfer	101	2750	3030	90.8%
PSY (Psychology)	Transfer	205	5416	6134	88.3%
SOC (Sociology)	Transfer	109	2762	3270	84.5%
GEO (Geography)	Transfer	15	378	450	84.0%
POL (Political Science)	Transfer	72	1743	2130	81.8%
PER (Physical Ed. and Recreation)	Transfer	137	2690	3460	77.7%*
ECE (Early Childhood Education)	CTE	18	406	540	75.2%*
MHA (Mental Health / Social Work)	CTE	2	39	60	65.0%*

Division Planning

Improved understanding of enrollment capacity is just one outcome accomplished by division planning. The process analyzes programs from a college-wide perspective to assess learning, completeability, employment needs and outcomes, faculty and facility needs, etc. These are interrelated components that inform how students move into, through, and out from OCC's degree programs into opportunities after graduation.

Process Summary

Annually, Institutional Effectiveness engages the Associate Vice Chancellor(s) and Academic Deans in a review of data by division. These meetings result in several beneficial outcomes including increased awareness of strengths, weaknesses, opportunities and challenges in each division, and resulting action strategies and plans for improvement efforts for planning over the next 12 months.

Data reviewed during these meetings include:

- **Degree audit information** identifying percent of students >75%, 50-74%, 25-49% and 1-24% through each program.
- **Completion rates** by program over the last four academic years.
- **Graduate Follow-Up Survey data including** number of employed students, number of students looking for work, number of students employed with same/new employer, number employed in a field related/unrelated to degree or credential, wages and internal transfer.
- **Unemployment Insurance Wage Data** including percent of students employed a quarter before OCC attendance, two quarters after OCC attendance, percent employed at 4 years, median quarterly wage after OCC, median quarterly wage change after OCC.
- **Opportunity score**- gap analysis comparing recent graduates to job opportunities in the region.
- **Program planning** information that includes program credit information and advisory committee status and recommendations.
- **Student learning** updating including compliance with student learning assessment plans.
- **Facility information** indicating if facilities are adequate or need improvement for program requirements/offerings.
- **Faculty staffing** information including total number of ICHs for each program and total number of full time faculty- this can be used to identify if a hiring or layoff is recommended.
- **Cohort assessment** by program that examines target for enrollment compared to actual enrollment.
- **Action strategy review** to identify if actions from previous years have been completed.

Status by Division

An examination of status by division on the areas included in division planning are noted below:

- **Art, Design & Humanities-** the Sign language and Interior Design programs are performing very well in all measures and continuously engage in efforts to be relevant in the industry and improve student success. Some consideration is being given to the benefit of incorporating the cinematic arts and theatre into the larger Associate of Arts degree. Finally, areas for improvement in this division include the development of advisory boards and refined student learning assessment practices in some programs.
- **Business & Information Technology-** the Paralegal, Business and our Accounting programs are performing very well in most measures. Additionally, changes to programming in CIS were identified and implemented since this division planning occurred. Some programs in this division have identified the need to develop websites and others are in a stage of monitoring progress on several areas including student learning assessment, updating course descriptions, and refining course sequencing.
- **Engineering, Manufacturing & Industrial Technology-** OCC's CAD programs are performing well in all aspects examined during division planning. These programs are lauded for high wage earnings post-graduation and benefit from a neutral opportunity score (high community need). It was identified through the division planning meetings that automotive servicing areas are in need of renovation, which has been completed since this time. Improvements in student learning assessment implementation were noted for a few programs in this division as well as the need to monitor ever-growing facilities and equipment needs and monitoring certain programs with low completion rates. Hiring a permanent Dean in this area since the previous division planning meetings has expedited improvement efforts in many programs within the division and expanded community awareness and partnerships in the region as well.
- **Learning Resources-** the Library Technician program is in the process of submitting applications for external accreditation and redeveloping its student learning assessment plan. Recent hires and revisions in this program are aimed at improving student outcomes and taking this program online, potentially in 2020.
- **Nursing & Health Professions-** Dental Hygiene, Nursing, Radiological Technology and Respiratory Therapy continue to be programmatic strengths in this division. Additionally, division planning identified institutional support needs for diagnostic medical sonography and surgical technology due to the limitations of not having a clinical coordinator. Additionally, improvement efforts are underway for medical assisting to increase transferability.
- **Public Services-** OCC's criminal justice degrees, in addition to the Police and Fire Academies continue to be strengths of this division. The police and fire academies in particular have seen increased enrollment in a time of enrollment declines for many credit programs. Improvements have been identified for the emergency medical services programs in the implementation of student learning assessment and much progress has been made since the last division planning meeting. Additionally, examination of the homeland security certificate and incorporation into criminal justice has recently been completed, which was an identified need resulting from planning meetings. Areas for continued improvement include monitoring of police evidence

technology program and its appropriateness for community need. Similar to EMIT, hiring a permanent Dean in this area has expedited improvement efforts in many programs and expanded community awareness and partnerships in the region as well.

