The mission of the Physical Sciences and Engineering (PSE) Division is to understand and manipulate matter at all scales – nano, meso, macro –, in all forms – from bulk, to divided colloids and fluids – as well as the interaction of matter with external stimuli in order to create knowledge, design new materials, model complex systems and engineer technologies in focused domains: water, energy, and the environment. Research in the Division and affiliated Research Centers includes areas such as catalysis and bioengineering; polymers and composites; computational chemistry and computational material sciences; energy production, storage and conversion; membranes for water purification, gas and liquid separation; novel materials, nanodevices and systems; theoretical physics and physical chemistry, sensors and smart devices for the detection of pollutants and the purification of air, water, and food; earth sciences, mechanics and geomechanics; oil exploration and recovery; and CO2 sequestration.

The PSE Division offers five graduate programs corresponding to five core disciplines: Chemical and Biological Engineering, Chemical Science, Earth Science and Engineering, Material Science and Engineering, and Mechanical Engineering. In all programs, students are offered modules consisting of lectures, seminars, and laboratory classes and are expected to conduct independent research. PSE also boasts excellent facilities and resources, in particular through its five Research Centers: Catalysis Center (KCC), Clean Combustion Research Center (CCRC), Solar & Photovoltaics Engineering Research Center (SPERC), Advanced Membranes and Porous Materials Center (AMPMC), that are all superbly equipped with most advanced instruments and techniques. The fifth Center, the Upstream Petroleum Engineering Research Center (UPERC), is under creation. With a pool of more than fifty renowned Faculty members, PSE provides students with a wide range of expertise for their scientific mentoring and education.

Prof. Yves Gnanou
Dean of Physical Science & Engineering Division
# Table of Contents

## Chemical Science Program Guide 2015-2016

<table>
<thead>
<tr>
<th>Program Guides</th>
<th>KAUST University Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Aims and Scope</td>
<td>6. Kaust University Requirements</td>
</tr>
<tr>
<td>2. Assessment Test</td>
<td>6.1 Program and Degrees</td>
</tr>
</tbody>
</table>

## Masters Requirements

<table>
<thead>
<tr>
<th>3. Master’s Degree</th>
<th>6.1 Program and Degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1. Master’s Course Requirements</td>
<td>7. Master’s Program</td>
</tr>
<tr>
<td>3.2 Thesis Option</td>
<td>7.1 Thesis Requirements</td>
</tr>
</tbody>
</table>

## Doctor of Philosophy Requirements

<table>
<thead>
<tr>
<th>4. Doctor of Philosophy</th>
<th>7.2 Non-Thesis Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 P.h.D Course Requirements</td>
<td>8. P.h.D Program</td>
</tr>
<tr>
<td>4.2 Designation of Dissertation Advisor</td>
<td>8.1 P.h.D Degree Requirements</td>
</tr>
<tr>
<td>4.3 Qualification Phase</td>
<td>8.2 Candidacy</td>
</tr>
<tr>
<td>4.4 Preliminary Dissertation Defense Committee</td>
<td>8.3 Dissertation Research Credits</td>
</tr>
<tr>
<td>4.5 Dissertation Proposal Defense</td>
<td>8.4 Dissertation and Dissertation Defense</td>
</tr>
<tr>
<td>4.6 Dissertation and Final Defense</td>
<td></td>
</tr>
</tbody>
</table>

## Program Course Descriptions

| 5. Program Courses and Descriptions | |
|-------------------------------------||

## University Guidelines

<table>
<thead>
<tr>
<th>10. Grading</th>
<th>11Transferring Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1 Incomplete Grades</td>
<td>11.1Transferring Credits</td>
</tr>
<tr>
<td>10.2 In Progress (IP) grade</td>
<td>11.2 Policy for Adding and Dropping Courses</td>
</tr>
<tr>
<td>10.3 Research or Seminar courses</td>
<td>11.3 Program Planning</td>
</tr>
<tr>
<td>10.4 Cumulative Grade Point Average</td>
<td></td>
</tr>
<tr>
<td>10.5 Academic Standing</td>
<td></td>
</tr>
</tbody>
</table>
1. Aims and Scope
The KAUST Chemical Sciences Program (ChemS) was established in 2010 to provide a modern, research-oriented education in Chemistry. Leveraging the outstanding facilities at KAUST, the program distinguishes itself by a clear focus and strong emphasis on current research challenges related to catalysis and materials. Within these two (2) main interdisciplinary research thrusts, the following distinct research orientations are currently addressed:

This degree program is one (1) of the programs offered by KAUST’s Division of Physical Sciences & Engineering (PSE). It takes advantage of the prowess of faculty associated with three (3) research centers: Catalysis, Advanced Membranes & Porous Materials, and Solar & Renewable Energy.

2. Assessment Test
Students come to KAUST from a wide variety of programs and backgrounds. To facilitate the design of an appropriate study plan for each individual student, all incoming students without a M.S. degree will take an assessment in the orientation week. There is no grade for the assessment. The purpose of the assessment is to determine whether students have mastered the prerequisites of graduate-level courses taught in the program. The Advisor uses the results of the assessments to design, if necessary, a study plan with a list of courses that would address content areas that may impede a student from successful completion of the degree requirements and that need improvement. Students are encouraged to prepare for the assessment by refreshing the general knowledge gained from their undergraduate education before arrival to KAUST. The Program requirements must be satisfactorily completed in addition to the University degree requirements.

3. Master’s Degree
The Master of Science (M.S.) degree at KAUST is a 36-credit program. Students are expected to complete the M.S. degree in three (3) semesters and one (1) summer session. Degree requirements are divided into three (3) sections:

- Core Curriculum;
- Elective Curriculum
- Research/Capstone Experience.

The M.S. degree is awarded upon successful completion of a minimum of 36 credit hours. A minimum GPA of 3.0 must be achieved to graduate. Individual courses require a minimum of a B- for course credit.

Core Courses (12 credit hours):
This portion of the degree is designed to provide a student with the background needed to establish a solid foundation in the program area. Select three (3) Core Courses from Section 5 “Master’s Course requirements”.

Compulsory Lab Rotation: In addition all incoming MS students are required to enrol into a rotation course during their first semester in the program. The goal of this course is to introduce students to various ChemS research groups in order to aid them in the selection of a research Advisor. Rotation assignments will be made by the mutual approval of a designated faculty and the student. Students with a pre-identified Advisor may spend their entire rotation period in a given lab with the approval of this Advisor and program chair.

Elective Courses (9 credit hours):
This portion of the degree is designed to allow each student to tailor his/her educational experience to meet individual research and educational objectives. The three (3) elective courses are selected in coordination with the student’s Academic Advisor and/or research Advisor.

Research Experience (15 credit hours):
This portion of the degree is designed to allow each student to gain the required chemist’s hands-on experience. Students are anticipated to select a research Advisor upon completion of their Lab Rotation training by the end of the first semester. Starting from the second semester, students are expected to be fully committed to perform research in their elected lab, in addition to their courses. Although, students are expected to work a minimum of 3 hours per week for each research credit.

