Periodic Report Guide

2020

This guide provides instructions for completing the Periodic Report for ACS approved undergraduate programs in the Chemistry Program Approval & Review System (CPARS).

Table of Contents

Report Guide

Please refer to the ACS Guidelines for the requirements for an ACS-approved program.

The periodic report is divided into two parts. The first part of the report primarily consists of questions focused on the institution, department/program infrastructure, faculty, and courses. The second part consists solely of the contact hour table. Both sections of the report must be submitted.

Accessing CPARS

URL: https://institution.acs.org/institution
Each user must create a unique ACS ID and password in order to access the system. For security reasons, please do not share login information.

Navigating the Form in CPARS

You can use the breadcrumbs at the top of the form to navigate to different pages. The title of each page appears as a mouse-over on the breadcrumbs. The information in the guide uses both page number and page title to help with navigation.

Note: CPARS does not require users to navigate the form pages in a sequential order; using the breadcrumbs you can skip through the form pages.

Saving the form

The form is saved each time you navigate from one page to another, regardless of whether you use the breadcrumbs at the top or the buttons at the bottom of each page.
- Save – Saves the form data, but allows you to remain on the same page.
- Save and Exit – Saves the form and exits so that you can return to it at another time.
- Save and Next – Saves the form and moves you to the next page in the form.

CPARS Training

There are multiple short video tutorials for all reports on our CPARS Training webpage.

Part I: Institutional Data

Page 1: Institution Information

Portal users cannot edit the institution information because it is linked to the ACS central database. If edits to this information are necessary, please contact the ACS at cpt@acs.org.

Page 2: Academic Details and Programs Offered

- (Section 2.1) Programs must be accredited by a regional accrediting body in order to be approved by the ACS.
- (Section 2.2) To be organized as an independent administrative unit, programs must have autonomy over
  - An independent budget
  - Faculty selection and promotion
  - Curriculum development
  - Teaching assignments

Page 3: Institutional Environment

- **Salaries:** Aggregate data from the salary section will be available annually upon request.
- **Chemistry expenditures**: Assessed to determine if program has funding that is sufficient to maintain its current level of education.
- **Institution Support**: Responses can include, but are not limited to: institution funds to support travel to meetings or workshops (faculty development); support for maintaining instrumentation, facilities, stockroom needs; support for professional development for instruction; course releases for curricular development.

Page 4: Students & Degree Summary

- Provide enrollment numbers for the most recent academic year. If you're completing the report in 2020, then report data from the 2019-2020 academic year.
- Please provide the total number of students over the last six years that have matriculated to:
  - **Graduate school:** Any graduate program in the chemical sciences or related STEM fields.
  - **Professional Schools:** Medical, Dental, Veterinarian, Pharmacy, Law, etc.
- Please provide the total number over the last 6 years
  - **Government**: Federal or state government agencies: e.g. NIH, FDA, State Crime Labs
  - **Nonprofit:** Includes professional societies like ACS
  - **NGO:** Non-governmental agencies
  - **Self-employed:** Started their own company
  - **Industry:** Includes any industrial position
  - **Teaching:** K-12 or higher education
  - **Seeking employment:** Students that you know are still looking, but have not found a position in a field of their choice
  - **Other:** May include scientific writing, policy, or outreach.
  - **Unknown**: Students that have not reported their placement post bachelor's degree

Page 5: Faculty and Staff (Full-Time)

Please use the definitions below to classify your faculty members even if their university title/description differs. Enter the number of faculty members in each category. Enter the demographics for those categories. If you are unable to determine the demographics due to institutional policies, please enter a zero for each ethnicity/race.

We collect these data to evaluate chemistry faculty trends across the country; this information will be used to inform the programmatic plans and resources offered to the chemical community by the ACS. We can provide aggregate data on faculty demographics upon email request to cpt@acs.org.