- **Social Sciences**- the Mental Health Social Work program curriculum and faculty expertise is a strength in this area, although enrollment has recently declined. One area for identified improvement is to obtain external accreditation for the early childhood education program.

Action Strategy Implementation

Action strategies resulting from division planning are combined with actions from student learning assessment and curriculum review processes. These actions help inform strategic planning and budget, ensure students are learning what is intended, help to guide and improve the content and delivery of the curriculum, and identify facility needs, among others. The following is a review of current action strategy implementation.

- **Instructional actions** were implemented, including adjusting course sequencing and course materials.
- **Curricular actions** were implemented, including changes to courses and the college catalog. *It must be noted that curricular changes, particularly program changes, are a lengthy process involving several stakeholders and considerations to impact on students, faculty and the institution are always considered.*
- **Assessment actions** were implemented, illustrating the successful use of the ARTIS tool for tracking actions through completion.
- Actions related to **institutional support** were completed, including obtaining furniture and equipment and program marketing. *Actions in this category have budget considerations and often take several years for full implementation.*
- **Student success** actions were completed, including addressing persistence and completion, scheduling optimization and increasing course transferability. *Similar to curricular actions mentioned above, these actions take considerable time and implementation involved many facets of the institution.*
- **Human resource** actions were completed, including the hire of a full time faculty member in a needed area. *Similar to student success and curricular actions, the hiring of additional faculty takes time, although additional efforts could be aimed at increasing professional development among current faculty representing 50% (2) of the actions in this category.*

The college does identify that connecting action strategies to the budgeting process could be improved and that the development of a common SQL table to house actions from student learning assessment, division planning and other meetings in one place would be ideal for more accurate tracking purposes. For example, many actions noted above have been completed but are not adequately tracked or documented with current processes. Further, as informed by Board monitoring report policy, additional data will be linked to division planning and action strategy formation, to integrate these processes into college decision-making and initiatives.

Program Enrollment Trends – Peer Comparison

The following enrollment data from the [Michigan Community College Network](#) provides a comparison of discipline-level enrollment for OCC with three local peer colleges, over a three-year period. A direct comparison among institutions is challenging since all four colleges structure programs differently, call them by different names, and revise or change them from year to year. The information below is a careful approximation of discipline-level enrollment, but additional validation at the program level would be beneficial in instances that require it. Yet, the table still provides a useful overview of comparative enrollment trends. The list is not exhaustive, but provides highlights of key programs at OCC.

Comparative Program Enrollment (Number of Reported Programs)

Discipline	Year	OCC	Macomb	Henry Ford	Schoolcraft
Culinary	2017-18	314 (4)	301 (9)	349 (6)	216 (4)
	2016-17	352 (5)	353 (7)	361 (8)	227 (3)
	2015-16	434 (4)	464 (6)	445 (6)	229 (4)
Early Childhood	2017-18	410 (1)	325 (6)	699 (6)	447 (8)
	2016-17	482 (3)	530 (7)	753 (7)	538 (8)
	2015-16	525 (3)	822 (7)	875 (7)	580 (8)
Paralegal	2017-18	136 (2)	121 (1)	83 (2)	0 (0)
	2016-17	94 (3)	171 (1)	104 (1)	0 (0)
	2015-16	117 (3)	177 (1)	123 (1)	0 (0)
Criminal Justice	2017-18	737 (5)	458 (4)	541 (4)	616 (1)
	2016-17	736 (7)	580 (4)	639 (4)	686 (1)
	2015-16	839 (6)	646 (4)	760 (4)	748 (1)
Car/Auto	2017-18	159 (5)	249 (3)	233 (7)	0 (0)
	2016-17	195 (5)	298 (3)	262 (7)	0 (0)
	2015-16	232 (5)	338 (3)	271 (7)	0 (0)
Welding	2017-18	62 (1)	108 (1)	54 (3)	158 (4)
	2016-17	84 (2)	104 (1)	57 (5)	150 (4)
	2015-16	95 (2)	127 (1)	39 (5)	172 (4)
Business/ Marketing	2017-18	2,821 (3)	2,208 (14)	1,614 (5)	1,825 (7)
	2016-17	2,568 (7)	3,100 (10)	1,557 (5)	1,875 (7)
	2015-16	2,845 (6)	3,462 (10)	1,602 (5)	1,855 (7)
Accounting	2017-18	811 (2)	326 (3)	363 (2)	301 (3)
	2016-17	712 (5)	514 (2)	377 (3)	312 (3)
	2015-16	752 (4)	515 (2)	386 (2)	346 (3)
Respiratory Therapy	2017-18	32 (1)	66 (1)	49 (1)	0 (0)
	2016-17	19 (1)	75 (1)	28 (1)	0 (0)
	2015-16	15 (1)	70 (1)	26 (1)	0 (0)
Surgical Technology	2017-18	12 (1)	35 (2)	15 (1)	0 (0)
	2016-17	7 (1)	42 (1)	19 (1)	0 (0)
	2015-16	12 (1)	46 (2)	19 (1)	0 (0)