Seminar/WEP
All students are required to register and receive satisfactory grades for three (3) semesters of the program Graduate Seminar to meet degree requirements.

Winter Enrichment Program: Students are required to satisfactorily complete at least one (1) full Winter Enrichment Program (WEP).

3.1. Master’s Course Requirements
ChemS 320. Advanced Organic Chemistry I
ChemS 330. Advanced Inorganic Chemistry I
ChemS 340. Advanced Organic Chemistry II
ChemS 350 Advanced Inorganic Chemistry II
ChemS 360. Advanced Physical Chemistry I
ChemS 370. Advanced Physical Chemistry II
Lab Rotation:
ChemS 296. Lab Rotation

Elective Courses:
Core courses above can also be used to meet elective requirement.
ChemS 210. Material Chemistry I
ChemS 212. Spectroscopy Analysis
ChemS 214. Nano-catalysis
ChemS 215. Polymers and Polymerization Processes
ChemS 218. Photo and Electro Catalysis
ChemS 220. Organometallic Chemistry  
ChemS 240. Supramolecular Chemistry  
ChemS 250. Material Chemistry II  
ChemS 301. Crystallography and Diffraction  
ChemS 319. Bioinorganic Chemistry  
ChemS 326. Biocatalysis

Seminars:  
ChemS 298. Chemical Sciences Graduate Seminar (M.S.)  
ChemS 398. Chemical Sciences Graduate Seminar (Ph.D.)

Research:  
ChemS 297. Thesis Research  
ChemS 299. Directed Research  
ChemS 397. Ph.D. Dissertation Research  
ChemS 399. Directed Research

3.2 Thesis Option
Students are permitted to register for more than 15 credits of M.S. thesis research as necessary and with the permission of the Thesis Advisor.

The student may select an Advisor from another program at KAUST to become project-affiliated for the specific thesis project only with the approval of the Program Chair. Project-affiliation approval must be completed prior to commencing research.

Evaluation of satisfactory completion of M.S. Thesis work is performed by a committee.

MS Thesis Defense Committee
The MS Thesis Defense committee, which must be approved by the student’s Dean, must consist of at least three members, and typically includes no more than four members. At least two of the required members must be KAUST faculty. The Chair plus one additional faculty member must be affiliated with the student’s program. This membership can be summarized as:

<table>
<thead>
<tr>
<th>Member</th>
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</tr>
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<td>2</td>
<td>Faculty</td>
<td>Within Program</td>
</tr>
<tr>
<td>3</td>
<td>Faculty or Approved Research Scientist</td>
<td>Outside Program</td>
</tr>
<tr>
<td>4</td>
<td>Additional Faculty</td>
<td>Inside or outside KAUST</td>
</tr>
</tbody>
</table>

Notes:  
- Members 1 – 3 are required. Member 4 are optional.  
- Co-chairs may serve as Member 2, 3 or 4, but may not be a Research Scientist.  
- Adjunct Professors and Professor Emeriti may retain their roles on current committees, but may not serve as chair on any new committees.  
- Professors of Practice and Research Professors may serve as Members 2, 3 or 4 depending upon their affiliation with the student’s program. They may also serve as co-chairs.  
- Visiting Professors may serve as Member 4.

For a list of faculty and their affiliations: http://www.kaust.edu.sa/faculty-Advisors.html

Thesis Defense Requirements:
- An oral defense of the thesis is required. A requirement of a public presentation and all other details are left to the discretion of the Thesis Committee.  
- A written thesis is required. It is advisable that the student submits a final copy of the thesis to the Thesis Committee members at least two (2) weeks prior to the defense date.  
- The student is required to comply with the university formatting guidelines provided by the library: http://libguides.kaust.edu.sa/theses  
- The student is responsible for scheduling the thesis defense date with his/her Thesis Committee.

A pass is achieved when the committee agrees with no more than one (1) dissenting vote otherwise the student fails. The final approval must be submitted no more than three (3) days after the defense.

4. Doctor of Philosophy
The Doctor of Philosophy (Ph.D.) degree is designed to prepare students for careers in research and industry. It is offered exclusively as a full-time program. There is a minimum residency requirement at KAUST of 3.5 years for students entering with a B.S. degree and 2.5 years for students entering with a M.S. degree. A minimum GPA of 3.0 must be achieved on all doctoral coursework. Individual courses require a minimum of a B- to earn course credit.

The Ph.D. program includes the following requirements:
- Designating a Dissertation Advisor  
- Successful completion of program coursework  
- Passing the Qualifying Examination  
- Passing the Dissertation Proposal Defense to obtain candidacy status  
- Preparing, submitting and successfully defending a doctoral dissertation.

4.1 P.h.D Course Requirements
The required coursework varies for students entering the Ph.D. program with a B.S. degree or a relevant M.S. degree. Students holding a B.S. degree must complete all program core courses and elective courses outlined in the Master’s degree section and are also required to complete the Ph.D. courses below. Students entering with a B.S.
degree may also qualify to earn the M.S. degree by
satisfying the M.S. degree requirements; however it is the
student’s responsibility to declare his/her intention.
Students entering the Ph.D. program with a relevant M.S.
degree must complete the requirements below, though
additional courses may be required by the Dissertation
Advisor.

Ph.D. Courses:

- Two (2) 300-level courses.
- Graduate Seminar 398 (non-credit): All students are
required to register and receive Satisfactory grades
for four (4) semesters of the program. Graduate
Seminar and present at least once during the time at
KAUST.
- Winter Enrichment Program: Students are required
to complete at least one (1) full Winter Enrichment
Program (WEP) as part of the degree requirements. Students
who satisfactory completed WEP
requirements are not required to enrol in WEP for a
second time in the Ph.D. degree.

Students entering the program with a M.S. degree from
KAUST may transfer coursework toward the Ph.D.
program requirements by the program and approved by
the Program Chair.

Students transferring from another university Ph.D.
program may receive some dissertation research and
coursework credits on a case by case basis for related
work performed at the original institution upon approval by
the Dean. However, such students must still satisfy the
Qualifying Exam and Dissertation Proposal Defense
requirements at KAUST. If these milestones were passed
at the original institution, the proposal may be the same if
approved by the Dissertation Advisor.

4.2 Designation of Dissertation Advisor

The Ph.D. Dissertation Advisor can be any of the program-
affiliated faculty member. The student may also select an
Advisor from another program at KAUST to become
project-affiliated for the specific dissertation project only
with the approval of the Program Chair. Project-affiliation
approval must be completed prior to commencing research.

Unless a student has a compelling scientific reason, he/
she will not be allowed to change his/her Advisor. Should
the student face scientific issues with their research, they
should inform the GPC and arrange to meet with the
Program Chair. Prior to any transfer approved by the
Program Chair, the new Advisor is strongly advised to
consult with the current Advisor.