- **Full-Time:** Individuals that work full-time at the institution and are wholly dedicated to the chemistry department. Please do not include visiting professors, adjuncts, or faculty that have appointments in more than one department in this category.
    - **Tenure track**: Includes full, associate, and assistant professors wholly dedicated to the chemistry department.
    - **Teaching Faculty (Instructional):** Titles for this category include, but are not limited to, Lecturer, Instructor, Lab Coordinator. Individuals in this category, typically have an expectation of a renewing contract and are assigned a full-time teaching load. Wholly dedicated to the chemistry department. In previous versions of the periodic report, these faculty members were categorized as *Long-Term, Non-tenure track*.
    - **Other:** If you have faculty members that are full-time, but do not fit the above categories, please choose "Other" and enter the appropriate description.
        - **For example:** If you have tenure track instructional faculty with a title of "Assistant Instructional Professor," you should choose other.

Page 6: Faculty and Staff Summary (Part-Time)

- **Part time:** Individuals that work full-time at the institution but are not wholly dedicated to the chemistry program; may have appointments in more than one department.
    - **Part-time, tenured:** Full or associate professors that have appointments split between two departments. Are not fully invested in the chemistry department or program.
    - **Part-time, pre-tenure:** Assistant professors who have appointments split between two departments.
    - **Part-time, instructional:** Instructional faculty whose appointment is split between two departments.
    - **Part-time, other:** Faculty members/instructors hired on a recurring part time contract, who have an expectation of continued employment, and who participate in faculty governance in the department. Again, indicate the appropriate job title for this category.

Page 7: Faculty and Staff Summary (Temporary)

- **Temporary:** Typically adjunct, visiting faculty members, or sabbatical replacements. Individuals in this category are usually hired on an "as needed" basis and typically do not participate in faculty governance. Visiting professors may contribute to department committees or curriculum development, but because they are on a limited contract without an expectation of continuance, they are categorized as temporary.
    - **Full-time:** Typically visiting faculty, sabbatical replacements
    - **Part-time:** Typically adjuncts

Diversity: Please include any **additional information about the diversity of your faculty** in this space. Examples include: Faculty members who identify as ethnic/racial minorities, women, persons with disabilities, members of the LGTBQIA+, were first generation college students, or military veterans.

Page 8: Faculty & Staff – Additional Information

Describe the role of temporary faculty in student instruction (Section 3.2 p. 4)

Indicate if the use of temporary faculty. Note whether temporary faculty teach courses that are part of the approved curriculum or are service courses for other majors. Indicate whether the hiring of temporary is due to extenuating circumstances (e.g. unexpected leaves of permanent faculty) or the inclusion of local experts.

Support Staff (Section 3.5, p. 6)

Please include only full- or part-time employees (not student workers).
Definitions & Examples:

- **Administrative staff:** Any full- or part-time employee that supports the administrative processes of the department/program. May include, but is not limited to: Office assistants, data analysts, office managers, payroll managers for the department, program administrative assistants, grant management staff, department secretaries, finance and accounting personnel
- **Stockroom:** Any full- or part-time employee that maintains the department stockroom, handles the chemical and equipment inventory, or conducts preparatory work for laboratory courses (do not include instructors or lab coordinators).
- **Instrument technicians:** Any full- or part-time employee that maintains and repairs department instruments. Please indicate if this position is shared between departments. If you use contract employees to maintain instruments, please indicate that in the comments.
- **Laboratory Coordinators:** Any full- or part-time employee that manages laboratory courses. May be the instructor of record for the course. May manage graduate or undergraduate TAs. Do not include individuals that act as a lab coordinator AND teach lecture courses.

Sabbatical and Leave of Absence (Section 3.4 p. 5)

Include leaves taken for any form of professional development. This includes traditional sabbaticals as well as leaves for work at the NSF, NIH, or other federal agency.

Diversity, Equity, Inclusion, and Respect

Examples of activities used by programs to create an inclusive environment and recruit and retain **faculty** may include, but are not limited to, the following:

- Diversity and implicit bias training for faculty and search committees.
- Welcome packet describing resources and communities on campus.
- Upon request, connecting faculty candidates and current faculty with faculty from diverse backgrounds across campus.
- Mentoring and community building events.
- Support networks.
- Resources to attend conferences focused on recruiting, supporting, retaining historically underrepresented and/or economically disadvantaged groups in STEM.
- Resources for families to support work-life balance and wellness.

