Pre-Requisite Coursework for Dental School

PRE-HEALTH  Brian Clinton, Lecturer/Pre-Health Advisor, Brian_Clinton@uri.edu  
ADVISING: Schedule appointments via e-Campus advising: Click on “Professional/Honors” tab located at top-right.

Listed below are the courses required by dental schools as pre-requisites for admission. This worksheet is only a guide to the requirements of most programs. These courses should be taken before applying to dental school and before taking the required entrance examination (DAT). (Please note: Physics is the one exception, which is required for admission but is not on the DAT.) It is strongly recommended that the courses listed below be taken during the regular semesters at URI (not summer and not online). Note: Many schools require a C or better in the pre-requisite courses.

Pre-Admission Clinical Experience (shadowing): A critical component of a competitive dental school applicant is prior clinical experience in the dental field. This is highly recommended and required by most schools. Be sure to review the requirements for programs of interest, as the number of clinical experience hours required prior to application ranges from none to hundreds with a general practitioner. It is recommended that students begin clinical experiences as early as possible, with the goal of acquiring a minimum of 100 hours of clinical shadowing, including 50 with a general practitioner, prior to their application to dental school.

Students planning to pursue a pre-dental curriculum should regularly attend workshops and events offered by the Pre-Health Professions Advising Program.

BIOLOGICAL SCIENCES: 8-12 credits are required. Additional coursework may be required and is useful in preparation for dental school. (See reverse side.) The minimum requirements are:

___ BIO 101/103 (3+1 credits) AND ___ BIO 341 (Cell Bio - 3 credits)
OR ___ BIO 352 (Genetics - 4 credits)

CHEMISTRY:
Two semesters of general chemistry: AND Two semesters of organic chemistry:
___ CHM 101 w/ 102 (3+1 credits) ___ CHM 227 (3 credits)
___ CHM 112 w/ 114 (3+1 credits) ___ CHM 228 w/ 226 (3+2 credits)

PHYSICS: Two semesters are required. The three-course sequence of PHY 203/204/205 with labs may be substituted:
___ PHY 111 w/ 185 (3+1 credits) AND ___ PHY 112 w/ 186 (3+1 credits)

MATHEMATICS/STATISTICS: Not all programs stipulate a calculus requirement, but the most competitive candidates complete some calculus and statistics.

___ MTH 141 AND/OR ___ MTH 142 AND/OR ___ STA 307, 308, 409 or 411

COURSEWORK REQUIRED BY SOME DENTAL PROGRAMS, BUT NOT ALL:

BIOCHEMISTRY:
___ BCH 311* (3 credits) *Pre-req: One semester organic chemistry

ANATOMY & PHYSIOLOGY: * Note: Priority registration for these two courses is given to certain majors.
___ BIO 121* (4 credits) AND ___ BIO 242* w/ 244 (3+1 credits)
*Open to bio, kinesiology, nursing, pharmacy, pre-physical therapy, clinical lab science, dietetics, and biomedical engineering majors only.

MICROBIOLOGY:
___ MIC 201 or 211 (4 credits)

ENGLISH: Two courses are required (and, with careful planning, may also fulfill general education requirements). Most English, Writing, and Literature courses will fulfill this requirement, with the exception of Poetry. Select Honors courses (HPR 112/125/326) may also fulfill the requirement. Upper-level coursework is recommended when possible.

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“Pre-Health/Pre-Dental” is not a major, and students from any major can opt to follow the pre-dental curriculum in conjunction with their major and general education requirements. Dental schools expect applicants to pursue a challenging, broad-based undergraduate education. However, you should be careful to never take more credits than you can manage successfully. Successful applicants will achieve a grade point average of 3.5 and above.

Students preparing for dental school must complete all requirements for their chosen major, general education requirements, and the pre-requisites listed above. In addition to (or in conjunction with) those requirements, the courses listed below are wise choices for students preparing for a health profession. Pre-health students are also strongly encouraged to participate in the Honors Program.

OTHER SUGGESTED COURSEWORK:

Strongly recommended, but not required:
BIO 437 Fundamentals of Molecular Biology

Other good options, not required:
BCH 435 Introduction to the Biology and Genetics of Cancer
BIO 242/244 Human Physiology or BIO 201 Animal Physiology
BIO 302 Animal Development
BIO 121 Human Anatomy or BIO 404 Comp. Vertebrate Anatomy
BIO 445 Endocrinology
BIO 452 Advanced Topics in Genetics
MIC 333 Immunology and Serology
MIC 334 Virology
MIC 432 Pathogenic Bacteriology
MIC 450 Practical Tools for Molecular Sequence Analysis
MIC 483 Introductory Diagnostic Microbiology
MIC 491/BCH 491 Research in Microbiology or Biochemistry
HDF 200 Life Span Development I
HDF 201 Life Span Development II
APG 201 Human Origins (N)
SOC 300 Topics in Sociology (subject varies)

Courses to Consider for Gen Eds** & Free Electives:
BPS 203 Herbal Medicines and Functional Foods (N)
ENG 357 Literature and Medicine (A)
HIS 116 History of Western Science (L)
HIS 117 History of Medicine (L)
HIS 351 Historical Perspectives on Women and Health (L)
HPR xxx Various Honors Program classes. See web.
   ➔ note: HPR 309 Global Challenge of Emerging Infectious Disease (N)
PFL 212 Ethics (L)
PFL 215 Science and Inquiry (L)
PFL 314 Ethical Problems in Society and Medicine (L)
PHP 114 Responsible Health Care (S)
PHP 143 Sustainable Solutions for Global Health (S) (N)
THN 360 Impact of Death on Behavior (L)
   ➔ Any “Research Methods” coursework is beneficial.

**Note: Courses marked with (A), (L), (S), or (N) may fulfill fine
arts and literature, letters, social science, or natural science
genral education requirements, respectively. For students
pursuing a Bachelor of Arts, be mindful of the one-course-per-
discipline rule, i.e., you may not have all six credits come from
the same course code.

In addition to strong academics and standardized test scores, applicants are expected to have shadowed dentists, sought out other related experiences (e.g., through volunteering), and demonstrated a strong desire to serve others. Research experience is not required, but competitive applicants often partake in research. Because dentists work with their hands, dental schools also encourage activities that demonstrate manual dexterity, including fine motor skills and hand-eye coordination. (Manual dexterity can be developed through a variety of activities, such as music, art, sports, sewing, woodworking, soldering, or auto repair—activities you may already enjoy!)

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Most dental schools require that a committee letter of recommendation from the home institution accompany a student’s application for admission. To seek such endorsement, students must provide the Health Professions Advisory Committee (HPAC) with a dossier including five letters of recommendation (three from science faculty) in the early spring of the calendar year prior to the year in which they plan to commence their dental program (i.e., 16-18 months prior to entry).