For a list of faculty and their affiliations: http://www.kaust.
edu.sa/faculty-advisors.htm

4.3 Qualification Phase

After completion of the course requirements, the student
must begin Dissertation Research (ChemS 397) and
successfully complete the required Ph.D. Qualification
Milestones to be considered a Ph.D. candidate. These
milestones consist of the Qualifying Examination and the

4. 4 Preliminary Dissertation Defense
Committee

The Preliminary Dissertation Committee must include the
following members:

- First member: Dissertation Advisor who acts as
committee chair
- Second member: Program or Program-affiliated
faculty member
- Third member: KAUST faculty member from
another program

The Preliminary Dissertation Committee must be approved
by the Program Chair and the Dean. Once constituted, the
composition of the preliminary committee can only be
changed with the approval of both the Dissertation Advisor
and the Dean.

For a list of faculty and their affiliations: http://www.kaust.
edu.sa/faculty-advisors.html

Qualifying Examination

The purpose of the Qualifying Exam is to test the student’s
knowledge of the subject matter within the field of study. All
students entering the Ph.D. program with a B.S. degree
must take this examination within two (2) years of their
admission. Students admitted to the program with an M.S.
degree must take this exam between the first and second
year. The Qualifying Exam consists of an oral presentation
of an original proposal, which can be closely related to the
candidate’s area of research, but not the exact work done
in the lab. The student presentation will be followed by a
question and answer session regarding both the proposal
and general chemistry knowledge. Students who fail the
Qualifying Exam or who fail the retake will be dismissed
from the university.

4.5 Dissertation Proposal Defense

The purpose of the Dissertation Proposal Defense is to
demonstrate that the student has the ability and is
adequately prepared to undertake Ph.D. level research in
the proposed area. This preparation includes necessary
knowledge of the chosen subject, a review of the literature,
and preparatory theory or experiment as applicable. Ph.D.
students are required to complete the Dissertation Proposal
Defense three (3) months after passing the Qualifying
Exam. The Dissertation Proposal Defense includes two (2)
aspects: a written research proposal and an oral research
proposal defense. Ph.D. students must request to present
the Dissertation Proposal Defense to the Preliminary
Dissertation Committee at the beginning of the semester
they will defend their proposal. For further information
regarding the details of the Proposal Defense,

Dissertation Proposal Defense Evaluation

There are (2) possible outcomes from this Dissertation
Proposal Defense:
- Pass: with or without conditions
- Fail: with or without retake permitted

A pass is achieved when the committee agrees with no more than one (1) dissenting vote, otherwise the student fails.

In the instance of a Pass with Conditions, the entire committee must agree on the required conditions and if they cannot, the Dean decides. The deadline to complete the conditions is one (1) month after the defense date unless the committee unanimously agrees to reduce it.

In the instance of a Fail without Retake Permitted, the decision of the committee must be unanimous. The deadline to complete the retake is one (1) month after the defense date unless the committee unanimously agrees to reduce it.

Students who fail the Dissertation Proposal Defense or who fail the retake will be dismissed from the university. A student who successfully passes the Dissertation Proposal Defense is deemed a Ph.D. Candidate.

Research Data Presentation
A Research Data Presentation (RDP) must be made to the Preliminary Dissertation Committee no less than 6 months before the estimated date of defense. The committee will then appreciate the candidate readiness to defend. A peer-reviewed publication based upon the RDP is required to obtain a Chemical Sciences Ph.D. degree. This requirement could be waived under extenuating circumstances and at the discretion of the student’s dissertation committee and approved by the Program Chair.

4.6 Dissertation and Final Defense
The Ph.D. degree requires acceptance of the Dissertation and the passing of the final defense. The final defense is a public presentation that consists of an oral defense followed by questions and may last a maximum of three (3) hours.

The PhD Dissertation Defense committee, which must be approved by the student’s Dean, must consist of at least four members, and typically includes no more than six members. At least three of the required members must be KAUST faculty and one must be an examiner who is external to KAUST. The Chair plus one additional faculty member must be affiliated with the student’s program. The external examiner, is not required to attend the defense, but must write a report on the dissertation and may attend the dissertation defense at the discretion of the Program. This membership can be summarized as:

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<td>Outside Program</td>
</tr>
<tr>
<td>External Examiner</td>
<td>Outside KAUST</td>
</tr>
<tr>
<td>Approved Research Scientist</td>
<td>Inside KAUST</td>
</tr>
<tr>
<td>Additional Faculty</td>
<td>Inside or outside KAUST</td>
</tr>
</tbody>
</table>

Notes
- Members 1 – 4 are required. Members 5 and 6 are optional
- Co-chairs may serve as either Member 2, 3 or 6
- Adjunct Professors and Professor Emeriti may retain their roles on current committees, but may not serve as chair on any new committees
- Professors of Practice and Research Professors may serve as Members 2, 3 or 6 depending upon their affiliation with the student’s program. They may also serve as co-chairs
- Visiting Professors may serve as Member 6, but not as the external examiner

The Preliminary Dissertation Committee members can serve on the Ph.D. Dissertation Defense Committee subject to the Committee rules. Three (3) months before the final defense date the Dissertation Advisor is responsible for nominating three (3) well-qualified, potential External Examiners to the Program Chair who will appoint one (1) among the three (3) nominees to the student’s Dissertation Defense Committee. The External Examiner must hold a Full or Associate Professor position at a university other than KAUST. The External Examiner will review the dissertation and send a report within 3 weeks sharing his/her recommendations and questions prior to the final defense. Beyond the External Examiner, up to two (2) additional members can be added. All committee members must attend the final defense, by video conference if necessary.

The External Examiner must hold a Full or Associate Professor position at a university other than KAUST. The External Examiner will review the dissertation and send a report within three (3) weeks sharing his/her recommendations and questions prior to the final defense. Beyond the External Examiner, up to two (2) additional members can be added. All committee members must attend the final defense, by video conference if necessary.

Timeline
The student must determine the defense date with agreement of all the members of the Dissertation Committee. It is the responsibility of the student to notify the GPC at the beginning of the semester they intend to defend. It is expected that the student submits her/his written dissertation to the committee two (2) months prior to the defense date in order to receive feedback in a timely manner. The written dissertation is required to comply with the university formatting guidelines provided by the library: http://libguides.kaust.edu.sa/theses.
Evaluation

There are two (2) possible outcomes for Final Defense:

- Pass: with or without conditions
- Fail: with or without retake permitted

A pass is achieved when the committee agrees with no more than one (1) dissenting vote, otherwise the student fails.

In the instance of a Pass with Conditions, the entire committee must agree on the required conditions and if they cannot, the Dean decides. The deadline to complete the conditions is one (1) month after the defense date unless the committee unanimously agrees to reduce it.

In the instance of a Fail without Retake Permitted, the decision of the committee must be unanimous. Otherwise one (1) retake is permitted. The deadline to complete the retake is four (4) months after the defense date unless the committee unanimously agrees to reduce it. Students who fail the Final Dissertation Defense or who fail the retake will be dismissed from the university.

Evaluation of the Ph.D. Dissertation Defense is recorded by submitting the Result of Ph.D. Dissertation Defense Examination form within three (3) days after the defense.