Teaching Assistants (Section 3.6, p. 6)

If you use teaching assistants (either undergraduate or graduate), please describe how they are trained and supervised.

Last edit: 06092020-mmb

Page 9: Infrastructure (Section 4, pp. 6-7)

If the needs of the undergraduate program are not being met, please describe what might be needed to ensure that students receive the support needed to be successful after graduation.

Page 10-13 Instrumentation (Section 4.2, p. 7)

See section 4.2 in the ACS Guidelines for more details on the instrumentation requirements.

Please choose the instrument name and category from the drop down menus. Enter the year acquired, manufacturer, and model and indicate whether the instrument is used for research or instruction by checking the appropriate box. If you do not have an instrument in that category, please do not enter anything.

In subsequent periodic reports, the instrument data will be pre-populated and you will only have to update the instrument holdings.

Page 14: Infrastructure – Journals & Lab Safety (Section 4.4, p. 8)

Complete each section. If a safety item is not working or is not adequate to maintain a safe environment, you will have an opportunity to explain the issue and suggest solutions.

Page 15: Curriculum – Availability and Degree Tracks (Section 5.8, p. 14)

Please provide a link to the following, separate URLs with a semicolon:
- Catalog pages that provide course descriptions
- A clear description of the curriculum for each track that you would like approved.

Degree Tracks
- Please include only the degree tracks that you would like approved.
- Ensure that each track meets the requirements in the guidelines.
- Please provide links to the curriculum for each track
- Not all degree tracks available to students need to be ACS approved.

Page 16: Curriculum Courses

Degree tracks entered on p. 15 will be prepopulated on this page.

Which classes should you enter?

```
┌──────────────────────────┐          ┌──────────────────────────┐          ┌──────────────────────────┐
│ For all faculty members, │   Yes    │ Do any faculty members   │   Yes    │ Introductory, Foundation,│
│ are the average number of├─────────>│ have 12 or more contact  ├─────────>│ In-depth, Research,      │
│ contact hours per week 11│          │ hours per week?          │          │ Cognates, Other          │
│ or fewer?                │          │                          │          │                          │
└────────────┬─────────────┘          └────────────┬─────────────┘          └──────────────────────────┘
             │ No                                   │ No
┌────────────┴─────────────┐          ┌────────────┴─────────────┐
│ Introductory, Foundation,│          │ Enter only foundation,   │
│ In-Depth, Research,      │          │ in-depth, and research   │
│ Cognates, Other          │          │ courses. Required        │
│                          │          │ cognates.                │
└──────────────────────────┘          └──────────────────────────┘
```
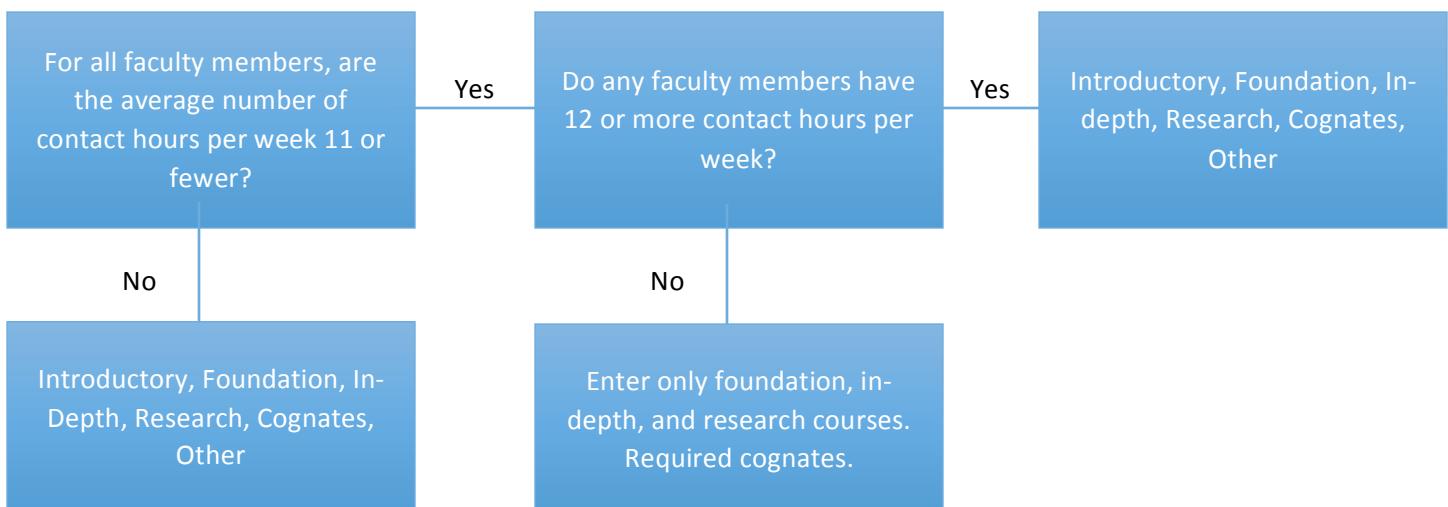
Course Categories (Section 5.2 – 5.4 pp. 10 – 13 and Section 5.7 p. 14)