Endnotes

ⁱ 12,788 = Unduplicated headcount of students enrolled in fall 2015 through summer 2016 enrolled in credit career and technical education leading to a formal award. Most recent validated data through VFA reporting. Not cohort-based. Additional definition details on p.48: <http://vfa.aacc.nche.edu/Documents/VFAMetricsManual.pdf>

ⁱⁱ **Perkins 3P1** = Percentage of CTE concentrators from last reporting year who returned or transferred to another postsecondary institution during the reporting year.

- **Numerator** = Number of CTE Concentrators who remained enrolled in their original postsecondary institution or transferred to another 2- or 4-year postsecondary institution during the reporting year and who were enrolled in postsecondary education at your institution but did not earn an industry- recognized credential, a certificate, or a degree in the previous reporting year during the previous reporting year.
- **Denominator** = Number of CTE Concentrators who were enrolled in postsecondary education in the previous reporting year and who did not earn an industry- recognized credential, a certificate, or a degree in the previous reporting year.

ⁱⁱⁱ Applicant-based programs include: DHY.AASX, DMS.AASX, EMS.AAS, EMS.EMT.CA, EMS.PAR.CT, NUR.AASX, NUR.RNE.AASX, NUR.TPN.AAS, RAL.AASX, RSP.AASX, SUR.AASX, PLG.AAS

^{iv} External credential programs include: HVA.AASX, MTT.CNC.AAS, MTT.CNC.CT, ROB.AUT.AAS, WEL.CT, DHY.AASX, DMS.AASX, MDA.AAS, MDA.CT, MDA.MIC.CA, MDA.MOA.CA, MDA.PHT.CA, NUR.AASX, NUR.RNE.AASX, NUR.TPN.AAS, RAL.AASX, RSP.AASX

^v 2015-16 is the most recent validated data available through VFA reporting.

^{vi} **Perkins 1P1** = Percentage of CTE concentrators who passed a third party technical skills assessment that are aligned with industry-recognized standards, during the report year.

- **Numerator**: Number of CTE concentrators who passed a technical skill assessment, if available and appropriate, during the reporting year.
- **Denominator**: Number of CTE concentrators who took a technical skill assessment during the reporting year.

^{vii} **Perkins 2P1** = Percentage of CTE concentrators who left postsecondary education and received a third party credential, a certificate, or a degree.

- **Numerator**: Number of CTE concentrators who received an industry-recognized credential, a certificate, or a degree during the reporting year and left postsecondary education by the subsequent Fall.
- **Denominator**: Number of CTE concentrators who left postsecondary education (leaver) by the subsequent Fall.

^{viii} **Perkins 4P1** = Percentage OF CTE concentrators from previous reporting year who left postsecondary education and placed or retained in employment, or placed in military service or apprenticeship programs during the reporting year (determined via survey).

- **Numerator**: Number of CTE Concentrators who left postsecondary education and who were placed or retained in employment, or placed in military service or apprenticeship programs during the reporting year
- **Denominator**: Number of CTE Concentrators from previous reporting year who left postsecondary education during the reporting year.

Note: CTE Concentrator = a postsecondary adult student (not concurrently enrolled in high school) who:

- (1a) Completes at least 12 academic or CTE credits (excluding developmental/remedial) within a single CTE program area sequence that is comprised of 12 or more academic and technical credits and terminates in the award of an industry-recognized credential, a certificate or a degree as of the beginning of the reporting year; AND (1b) was enrolled at some point during the reporting year in a declared CTE program. **OR**
- (2) Completes a CTE program sequence that terminates in an industry-recognized credential, a certificate, or a degree during the reporting year. (NOTE: All completers are, by definition concentrators, even those who were not enrolled in the reporting year, and those who did not earn 12 or more non-developmental credits prior to the reporting year.)