Final Submission

Once post-examination corrections to the final dissertation document are made, students must submit the final draft of the dissertation document to Turnitin through Blackboard to complete an Originality Report. The Dissertation Advisor will confirm authenticity of this document. Upon this confirmation, the following forms must be submitted:

- Final version of the Dissertation
- Copyright Availability form
- Signed Final Approval of Dissertation for the Degree of Doctor of Philosophy form

5. Program Courses and Descriptions

ChemS 101 Basic Principles of General Chemistry (3-0-0):

ChemS 102 Basic Principles of Inorganic & Organic Chemistry (3-0-0):

ChemS 104 Basic Principles of Physical Chemistry (3-0-0):
A course covering basic concepts of thermodynamics and kinetics. Ideal gas law and its application; First law of thermodynamics: heat, work, heat capacity, Born-Habour cycle and its application; Second (and third) law of thermodynamics: entropy and its application; Helmholtz and Gibbs energies, spontaneity of reaction, standard Gibbs energy and its application; Chemical potential and phase rule; Fundamental equation of chemical thermodynamics and phase boundary; Raoult’s and Henry’s law; Phase diagram and distillation; Equilibrium, exothermic and endothermic reactions; Rate law: First order and second order reactions and simple examples (catalysis); Isotherm (Langmuir) and its application; Example of rate equation; Basic spectroscopy techniques relevant to thermodynamics and kinetics.

ChemS 210 Material Chemistry I (3-0-3):
Prerequisite: An understanding of the material covered in basic inorganic and organic chemistry. Presents students with a descriptive overview of Materials Chemistry with particular emphasis on the correlation between materials structure and their properties. This course will cover the following topics: molecular symmetry; crystallography; organic chemistry; porous materials; nano-structured materials and some material characterization techniques including powder X-ray diffraction and physical adsorption.

ChemS 212 Spectroscopy Analysis (3-0-3):
An introduction to the theory, application, and interpretation of four (4) major types of spectroscopy: absorption, infrared, and nuclear magnetic resonance spectroscopy, and mass spectrometry. It will focus heavily on interpretation of spectra and application of these tools to address questions of structure and reactivity of organic, organometallic, and inorganic materials. A training session of two (2)-dimensional nuclear magnetic resonance (COSY, NOESY, HMQC, HMB, etc) will be offered.

ChemS 214 Nano-Catalysis (3-0-3):
An introduction to basic concepts of nanochemistry including various synthesis methods (nanofabrication by scanning probe instruments, lithography, sol-gel, hydrothermal, self-assembly, crystal growth etc), advance synthesis and modifications of nanomaterials (organic functionalization, metallic, bi-metallic, core-shell, shape and morphology controlled synthesis etc), tools to characterize nanomaterials (scanning probe microscopy like AFM, STM, MRM and electron microscopy like SEM, TEM). This course will also cover green nanochemistry, nanotech & environment and finally applications in various fields with special emphasis on nano-catalysis. This course will empower the students to understand the scientific importance and technological potential of nanotechnology and students will able perform three (3) important activities related to Nanochemistry, i.e. synthesis, functionalization and application of nanomaterials.

ChemS 215 Polymers and Polymerization Processes (3-0-3):
The preparation, reactions and properties of high-molecular-weight polymeric materials of both natural and synthetic origin. Physical and organic chemistry of polymers for persons with a basic training in chemistry, physics, or engineering. The course is a survey of preparative methods of polymers; step growth polymerization, radical polymerization, ionic polymerization, ring-opening polymerization, polymerization by transition metal catalysts; and methods of characterization (nuclear magnetic resonance, Raman, infrared, intrinsic viscosity, differential scanning, calorimetry, gel permeation chromatography) and scattering (light, x-rays).

ChemS 218 Photo and Electro Catalysis (3-0-3):
Fundamentals of Photo and Electro catalysis presented with a novel approach for industrial applications.

ChemS 220 Organometallic Chemistry (3-0-3):
The course aims to cover current aspects of research in the field of organometallic chemistry. It is assumed that students taking this course are already familiar with general organometallic chemistry at the undergraduate level. The course materials can be divided into two (2) parts. We will cover topics relating to general organometallic chemistry to function as a refresher but with a practicing researcher’s bent and some special topics with focuses on catalysis and its applications.

ChemS 240 Supramolecular Chemistry (3-0-3):
Most of the crucial biological processes, such as antigen-antibody recognition and DNA replication, rely on non-covalent bonding and self-assembly. Taking lessons from Nature, chemists have crafted artificial systems capable of specific molecular recognition. Some of these fascinating molecules, such as crown ethers, cucurbiturils, and calixarenes, are pervasive in contemporary chemical literature. This course will examine the topics of non-covalent bonding, molecular recognition, and self-assembly.

ChemS 250 Material Chemistry II (3-0-3):
Prerequisite: ChemS 210 or consent of instructor. An introduction to electron microscopy based techniques: Scanning electron microscopy (SEM), Transmission electron microscopy (TEM), Electron diffraction (ED), Scanning transmission electron microscopy (STEM), Energy-filtered TEM (EFTEM), Energy dispersive X-ray analysis (EDX), and Electron energy loss spectroscopy (EELS). On-site demonstration of the electron microscope will be given.

ChemS 296 Lab Rotation (3-0-3):
MS students are expected to go through a lab rotation their first fall semester. The objective of this course is to help students in identifying their future research advisor by exposing them to different research areas. MS students are expected to complete 3 rotations their first semester (3 weeks per rotation). A student upon the approval of the advisor may choose to spend 3 rotations in one (1) lab; this advisor will be the chosen research advisor. Students will choose at the end of their first semester the possible advisor(s) that they would like to work with. A faculty committee will then meet and place students according to mutual advisor/student agreement. The nature of the rotation may vary from one (1) lab to another depending on the advisor; thus some rotations can be research focused others can involve more literature and background work.

ChemS 297 Thesis Research (variable credit):
Prerequisite: Approval of Thesis Advisor. MS Thesis Master-level research leading to a formal written thesis and oral defense.

ChemS 298 Chemical Sciences Graduate Seminar:
M.S. level seminar focusing on special topics within the field.

ChemS 299 Directed Research (variable credit):
Prerequisite: Approval of Advisor. Master-level research.

ChemS 301 Crystallography and Diffraction (3-0-3):
The objective of this course is to present the basic concepts needed to understand the crystal structure of materials. Fundamental concepts including lattices, symmetries, point groups, and space groups will be discussed and the relationship between crystal symmetries and physical properties will be addressed. The theory of X-ray diffraction by crystalline matter along with the experimental X-ray methods used to determine the crystal structure of materials will be covered. Application of X-ray diffraction to proteins, electron diffraction and neutron diffraction will be briefly discussed.