- **Introductory** – General chemistry or introductory courses required for MAJORS only
- **Foundation** - Provide the first experience in each of the sub-disciplines: Analytical, Biochemistry, Inorganic, Organic, and Physical (ABIOP). Foundation courses build on the concepts covered in the introductory courses and provide the breadth of content needed for the in-depth courses (additional guidance).
- **In-Depth & Research** – These courses focus on depth rather than breadth. Each must have a foundation course or another in-depth course as a pre-requisite (additional guidance).
- **Physics Course** – Required cognate courses
- **Mathematics Course** – required cognate courses
- **Other courses** – Any course that is taught by your faculty including non-majors courses, general education courses, service courses

Course Number

Enter the course descriptor (e.g. CHEM) and the course number (e.g. 123)

Course Title

Enter the course title.

Course Type

For foundation courses only

Indicate whether the course covers content in

- Analytical
- Biochemistry
- Inorganic
- Organic
- Physical
- Distributed content – If you choose "distributed," then another field will appear that asks you to provide the distribution of content across ABIOP (e.g. 50% physical, 50% inorganic).

Total Lab Hours

- Enter the number of lab hours that the course meets over the entire semester/quarter.
- For example, for a 3-hour lab that meets weekly for 16 weeks, the value entered here should be 48.
- For lecture courses this value should be 0.

Total Class Hours

- Enter the total number of classroom hours that a course meets over the entire semester/quarter.
- For example, for a 90 minute lecture that meets twice a week for 16 weeks, the valued entered should be 48.
- For lab courses this value should be 0.

Laboratory Courses

IMPORTANT

All laboratory courses should be entered as STAND ALONE courses, even if they are coupled courses in your catalog.

Last edit: 06092020-mmb

This distinction makes the lecture and lab available as separate courses in the contact hour table.

For example:
Organic chemistry (CHEM231) is a 4-credit course that includes 3 hours of lecture each week (for 3 credits) and 3 hours of lab (for 1 credit).
Enter the course into CPARS as follows:

CHEM231	Organic Chemistry I	3 credits	0 Lab Hours	48 Class Hours
CHEM231L	Organic Chemistry I Lab	1 credit	48 Lab Hours	0 Class Hours

Check the box to indicate that this is a laboratory course.

Online Courses

- Check this box only if the course is listed in your catalog as an online course.
- Do not check this box if the course was moved online due to COVID-19.
- If you offer multiple sections of a course, and one of those sections is online and the rest are face-to-face, then do NOT check this box.

Prerequisite Course Number

For In-Depth courses only

Enter all of the course prerequisites. Please note that all in-depth courses must have a foundation or in-depth course prerequisite.

Biological Macromolecules

If a course includes coverage of biological macromolecules and you would like to use it to meet the MSN requirement, please check this box.

