

CTE Program Review

Program Name: **Fire Technology**

Program Contact: **Schneider, Michelle B.**

Academic Year: **2016-2017**

Status: **Submitted for review**

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1. Description of Program

Provide a brief description of the program and how it supports the college's [College Mission and Diversity Statements](#), [CSM Strategic Goals 2013/14 to 2015/16](#), and other [Institutional Program Planning](#) as appropriate. What is the program's vision for sustaining and improving student learning and success over the next three years?

The Fire Technology program prepares students to meet the high standards required to pursue a career in public safety as a firefighter, an emergency medical technician, or a member of related fire protection services. Those standards are developed and determined by the State Board of Fire Services.

For firefighters, standards are validated by the International Fire Service Training Association (IFSTA). Classes are designed to provide the student with the information needed to meet the fire-related performance objectives required by the National Fire Protection Association (NFPA) Standard 1001.

For emergency medical technicians (EMTs), the State of California has adopted the National Registry curriculum.

The Fire Technology department strives to deliver the most up-to-date information, to assist in the success of our students as they navigate the program and eventually head out to join the workforce. Not only is most of the instructional staff still active public safety personnel, all of them continue to train and stay current with new theories and skills.

Through the expertise of our faculty, and exposure to professional fire service personnel, students can expect to be trained in the latest theories and techniques of fire technology, firefighting skills, and emergency medical training. Our program has served as a model for other community colleges and fire academies to look to and pattern from.

Beginning in 2015-16, and for the next few years, the department will concentrate on incorporating new curriculum and testing into the Fire Academy, new content and additional hours into the EMT: Basic course, and prepare for a review of the degree courses by the U.S. Fire Administration. We look forward to the expansion of training, and are encouraging our students to not only complete their Associate Degree with CSM, but to obtain a Bachelor's Degree in Management or Public Administration.

2. Student Learning and Program Data

A. Discuss Student Learning Outcomes Assessment

1. Reflect on recent SLO assessment results for courses and degrees and certificates offered by the program. Specify how SLO assessment informs curriculum development and changes to curriculum.

The SLO assessments for Academic Year 2015-16 indicated that the Fire Technology instructional staff was on target in the delivery of the curriculum. A successful outcome for an SLO is determined by 75% or more of the students meeting the SLO. Any results under 75% are brought to the attention of the instructor for re-evaluation of curriculum delivery.

Successful results are dependent on not only the instructor's ability to deliver the curriculum, but the student's ability to comprehend and apply the given knowledge in a meaningful way. Because much of our curriculum is regulated, any adjustments must come from the delivery of the curriculum.

This department is fortunate that we very rarely see an SLO assessment below our 75% threshold. The examples given are representative of SLO assessments throughout the program.

Examples:

FIRE 720 - Fire Prevention (Fall 2015)

SLO 1: 96.77%

SLO 2: 93.55%

FIRE 715 - Principles of Emergency Services (Spring 2016)

SLO 1: 100%



SLO 2: 100%

SLO 3: 100%

2. Comment on the success rates in the program SLOs that are aligned with specific course SLOs. What do the program SLO and course data reveal about students completing the program? Identify trends and discuss areas in need of improvement. Is the alignment between course and program SLOs appropriate and informative? Describe any additional methods used to assess program SLOs and reflect on the results of those assessments. See [course-to-program SLO alignment mapping](#).

Since a majority of the Fire Technology curriculum is prescribed by state and national entities, the program SLOs were built to reflect the course SLOs. Comprehension and application of knowledge is built upon and expanded throughout the program, as students move towards the training courses (Fire Academy and EMT).

Success in the course SLOs should translate to success in the program SLOs. However, the department does not have a way to capture that information officially. Going forward, our goal will be to have more of our students not only complete the program, but apply for the degree or certificate. This is a career that is starting to require applicants to hold an Associate Degree for hiring, and a Bachelor's Degree for promotion.

3. For any courses in the program that satisfy a GE requirement, which GE SLOs are supported or reinforced by the course SLOs? What do assessment results for the course SLOs (and for the GE SLOs, if available) reveal about student attainment of the GE SLOs? See [GE SLO Alignment Summary Report](#)  or [All Courses GE SLO Alignment Data](#) .

FIRE 715 is the only course that satisfies a GE requirement. The GE SLOs that are supported are Effective Communication and Critical Thinking. All of the FIRE 715 SLOs support Critical Thinking, and one of the SLOs also supports Effective Communication.

In reality, the Fire Technology course SLOs were developed not only with the Program SLOs in mind, but also to support as many of the GE SLOs as possible. As mentioned above, success in course SLOs should translate to success in GE SLOs.