ChemS 319 Bioorganic Chemistry (3-0-3):
Interdisciplinary research on the inorganic chemistry of life has developed into a major source of innovation for catalyst development, material chemistry and medicine. The course “Biological Inorganic Chemistry” details the numerous functions of inorganic materials and ions in
ChemS 320 Advanced Organic Chemistry I (3-0-3):
A focus on a deeper understanding of the structure and reactivity of organic molecules with an emphasis on reaction mechanisms. It is a review of aspects of physical organic chemistry, covering structure and bonding, stereochemistry, and kinetics and thermodynamics, as well as molecular orbital theory with an introduction to the use of computational tools, such as Gaussian 09.

ChemS 326 Biocatalysis (3-0-3):
Biocatalysis has become an integral part of modern industry technology enabling rapid developments in pharmacology, medicine, nutrition, analytics, environmental technology, fine chemical synthesis biofuel production and related areas. Starting out from basic food-processing fermentations e.g. related to bread baking or cheese making, today the results emerging from this discipline influence all areas of our daily life. Enzymes as nature’s catalysts set the benchmarks for artificial systems in terms of activity and selectivity. Correspondingly, biocatalysis is regarded a key-competence in biotechnology and chemical industry. The course “Biocatalysis” provides students with a detailed understanding of fundamental aspects of the area, while it focuses on current applications of biocatalytic systems. It is designed for Ph.D students in chemistry, biochemistry and biotechnology, yet interested students on the M.Sc. level are welcome.

ChemS 330 Advanced Inorganic Chemistry I (3-0-3):
Prerequisite: Adequate Knowledge in general chemistry rules and concepts. Generalizations of the periodic table and their relationship to classical and modern concepts of atomic and molecular structure. Inorganic stereochemistry including concepts of crystal chemistry, silicate chemistry, coordination theory, ligand field theory, catalysis, acid-base theory, reaction mechanisms, organometallic chemistry and a detailed consideration of selected groups of the periodic table.

ChemS 340 Advanced Organic Chemistry II (3-0-3):
Prerequisite: Adequate Knowledge in general chemistry rules and concepts. Reactivity and reactions of organic moieties including enolates, carbones, radicals, carbonyl compounds, and transition metal organometallics; mechanisms of named reactions; multistep total synthesis techniques and reactions; advanced NMR and mass spectrometric techniques as applied to research efforts in organic chemistry and related fields, such as pharmaceuticals, materials science, supramolecular synthesis, and crystal engineering.

ChemS 350 Advanced Inorganic Chemistry II (3-0-3):
Prerequisite: ChemS 330 or consent of instructor. Emphasis on concepts and applications of homogeneous and heterogeneous catalysis and the impact of such processes on the advancement of different industries.

ChemS 360 Advanced Physical Chemistry I (3-0-3):
Thermodynamics and Kinetics (3-0-3) Review fundamental concepts and laws of thermodynamics and kinetics. Learn and describe concepts of chemical potential, internal energy and chemical equilibrium of the system. Essence of kinetics to describe changes of chemical system with time, i.e., rates of chemical reactions, dealing with molecules in motion, collisions and diffusion of gases, and how to establish rate expression.

ChemS 370 Advanced Physical Chemistry II (3-0-3):
Theoretical Chemistry (3-0-3) Prerequisite: Adequate knowledge in general chemistry rules and concepts. Review of quantum mechanics from a postulational viewpoint; variational and matrix methods; time independent and time-dependent perturbation theory; applications to molecular systems including potential energy surfaces and reaction pathways.

ChemS 397 P.h.D Dissertation Research (variable credits):
Prerequisite: Approval of Thesis Advisor. P.h.D Dissertation-level research leading to a formal written dissertation and oral defense.

ChemS 398 Chemical Sciences Graduate Seminar:
Ph.D. level seminar focusing on special topics within the field.

ChemS 399 Directed Research (variable credits):
Prerequisite: Approval of Advisor. Doctoral-level supervised research.

6. KAUST University Requirements
Office of the Registrar

6.1 Program and Degrees

King Abdullah University of Science and Technology (KAUST) advances science and technology through bold and collaborative research. It educates scientific and technological leaders, catalyzes the diversification of the Saudi economy and addresses challenges of regional and global significance, thereby serving the Kingdom, the region and the world.

Research and education, as well as their transformative potential, are central to KAUST’s mission. KAUST has a three-part mission:

Research at KAUST — both basic and goal-oriented — is dedicated to advancing science and technology of regional and global impact. Research excellence inspires teaching and the training of future leaders in science and technology.

Research and education at KAUST energize innovation and enterprise to support knowledge-based economic diversification.

Through the synergy of science and technology, and innovation and enterprise, KAUST is a catalyst for transforming people’s lives.
KAUST Offers the Following two (2) Degrees

The M.S. degree typically takes three (3) semesters and a summer to complete (18 months). The degree allows flexibility for internships, research, and academics. Learn more about M.S. degree requirements.

The Ph.D. degree is typically a three- to four (4)-year post-master's degree. The Ph.D., involves original research, culminating in a research dissertation. Learn more about Ph.D. degree requirements.

Three (3) academic divisions, these are:

- Biological and Environmental Sciences and Engineering (BESE)
- Bioscience (B)
- Chemical Sciences (ChemS)
- Earth Science and Engineering (ErSE)
- Electrical Engineering (EE)
- Environmental Science and Engineering (EnSE)
- Marine Science (MarS)
- Mechanical Engineering (ME)
- Materials Science and Engineering (MSE)
- Physical Sciences and Engineering Division (PSE)
- Plant Science (PS)
- Physical, Chemical and Biological Sciences.

KAUST Offers the Following two (2) Degrees

Students are expected to complete the M.S. degree in three (3) semesters plus one (1) summer session. Degree requirements are divided into three (3) sections: Core Curriculum; Elective Curriculum; and Research/Capstone Experience.

Each program is administered by a Graduate Committee and a Graduate Chair. Courses for each program will be listed at the 100 (non-credit), 200, 300 or 400 level.

### 7. Master's Program

#### Admissions

Admission to the M.S. program requires the satisfactory completion of an undergraduate B.S. degree in a relevant or related area, such as Engineering, Mathematics or the Physical, Chemical and Biological Sciences.

#### Master's Degree requirements

The M.S. degree requires successful completion of 36 credits. Students are expected to complete the M.S. degree in three (3) semesters plus one (1) summer session. Degree requirements are divided into three (3) sections: Core Curriculum; Elective Curriculum; and Research/Capstone Experience.

#### Core Curriculum (9-15 credits): This portion of the degree program is designed to provide a student with the background needed to establish a solid foundation in the program area and above that obtained through undergraduate studies.

#### Elective Curriculum (9-15 credits): This portion of the degree program is designed to allow each student to tailor his/her educational experience to meet individual research and educational objectives. Depending upon the program and the objectives, this may be met by added coursework or by additional research experience.

#### Research/Capstone Experience (12 credits): The details of this portion of the degree program are uniquely determined by the student and his/her advisor and will involve a combination of research and other capstone experiences that build on the knowledge gained in coursework.

Satisfactory participation in KAUST's Summer Session and Winter Enrichment Period (WEP) is mandatory. Summer Session courses are credit bearing and apply toward the degree. WEP courses do not earn credit towards the degree.