Tracks

For each track entered, please indicate if the course is

- Required
- Alternative/Elective

Page 17: Curriculum – Additional Information (uploads)

Use this page to upload all of your syllabi, exams, experiment lists, and other supporting documents.

Category: In depth courses

Syllabi and Exams

- Exams & Syllabi from FIVE in depth courses; the courses should span ABIOP if possible.
  - Syllabi should
    - Include a list of topics taught
    - Include the course name and number
    - Include the semester and year that the course was taught
    - Correspond to the most recent offering of the course (within the previous 2 years)
- If possible, the information should correspond to the most recent offering of the course.
- If you haven't offered FIVE in depth courses, then you can substitute in a foundation course

Naming

- Combine syllabi from all courses into a SINGLE PDF

Last edit: 06092020-mmb

- o   Institution-Syllabi-2020.pdf
- Combine exams from all courses into a SINGLE PDF
    - o   Institution-Exams-2020.pdf

Category: Experiment Lists

Experiment Lists

- Experiment lists from lab courses in 4 of the 5 subdisciplines (ABIOP)
- Descriptive title of the experiment
- Instruments & compounds used
- Course number and title
- From most recent offering

Naming

- Combine lists from all courses into a SINGLE PDF
    - o   Institution-ExptList-2020.pdf

Category: Other

- If a foundation course is taught outside the chemistry department, please submit the syllabi and exams for the coursework *in this section.*
- Please submit syllabi and exams for courses taught outside the chemistry program if they are considered a **required** in-depth course. Include a description of how the course(s) builds on the molecular nature of chemistry.
- Please do not upload publications, research reports, support documents for the MSN requirement, or other materials in this section.

Naming

- Combine lists from all courses into a SINGLE PDF
    - o   Institution-Other-2020.pdf

Page 18: MSN Requirements (Section 5.1 p. 10)

Macromolecular, Supramolecular, and Meso/Nanoscale Materials - Section 5.1 p. 10

- Indicate whether the content is covered in a single course or distributed amongst multiple courses.
- If **biological macromolecules** coverage is used to meet up to half of the requirement, please indicate those courses that include this content in the <u>course section</u> of the report.

Uploads

Documents supporting the polymer requirement

- Syllabus
    - o   Single pdf, named Institution-MSN Area-Syllabus-YEAR
- Exams
    - o   Single pdf, name Institution-MSN Area-Exams-YEAR

Here MSN Area = Synthetic, Supra, Meso, or Nano

Last edit: 06092020-mmb

Page 19: Undergraduate Research (Section 6, pp. 16-17)

This section contains multiple conditional responses. Be sure to read the questions carefully.

Uploads

Research Reports & Rubrics

- If undergraduate research is used to fulfill requirements in the approved curriculum, please submit 3-5 research reports that are
    - Prepared by individual undergraduate students (i.e. not co-authored by students)
- Peer-reviewed publications can be submitted. The uploaded documents should:
    - Represent a breadth of disciplines (if possible).
    - Represent work with different faculty members (if possible).
    - Have been assessed and graded.

Naming

- Combine into two PDFs:
    - Institution-ResearchReports-YEAR
    - Institution-Rubric-YEAR

PUIs

If your department does not have a Ph.D. program, submit a list of all faculty and student publications, including conference proceedings and poster presentations from the last six years. Please underline the names of undergraduate student authors where applicable.

Page 20: Skill Development & Creating a Safety Culture (Section 7 pp. 17 – 19)

(Section 7 pp. 17-19)
For each of the skills listed, identify the course or courses where the skill is initially introduced, any other courses where the skill is developed further, and provide up to 3 examples of course assignments and assessments of that skill.

Page 21: Program Self Evaluation

Please provide a response for each item.