B. Student Success Indicators

1. Review [Student Success and Core Program Indicators](#) and discuss any differences in student success indicators across demographic variables. Also refer to the [College Index](#) and other relevant sections of the [Educational Master Plan: Update, 2012](#), e.g., Student Outcomes and Student Outcomes: Transfer. Basic Skills programs should also refer to [ARCC](#) data.

While more females are registering for Fire Technology courses, this is still a male-dominated career. Upper body strength and the physicality of the job requirements are usually where females struggle. Though some will return the following semester, after becoming better prepared, and be successful.

There has been only modest increases in the number of Asian (including Filipino) students. This could be attributed to a bias that fire fighting is a "blue-collar" profession, and perceived as unsuitable. The number of Black students has doubled from 13-14 to 15-16, with a solid success rate.

The majority of our students are 29 or younger. Anecdotally, we are also seeing an increase in students with Bachelor's Degrees and military service.

Overall, the Fire Technology has a higher success and retention rate than the college average.

2. Discuss any differences in student success indicators across modes of delivery (on-campus versus distance education). Refer to [Delivery Mode Course Comparison](#).

Not applicable to this program.

C. Program Efficiency Indicators. Do we deliver programs efficiently given our resources?

Summarize trends in program efficiency as indicated in the [Student Success and Core Program Indicators](#) (LOAD, Full-time and Part-time FTEF, etc.)

The Fire Technology program is staffed entirely by a part-time instructional staff. The efficiency of the program is routinely higher than both our division and the college. Since we use mostly active fire service personnel to teach, fire house schedules must be taken into account.

The training courses (FIRE 793 & FIRE 796) are taught by multiple instructors, due to work schedules and course requirements. A bank of instructors are used to teach these two courses; on days that require students to participate in manipulative skills more than one instructor will be on hand.

This style of scheduling and instructional delivery will not be changing in the foreseeable future.

3. Career Technical Education

A. Career Technical Education Data (This information is required by California Ed. Code 78016.)

1. Review the program's available labor market data, as applicable. Here are two relevant links:

- [State Of California Employment Development Department, Labor Market Information Division](#) (the official source for California Labor Market Information)
- [Employment data](#) (by Program Top Code) from the State Chancellor's Office

Explain how the program meets a documented labor market demand without unnecessary duplication of other training programs in the area.

College of San Mateo's Fire Technology program is the only such program in San Mateo County. This program is accredited by the State of California as both a fire training program and fire academy presenter.

While there are other programs in the region, the number of students who want to train for careers in the fire service allows all of the programs to maintain healthy enrollment numbers. Traditionally, Fire Technology programs work with the agencies in their respective counties.

Agencies are beginning to hire again, as the economy rebounds and personnel retire. Since these jobs cannot be outsourced, there will always be a need for fire service career training. Students from our program can not only become firefighters, but can also

pursue careers relating to fire code inspection and investigation, fire education, and fire protection.

The Fire Service requires applicants to test through a series of exams. These are written, physical, oral, and medical in nature. Because of the competitiveness it is virtually impossible to determine the gainful employment rate for this program. The students do not often report their success in obtaining jobs with fire agencies.

2. Summarize student outcomes in terms of degrees and certificates. Identify areas of accomplishment and areas of concern.

collegeofsanmateo.edu/institutionalresearch/degcert.asp

Without current and specific data, there is no way to address this item.

While the college tracks the number of degrees and certificates of achievement awarded, the information provided at the above link is only through the 2011-12 academic year. Nor is broken out by program. Assessment survey results from students who have been awarded a degree or certificate of achievement in Fire Technology have never been forwarded to the department.

The Fire Technology staff has begun encouraging students to complete their Associate Degree here at CSM, and to consider transferring to a university for a Bachelor's Degree. The Fire Chiefs in this county have stated that hiring requirements will be changing to require an Associate Degree for hiring, and they will not promote without a Bachelor's Degree or higher.

3. Review and update the program's Advisory Committee information. Provide the date of most recent advisory committee meeting.

The Fire Technology Advisory Council meets periodically throughout the year to discuss how the local agencies and the college can assist each other to provide relevant training to the Fire Technology students. The council consists of the Fire Technology Coordinator, the Division Dean, the Program Services Coordinator supporting the Fire Technology program, and three of the Fire Chiefs from San Mateo County.

The last meeting was held on October 18, 2016.

4. Additional Factors

Discuss additional factors as applicable that impact the program, including changes in student populations, state-wide initiatives, transfer requirements, advisory committee recommendations, legal mandates, workforce development and employment opportunities, community needs. See [Institutional Research](#) as needed.

The recent update to the Firefighter I curriculum has required the program to modify the delivery of curriculum. This change will have a direct impact on the number of students in the Fire Academy (FIRE 793). The addition of live fire training requires students to rent burn rated turnouts and self-contained breathing apparatus (SCBA). This has added a significant cost to the course. It also requires the department to reduce the number of students we can accept into the academy each semester for safety reasons.