At least thirty-six (36) degree credits must be completed in graduate-level courses and research projects. These courses should be 200-level or above and must be approved by the student's advisor. Additional non-credit bearing activities, such as graduate seminars, may be required by the Program. Details on the specific program expectations, as well as the difference between the thesis and non-thesis degree options can be found through the link in the Program Guide http://www.kaust.edu.sa/study.html For a list of eligible faculty advisors, see: http://www.kaust.edu.sa/faculty-advisors.html

### 7.1 Thesis Requirements

Students wishing to pursue a thesis as part of their M.S. degree, must identify a research advisor and must file for Thesis status.

The application for the thesis option is due to the Registrar's Office by the ninth week of the student's second semester at KAUST.

Criteria for Acceptance into the Master's Degree with Thesis program.

Students should have a well-constructed thesis proposal that includes a time-line for completion.

The thesis proposal must be approved by the research advisor and the Dean of the Division.

In the case of an optional thesis program, the student should have a minimum GPA of 3.2 and at least 12 credit hours completed at the conclusion of the first semester and be registered in at least 12 credit hours during the second semester.

The research advisor must indicate that he/she endorses the thesis topic and scope of work and that it could reasonably be completed by the end of the third semester. Alternatively, the faculty member agrees to a longer time frame, not to exceed the end of the fourth semester, and to cover the student and experimental costs that accrue during this period.

The student's program of study should be structured such that the student may change to the M.S. without Thesis option and finish the degree by the end of the student’s third semester.

#### Thesis Defense

Evaluation of satisfactory completion of M.S. thesis work is performed by the MS Thesis Defense Committee.

The evaluation of M.S. thesis credits comprises of a
satisfactory or unsatisfactory grade. The requirement of a public seminar based on the student's work is left to the discretion of the M.S. thesis advisor.

The student is responsible for scheduling the thesis defense date with his/her supervisor and committee members. It is advisable that the student submits a written copy of the thesis to the thesis committee members at least two (2) weeks prior the defense date.

**MS Thesis Defense Committee**

The MS Thesis Defense committee, which must be approved by the student’s Dean, must consist of at least three members, and typically includes no more than four members. At least two of the required members must be KAUST faculty. The Chair plus one additional faculty member must be affiliated with the student’s program. This membership can be summarized as:

<table>
<thead>
<tr>
<th>Member</th>
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<th>Program Status</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3</td>
<td>Faculty or Approved</td>
<td>Outside Program</td>
</tr>
<tr>
<td></td>
<td>Research Scientist</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Additional Faculty</td>
<td>Inside or outside KAUST</td>
</tr>
</tbody>
</table>

**Notes**

- Members 1 – 3 are required. Member 4 are optional
- Co-chairs may serve as Member 2, 3 or 4, but may not be a Research Scientist
- Adjunct Professors and Professor Emeriti may retain their roles on current committees, but may not serve as chair on any new committees
- Professors of Practice and Research Professors may serve as Members 2, 3 or 4 depending upon their affiliation with the student’s program. They may also serve as co-chairs
- Visiting Professors may serve as Member 4

**7.2 Non-Thesis Option**

Students wishing to pursue the Non Thesis options must complete a minimum of 6 credits of directed research credits (299) is required. Summer internship credits may be used to fulfill the requirement provided that the summer internship is research-based. Summer internships are subject to approval by the student’s Academic Advisor.

Students must complete the remaining credits through one (1) or a combination of the options listed below:

- Broadening Experience Courses: Courses that broaden a student’s M.S. experience.
- Ph.D.-Level Courses: Courses numbered 300 or greater. Any course in the Ph.D core requirements that is passed with a minimum grade of B– may be used towards meeting the core Ph.D requirements of the program if the student chooses to continue for a Ph.D degree in at KAUST.
- Internship: Research-based summer internship (295).

Students are only allowed to take one (1) internship.

It should be noted that a student may also combine courses to satisfy the six (6)-credit requirement. For example, a student could take one (1) Ph.D.-level course and one (1) graduate-level course in another program. A student may not enrol in two (2) summer internships.


For a list of eligible faculty advisors, see: http://www.kaust.edu.sa/faculty-advisors.html

Students may select a KAUST faculty member from another program to act as a research advisor (for either thesis or directed research), but must provide a one (1)-page description of the research and an explanation of how such research would be relevant to the degree program. Upon approval by the program and the Dean, the faculty member would be allowed to act as an affiliated faculty member and advisor for the student.

Please Note: Degree Programs may have additional requirement to those listed above.

**8. P.h.D Program**

**Admissions**

Ph.D. students apply for and enter a specific degree program. A faculty advisor is either immediately designated (in the case of a student being recruited by a specific faculty member) or temporarily assigned; in the latter case, the student is expected to identify a research advisor by (at the latest) the end of the first year.

There are three (3) phases and associated milestones for Ph.D. students:

- Passing a qualifying exam;
- Passing an oral defense of the dissertation proposal;
- Dissertation phase with a final defense milestone.

**8.1 P.h.D Degree Requirements**

There is a minimum residency requirement (enrolment period at KAUST) of 2.5 years for students entering with an M.S. degree, 3.5 years for students entering with a B.S. degree. Qualification and advancement to candidacy are contingent upon:

- successfully passing Ph.D. coursework,
- designating a research advisor,
- successfully passing a qualifying exam, and
- writing and orally defending a research proposal.

Possible outcomes include pass, failure with complete retake, failures with partial retake, and failure with no retake. Students not permitted to retake the exam, or who fail the retake, will be dismissed from the University. The maximum allotted time for advancement to candidacy for a student entering with a M.S. degree is two (2) years; three (3) years
Satisfactory participation in KAUST’s Summer Session and Winter Enrichment Period (WEP) is mandatory. Summer Session courses are credit bearing and apply toward the degree. WEP courses do not earn credit towards the degree.

The required coursework is outlined below and see program for specific program course requirements:

**M.S. Degree**
- Core courses
- Elective courses

**Ph.D. Degree**
- Two (2) or more courses at the 300 level
- Graduate seminar if required by the program.

Students entering the program with a relevant M.S. from another institution may transfer coursework toward the requirements of the M.S. degree listed above upon approval of the program.

Students entering the program with a M.S. from KAUST may transfer coursework toward both the M.S. and Ph.D. requirements listed above upon approval of the program and based on their program of study at KAUST.

Students entering with a B.S. from another institution may transfer in up to 9 credits of graduate level coursework towards the above requirements upon approval of the program. In addition, students entering with a B.S. may also qualify to earn a M.S. degree by satisfying the M.S. degree requirements as part of the Ph.D. program.

Some degree programs may require a diagnostic entrance exam as a basis for admission, and students may be required to complete additional coursework depending on their degree-granting institution. If the M.S. degree is from a subject other than the Ph.D. degree program, there may be additional courses required and specified by the advisor.