Page 22: Summary & Disclaimer

This page provides a summary of your responses.
- Scroll to the bottom of the page and check the disclaimer box on the lower left hand side of the page prior to submitting.
- The Print to PDF function will provide you with a pdf of your report, however, the page breaks do not occur in the most logical places. We are working improve the resultant PDF.
- When you have checked the disclaimer box, you are ready to submit the form.
    - Part I of the report is submitted if you see "Form Submitted Successfully".
    - If the form "jumps" to a page in the report, then you have validation errors that must be corrected before you can submit the report.
        - Make the changes, return to the Summary & Disclaimer page to resubmit.
        - You may receive another validation error; the system stops validating when it reaches the first error.

Last edit: 06092020-mmb

Part II – Contact Hour Table (Section 3.3 pp. 4-5)

Return to the institutional portal and click on "Start a New Report." The second part of the report (Part II) should be available. Click on the icon to open the form.

Page 1: Teaching Contact Hours

Do you have to complete the contact hour table?

For all faculty members, are the average number of contact hours per week 11 or fewer?

— Yes → Do any faculty members have 12 or more contact hours per week?

— Yes → Complete the contact hour table for faculty with 12 or more contact hours in either semester.

— No → Complete the contact hour table for all faculty members

— No → You do not have to complete the contact hour table. You can submit the form.
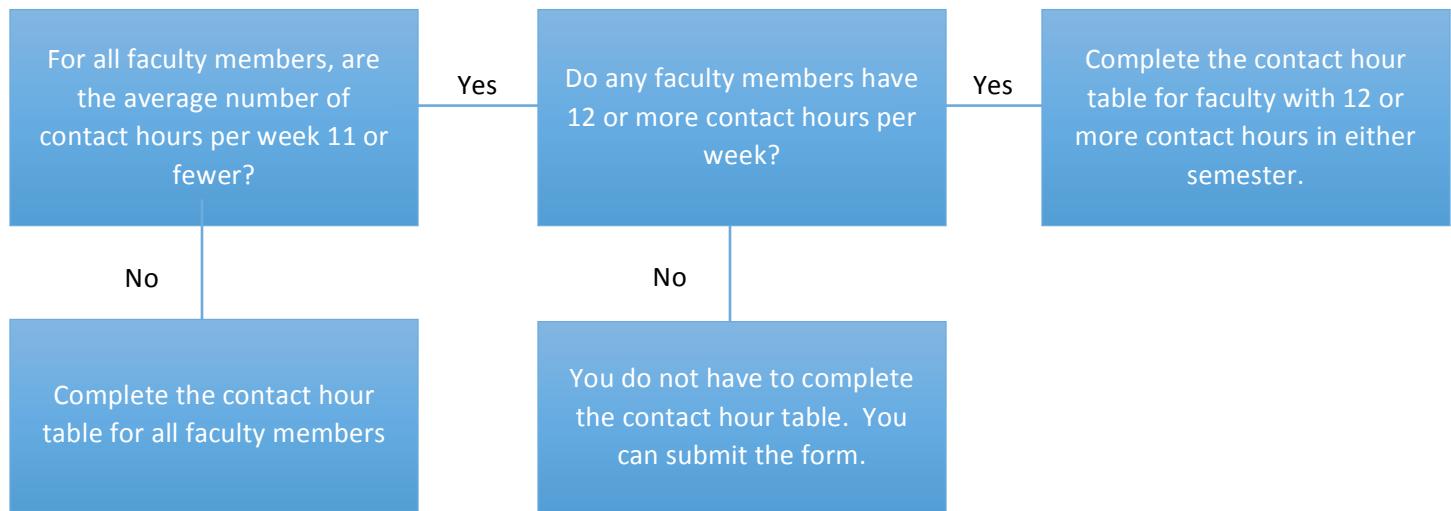
Completing the contact hour table

- For programs with a quarter-based academic calendar, please check the box indicating a quarter system.