Additionally, the department is developing a plan to institute the new testing requirements that must be in place by January 1, 2018. This requires our instructors to be receive extra training/certification from the State. Students will have to take a standardize written examination, and demonstrate proficiency in specific skills, as determined by State Fire Training.

Likewise, there are changes coming from EMSA (Emergency Medical Services Authority) for all EMS training, which will affect FIRE 796 - Emergency Medical Technician: Basic and FIRE 787 - Emergency Medical Technician: Basic - Refresher courses. The two of the EMT instructors will be working on the update over the next year.

There is also an expected review and update to the core courses for the major. These courses are prescribed by the National Fire Academy and Fire and Emergency Service Higher Education (FESHE). Reviews are typically every five years. This is the curriculum mandated by the State for an Associate Degree. The Fire Chiefs in our county have indicated that individuals looking to promote will need at least a Bachelor's Degree. We will continue to encourage our students to complete their Fire Technology degree here at CSM, and transfer to a university for additional education in Business Management or Public Administration.

Since public safety cannot be out-sourced, there will always be a need for Firefighters and EMTs. However, the consolidation of cities/agencies could reduce the number of positions available. Additionally, the degradation of pay and benefits, coupled with the high cost of living in the San Francisco Bay Area is already proving to be of concern for local agencies whose workforce live far outside of the area.

5. Planning

A. Results of Program Plans and Actions

Describe results, including measurable outcomes, from plans and actions in recent program reviews.

Historically, the overarching goal of the Fire Technology program is to stay up-to-date with entry-level training needs. We work towards this every academic year.

Our instructional staff has been instrumental in identifying outdated and damaged equipment. A fair amount this equipment has been repaired or replaced as needed. Rotation plans for other equipment has been created, so we can replace items on a more regular schedule and not when it becomes an emergency.

The course rotation plan has been updated to ensure evening students can attend the core courses, allowing them to also obtain a degree or certificate in Fire Technology.

B. Future Program Plans and Actions

Prioritize the plans to be carried out to sustain and improve student success. Briefly describe each plan and how it supports the [CSM Strategic Goals 2013/14 to 2015/16](#). For each plan, list actions and measurable outcomes. Plans may extend beyond a single year. Describe the professional activities and institutional collaborations that would be most effective in carrying out the program's vision to improve student learning and success.

The Fire Technology program is entering a period of adjustment as we incorporate new curriculum requirements for the fire academy and EMT courses. Instructional materials and equipment needs will be under review, so we can guarantee a quality program for our students and meet the regulated requirements.

Equipment replacement plans will be expanded farther into the Fire Academy and EMT courses, so the college has a better idea of the cost of business. A replacement schedule for equipment will allow us to plan ahead, and better utilize the financial resources given to our department.

Long term planning to achieve higher levels of education are now being explored by the fire service profession. The Fire Technology Advisory Committee will continue to examine the concepts and feasibility of that trend, and how CSM can assist.

Updated curriculum, equipment and training delivery will contribute to student success in the program and in the field, while supporting our local hiring agencies.

6. Program Maintenance

A. Course Outline Updates

Review the [course outline update record](#). List the courses that will be updated in the next academic year. For each course that will be

updated, provide a faculty contact and the planned submission month. See the [Committee on Instruction](#) website for [course submission instructions](#). Contact your division's [COI representatives](#) if you have questions about submission deadlines. **Career and Technical Education courses must be updated every two years.**

All of the Fire Technology courses listed in the Academic Catalog are reviewed, and updated as needed, on a two-year cycle as required for CTE courses. The Fire Technology courses will be reviewed by the Committee on Instruction (COI) October 2016. Most of the courses had either no or minimal updates. A handful of courses were given more substantial updates (e.g., Student Learning Outcomes or enrollment limitation changes).

The changes are completed and presented to the COI by the Program Services Coordinator (Michelle Schneider) for review and approval.

B. Website Review

Review the program's website(s) annually and update as needed.

The program's complete website is reviewed, and updated as needed, at least annually. The Fire Academy page is updated at least four times a year, when the academy application is posted and removed each semester. All changes are made by the Program Services Coordinator.

C. SLO Assessment Contacts

SLO assessments are conducted every semester for each course. The information obtained is input into TracDat by the Program Services Coordinator.

7. Dominant Themes Summary for IPC

Briefly summarize the dominant, most important themes or trends contained in this program review, for division deans to collect and forward to the Institutional Planning Committee. What are the key program issues that matter most? (Brief paragraph or bullet points acceptable).

Student success and retention rates continue to be high

Modest increases in the diversity of our student demographics

Curriculum changes to Fire Academy and Emergency Medical Technician

Upcoming review of degree courses

Identification of equipment to replace and materials needed