### 8.2 Candidacy
Achieving Ph.D. candidacy is contingent upon successfully passing a qualifying examination, acceptance by the research advisor of a written research proposal and successfully passing an oral examination. Details should be confirmed in the individual degree program material. For a list of eligible faculty advisors for any degree program see: http://www.kaust.edu.sa/faculty-advisors.html

Passing the qualification phase is achieved by acceptance of all committee members of the written proposal and a positive vote of all but, at most, one (1) member of the oral exam committee. If more than one (1) member casts a negative vote, one (1) retake of the oral defense is permitted if the entire committee agrees.

A conditional pass involves conditions (e.g., another course in a perceived area of weakness) imposed by the committee, with the conditional status removed when those conditions have been met. Once constituted, the composition of the qualification phase committee can only be changed upon approval by both the faculty research advisor and the division dean.

### 8.3 Dissertation Research Credits
Besides coursework (6 or more credit hours), dissertation research (course number 397) must be earned during the first (proposal preparation and defense) and second phases of the Ph.D. program. A full-time workload for Ph.D. students is considered to be 12 credit hours per semester (courses and 397) and 6 credit hours in summer (397 only). There is a minimum residency requirement (enrolment period at KAUST) of 2.5 years for students entering with an M.S. degree, 3.5 years for students entering with a B.S. degree. P.h.D students typically complete the degree in 5 years.

### 8.4 Dissertation and Dissertation Defense
The Dissertation Defense is the final exam of the Ph.D. degree. It involves a public presentation of the results of the dissertation research followed by a question and answer session by the PhD Dissertation Defense Committee. It is the responsibility of the student to inform the dissertation committee of his/her progress and meet deadlines for submitting defense date and graduation forms. It is expected that students will submit their dissertations to their committee six (6) weeks prior to the defense date in order to receive feedback from the committee members in a timely manner. However, the advisor may approve exceptions to this expected timeline. The dissertation format requirements are described in the KAUST Thesis and Dissertation Guidelines. http://libguides.kaust.edu.sa/theses

The result of the defense will be made based on the recommendation of the committee. There are four (4) possible results: (1) Pass: the student passes the exam and the dissertation is accepted as submitted; (2) Pass with revisions: the student passes the exam and the student is advised of the revisions that must be made to the text of the dissertation; (3) Failure with retake: normally this means the student must do more research to complete the dissertation. The student must revise the dissertation and give another oral examination within six (6) months from the date of the first defense; and (4) Failure: the student does not pass the exam, the dissertation is not accepted, the degree is not awarded, and the student is dismissed from the University.

### PhD Dissertation Defense Committee
The PhD Dissertation Defense committee, which must be approved by the student’s Dean, must consist of at least four members, and typically includes no more than six members. At least three of the required members must be
KAUST faculty and one must be an examiner who is external to KAUST. The Chair plus one additional faculty member must be affiliated with the student’s program. The external examiner, is not required to attend the defense, but must write a report on the dissertation and may attend the dissertation defense at the discretion of the Program. This membership can be summarized as:

<table>
<thead>
<tr>
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</tr>
</thead>
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<td>Faculty</td>
<td>Outside Program</td>
</tr>
<tr>
<td>4</td>
<td>External Examiner</td>
<td>Outside KAUST</td>
</tr>
<tr>
<td>5</td>
<td>Approved Research Scientist</td>
<td>Inside KAUST</td>
</tr>
<tr>
<td>6</td>
<td>Additional Faculty</td>
<td>Inside or outside KAUST</td>
</tr>
</tbody>
</table>

Notes

- Members 1 – 4 are required. Members 5 and 6 are optional
- Co-chairs may serve as either Member 2, 3 or 6
- Adjunct Professors and Professor Emeriti may retain their roles on current committees, but may not serve as chair on any new committees
- Professors of Practice and Research Professors may serve as Members 2, 3 or 6 depending upon their affiliation with the student’s program. They may also serve as co-chairs
- Visiting Professors may serve as Member 6, but not as the external examiner

It is the responsibility of the student to inform the dissertation committee of his/her progress and meet deadlines for submitting defense date and graduation forms. It is expected that students will submit their dissertations to their committee six (6) weeks prior to the defense date in order to receive feedback from the committee members in a timely manner. However, the advisor may approve exceptions to this expected timeline. The dissertation format requirements are described in the KAUST Thesis and Dissertation Guidelines. http://libguides.kaust.edu.sa/theses

9. Program Descriptions
The Master’s and Doctoral degree program requirements listed above represent general university-level expectations. The specific details of each degree requirements are outlined in the descriptions of the individual degree programs.

9.1 Course Notation
Each course is listed prefaced with its unique number and post fixed with (l-c-r) where:
- l is the lecture hours, to count toward fulfilling the student workload during a semester.
- c is the recitation or laboratory hours.
- r is the credit hours toward fulfilling a degree course requirement.

Eg CS 220 Data Analytics (3-0-3) has a total of three (3) hours of lectures per week, has no labs and earns 3 credits for the semester

10. Grading
The KAUST grading system is a 4.0 scale utilizing letter grades, and these are the only grades that will be assigned.

A  =  4.00  C  =  2.00
A- = 3.67  C- = 1.67
B+ = 3.33  D+ = 1.33
B  = 3.00  D  = 1.00
B- = 2.67  D- = 0.67
C+ = 2.33  F  =  0.00

I  =  Incomplete
IP =  In Progress
W  =  Withdraw
S  =  Satisfactory
U  =  Unsatisfactory
WF = Withdrew-Failed

10.1 Incomplete Grades
Students who complete the majority of the requirements for a course but are unable to finish the course may receive an incomplete (I) grade. A grade of Incomplete will be assigned only with the consent of the instructor of the course after the instructor and the student have agreed on the academic work that needs to be completed and the date it is due (but no later than the end of the second week of the following semester or session). When the requirements for the course are completed, the instructor will submit a grade that will replace the incomplete grade on the student’s academic record. Incompletes not completed by the end of the second week of the following semester or session will be changed to F (failing) grades.

Grades for students that are due to graduate
Note that any incomplete grades (as well as fail grades) will mean a student will not graduate or receive a diploma during the Commencement ceremony.

Incomplete grades are granted to individual students on a case-by-case basis. Incomplete grades should not be used as a mechanism to extend the course past the end of the semester.

Students are allowed only one (1) incomplete grade while in a degree program at KAUST.

10.2 In Progress (IP) grade
Thesis Research (297) or Dissertation Research (397) should be graded as IP (In Progress), S (satisfactory) or U (unsatisfactory) for each semester.

(These IP grades will be converted by the Registrar’s Office to “S” grades for all semesters, once the Office has been notified that the thesis or dissertation has been submitted to
10.3 Research or Seminar courses
Use the following grades for these research or seminar courses:

- 297 Thesis Research Either IP or U
- 397 Dissertation Research Either IP or U
- 295/395 Internship(summer) Either S or U
- 298/398 Seminar Either S or U
- 299/399 Directed Research Either S or U

Summer Session and Winter Enrichment Program
Satisfactory participation in KAUST’s Summer Session and Winter Enrichment Period (WEP) is mandatory. Summer Session courses are credit bearing and apply toward the degree. WEP courses do not earn credit towards the degree.