For each faculty member:
- Enter the faculty member's name. If the name is currently in the database, the "Type" and "Faculty Rank" fields will automatically populate.
- If the faculty member's name is not in the database, uncheck the box "Existing Faculty" and complete the fields that appear.
- Courses that you added in Part I of the report will be available in the "Course Number" field. Start typing in the course number (e.g. CHEM123) and a dropdown menu of courses will appear. Choose the correct course.
- Enter the class time and number of times that the course was taught each week. The number of contact hours will be automatically calculated using this formula: Contact Hours = (class time x number offerings)/60
  - Examples:
    - Prof A taught a section of CHEM233 that met MWF for 50 minutes.
      - Class time = 50
      - Number of times offered = 3
    - Prof A taught another section of CHEM223 that met TuTh for 75 minutes.
      - Class time = 75
      - Number of times offered = 2
    - Prof B taught two sections of CHEM123 that met MWF for 50 minutes
      - Use TWO ENTRIES
      - Class time = 50
      - Number of times offered = 3

- Complete an entry for each faculty member as required (see above)

Additional Guidance & Best Practices - Course Categories

Foundation courses: Provide the first experience in each of the sub-disciplines: Analytical, Biochemistry, Inorganic, Organic, and Physical (ABIOP). Foundation courses build on the concepts covered in the introductory course and provide the breadth of content needed for the in-depth courses.

Requirements:
- Semester: 1 course (3 credits) **in each** sub-disciplines, ABIOP.
- Quarters: 8 courses (3 credits each) that include the equivalent **of at least 1 quarter in each** of the sub-disciplines, ABIOP.
- ***In general, a foundation course should provide 45 hours of instruction in each sub-discipline for a total of 225 hours of foundation content.***

Frequency: Each foundation course must be taught annually, however if a course is taught every other year and a clear path to completing the degree in 4 years is available, the program is still compliant with the Guidelines.
- Semester: 4 courses taught annually; must cover 4 of 5 sub-discipline areas
- Quarters: At least 6 of 8 taught each academic year.

Best practices
- The first experience in a yearlong course (e.g. organic, physical chemistry) is categorized as a foundation course; the second is an in-depth course.
- A foundation course cannot use a general chemistry textbook
- If a course is taught outside of the chemistry department (e.g. biochemistry), then it must require general chemistry as a pre-requisite. Course materials for this course must be provided.
- Content from a sub-discipline can be distributed amongst multiple courses and still meet the guidelines. This may be accomplished by indicating the number of hours taught in the sub-discipline and showing that students receive the equivalent of 45 hours of content in each sub-discipline. Provide documentation of this by submitting all associated course materials.

In-depth courses: These courses focus on depth rather than breadth. Each must have a foundation course or another in-depth course as a pre-requisite. Research experiences cannot be included as one of the four in-depth courses taught annually, however they *can* be used by students to fulfill the in-depth degree requirements.

Requirements
- Semester: 4 courses that provide a minimum 180 hours of instruction.
- Quarters: 6 courses that provide a minimum of 180 hours of instruction.
- These courses do not have to cover all of the sub-disciplines.
- Laboratory components of lecture courses are not included as in-depth coursework regardless of whether the lab component is coupled or uncoupled from the lecture component.
  - For example: Organic II can be counted as an in-depth course, but if you offer a 4 credit course (3 hours of lecture with a 3 hour lab), then only 3 credits will "count" toward the 12 credits required for in-depth coursework.
- The same course cannot be used as both a foundation and in-depth course.
- The course cannot be the first experience in one of the sub-disciplines *even if* it requires a foundation pre-requisite.
- The course can be an elective course for the certified degree
- Research cannot be used towards the in-depth course requirement by the program, however, **students** can use it to fulfill their in-depth requirements for certified degree.

Frequency
- Semester: 4 courses must be taught each academic year

Last edit: 06092020-mmb

- Quarters: 6 courses must be taught each academic year

Best practices

- 1- and 2-credit topical courses can count toward the requirement of teaching four in-depth courses a year using the following schemes.
    - Three 1-credit topical courses = One in-depth course (3 hours of instruction)
    - Three 2-credit topical courses = Two in-depth courses (6 hours of instruction)
- Seminar courses that have a topical area of chemistry as their focus often count as in-depth courses, even when they do not have a foundation course as a pre-requisite.
- Seminar courses that focus on professional development activities (e.g., resume writing) and/or general skills development (e.g., preparation of a department seminar, writing a report from a literature review) do not count as in-depth courses.