10.4 Cumulative Grade Point Average
A minimum GPA of 3.0 must be achieved in all coursework. Individual courses require a minimum of a B- for course credit.

10.5 Academic Standing
A student’s academic standing is based on his/her cumulative performance assessment and a semester performance based on the number of credits earned and GPA during the most recently completed semester.

Academic standing classifications are divided into four (4) categories of decreasing levels of academic performance: (1) Good Standing; (2) Academic Notice; (3) Academic Probation; and (4) Academic Dismissal.

**Cumulative Assessment**

<table>
<thead>
<tr>
<th>GPA</th>
<th>Academic standing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.00 – 4.00</td>
<td>Good Standing</td>
</tr>
<tr>
<td>2.67 – 2.99</td>
<td>Academic Notice</td>
</tr>
<tr>
<td>2.33 – 2.66</td>
<td>Academic Probation</td>
</tr>
<tr>
<td>Below 2.33</td>
<td>Academic Dismissal</td>
</tr>
</tbody>
</table>

**S/U Performance Academic Standing**

<table>
<thead>
<tr>
<th>Credits Earned</th>
<th>GPA Standing</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 2 credits</td>
<td>GPA Standing</td>
</tr>
<tr>
<td>3 – 5 credits</td>
<td>GPA Standing less one (1) category</td>
</tr>
<tr>
<td>6 – 8 credits</td>
<td>GPA Standing less two categories</td>
</tr>
<tr>
<td>9+ credits</td>
<td>Academic Dismissal</td>
</tr>
</tbody>
</table>

**Semester Assessment**

Registered in 12 credits

<table>
<thead>
<tr>
<th>Credits Earned</th>
<th>Academic Standing</th>
</tr>
</thead>
<tbody>
<tr>
<td>12+ credits</td>
<td>GPA Standing</td>
</tr>
<tr>
<td>9-11 credits</td>
<td>GPA Standing less one (1) category</td>
</tr>
<tr>
<td>6- 8 credits</td>
<td>GPA Standing less two category</td>
</tr>
<tr>
<td>0- 5 credits</td>
<td>Academic Dismissal</td>
</tr>
</tbody>
</table>

Registered in 9 credits

<table>
<thead>
<tr>
<th>Credits Earned</th>
<th>Academic Standing</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 + credits</td>
<td>GPA Standing</td>
</tr>
<tr>
<td>6 – 8 credits</td>
<td>GPA Standing less one (1) category</td>
</tr>
<tr>
<td>3 – 5 credits</td>
<td>GPA Standing less two category</td>
</tr>
<tr>
<td>0 – 2 credits</td>
<td>Academic Dismissal</td>
</tr>
</tbody>
</table>

**Definitions**

**Good Standing:**
Student is making satisfactory academic progress toward the degree.

**Academic Notice:**
Student is not making satisfactory progress toward the degree. A student placed on Academic Notice will be monitored in subsequent semesters to ensure satisfactory progress toward the degree (see Good Standing). If the student’s performance does not improve in the following semester, the student will be placed on academic probation.

**Academic Probation**
Student is not making satisfactory progress toward the degree. A student placed on Academic Probation will be monitored in subsequent semesters to ensure satisfactory progress toward the degree (see Good Standing). If the student’s performance does not improve in the following semester, the student will be academically dismissed.

**Academic Dismissal**
Student is not making satisfactory progress toward the degree and is unlikely to meet degree requirements. Dismissed students will be required to leave the University. If deemed eligible, dismissed students will have one (1) week from receiving notice of dismissal to file an appeal.

**Appeal Process for Students Academically Dismissed**
If the student is eligible to appeal, he/she must submit a written explanation why the dismissal should be rescinded along with any supporting documentation. The Committee on Academic Performance will hear the appeal and make a decision to grant or deny the appeal based on the appeal and documentation, the student’s past performance, and the likelihood that the student is capable of successfully completing his/her academic program. If the appeal is denied, the student will be required to leave the University. The decision of the Committee is final; no additional appeals are permitted.

**S/U Protection**
Due to the significant impact of U grades, a faculty member giving a U grade for a course involving 6 or more credits must obtain concurrence of the Dean prior to submitting the grade. If the grade is given for only a single class (including research credit) the number of credits will be capped at 6 when using the academic standing table displayed above.

**Returning to Good Standing**
A student not in good standing due to a GPA deficiency may return to Good Standing by improving his/her cumulative GPA such that it meets or exceeds 3.00. A student not in good standing due to U grades may return to Good Standing by completing at least 12 credits during the subsequent semester with no U grades and a semester GPA of at least 3.00 in traditionally graded courses.
11. Transferring Credits
A student may petition to transfer graduate credits from another university, upon approval of the Program Chair and the Registrar. Each student's application will be reviewed on a case-by-case basis. The following rules apply:
Up to three (3) graduate-level courses not to exceed nine credits may be transferred for credit. Courses transferred for credit cannot have been counted as credits for another granted degree. The course grade for any course to be transferred must be a B or above.
Courses transferred for degree credit must have been taken within three (3) years prior to admission to KAUST.
The student must submit a completed KAUST Transfer of Credit form and include the Course syllabus and course description.
The student is responsible for supplying an official transcript:
The transcript may be no more than three (3) months old.
The transcript must be in English or accompanied by a certified English translation.
The grading key must be included with the transcript.
The transcript must include the course name, level, grade and credit value.
The credit value of the course must be equivalent to a minimum of three (3) KAUST credit hours.

Course Transfer and Equivalency
Graduate credit hours taken from any KAUST program may be applied to other KAUST graduate programs under the guidelines of the degree program to which the student is admitted. Graduate courses taken from another university or KAUST program that are equivalent in level and content to the designated courses in a major track may be counted toward meeting the major track requirement if their equivalence is confirmed by the program chair.

Students transferring from other Ph.D programs may receive some dissertation research and coursework credit units, on a case-by-case basis, for related work performed at their original institution. However, such students must satisfy the written and oral requirements for a research proposal (if the proposal had been submitted and approved at the original institution, the proposal may be the same, if approved by the research advisor). The minimum residency requirement for enrollment of such students at KAUST is two (2) years.

12. Policy for Adding and Dropping Courses
A course may be added during the first week of the semester. Students may add courses after the first week with the permission of the instructor. Instructors have the right to refuse admission to a student if the instructor feels that the student will not have the time to sufficiently master the material due to adding the course late. A course may be dropped without penalty at any time during the first two (2) (2) weeks of the semester. Between the second and ninth week, students can drop a course but the course will appear on the student’s transcript with the grade of "W" (withdraw). After the ninth week of a full semester, courses may be dropped only under exceptional circumstances and with the approval of the Course Instructor, the Program Chair and the Registrar.

13. Program Planning
It is the sole responsibility of the student to plan her/his graduate program in consultation with her/his advisor. Students are required to meet all deadlines. Students should be aware that most core courses are offered only once per year.