School of Natural Sciences and Mathematics

Biology and Healthcare Management (Double Major) (BS)

Bachelor of Science in Biology and Healthcare Management (Double Major)

Degree Requirements (148-149 semester credit hours)

JSOM Faculty


Associate Professors: Mehmet Ayvaci, Nina Baranchuk, Zhonglan Dai, Rebecca Files, Surya N. Janakiraman, Robert L. Kieschnick Jr., Atanu Lahiri, Jun Li, Ningzhong Li, Livia Markóczy, Ramachandran (Ram) Natarajan, Naim Bugra Ozel, Young U. Ryu, Harpreet Singh, David J. Springate, Upender Subramanian, Shaojie Tang, Kelsey D. Wei, Han (Victor) Xia, Yexiao Xu, Alejandro Zentner, Jieying Zhang, Yuan Zhang, Feng Zhao, Yibin Zhou

Assistant Professors: Sheen Levine, Radha Mookerjee, Alejandro Rivera Mesias, Christian Von-Drathen, Guihua Wang, Steven Xiao, Zhe (James) Zhang

Associate Professors Emeriti: J. Richard Harrison, Jane Salk

Visiting Professor: Emily Choi


Clinical Associate Professors: Shawn Alborz, Dawn Owens, Carolyn Reichert

Clinical Assistant Professors: Moran Blueshtein, Judd Bradbury, Jeffery (Jeff) Hicks, Kristen Lawson, Liping Ma, Ravi Narayan, Parneet Pahwa, Nassim Sohaee
Professors of Instruction: Semiramis Amirpour, Mary Beth Goodrich, Chris Linsteadt, Luell (Lou) Thompson

Associate Professors of Instruction: Amal El-Ashmawi, Ayfer Gurun, Maria Hasenhuttl, Jennifer G. Johnson, Hubert Zydorek

Assistant Professors of Instruction: Julie Haworth, Daniel Karnuta, Victoria D. McCrady

Professors of Practice: Tiffany A. Bortz, Alexander Edsel, Rajiv Shah, Keith Thurgood

Associate Professors of Practice: Richard Bowen, Jackie Kimzey, Margaret Smallwood, Steven Solcher, Kathy Zolton

Assistant Professors of Practice: Edward Meda, Timothy Stephens

Senior Lecturers: Thomas (Tom) Henderson, Joseph Mauriello, Prithi Narasimhan, Matt Polze, Robert Wright

NSM Faculty

Professors: Rockford K. Draper, Juan E. González, Lawrence J. Reitzer, Stephen Spiro, Li Zhang, Michael Qiwei Zhang

Associate Professors: Zachary Campbell, Jeff L. DeJong, Nikki Delk, Heng Du, Tae Hoon Kim, Faruck Morcos, Kelli Palmer, Duane D. Winkler, Zhenyu Xuan

Assistant Professors: Nicole De Nisco, Nicholas Dillon, Purna Joshi, Jyoti Misra, Darshan Sapkota

Professors Emeriti: Hans Bremer, Lee A. Bulla, Donald M. Gray

Associate Professors Emeriti: Gail A. M. Breen, Dennis L. Miller

Clinical Professor: David Murchison

Research Assistant Professors: Lan Guo, Li Liu

Professors of Instruction: Scott A. Rippel, Uma Srikanth

Associate Professors of Instruction: Mehmet Candas, Wen-Ju Lin, Elizabeth Pickett, Ilya Sapozhnikov, Michelle Wilson

Assistant Professors of Instruction: Ida Klang, Meenakshi Maitra, Caitlin Maynard, Iti Mehta, Ramesh Padmanabhan, Jing Pan, Ruben D. Ramirez, Eva Sadat, Subha Sarcar, Zhuoru Wu

Senior Lecturer: Wen-Ho Yu

I. Core Curriculum Requirements: 42 semester credit hours

Communication: 6 semester credit hours

Select any 6 semester credit hours from Communication Core courses (see advisor)

Mathematics: 3 semester credit hours
MATH 2413 Differential Calculus

Or select any 3 semester credit hours from Mathematics Core courses (see advisor)

Life and Physical Sciences: 6 semester credit hours

CHEM 1311 General Chemistry I

or CHEM 1315 Honors Freshman Chemistry I

CHEM 1312 General Chemistry II

or CHEM 1316 Honors Freshman Chemistry II

Or select any 6 semester credit hours from Life and Physical Sciences Core courses (see advisor)

Language, Philosophy and Culture: 3 semester credit hours

Select any 3 semester credit hours from Language, Philosophy and Culture Core courses (see advisor)

Creative Arts: 3 semester credit hours

Select any 3 semester credit hours from Creative Arts Core courses (see advisor)

American History: 6 semester credit hours

Select any 6 semester credit hours from American History Core courses (see advisor)

Government/Political Science: 6 semester credit hours

GOVT 2305 American National Government

GOVT 2306 State and Local Government

Or select any 6 semester credit hours from Government/Political Science Core courses (see advisor)

Social and Behavioral Sciences: 3 semester credit hours

Choose one of the following:

BA 1310 Making Choices in Free Market Systems

BA 1320 Business in a Global World

ECON 2301 Principles of Macroeconomics

ECON 2302 Principles of Microeconomics

Or select any 3 semester credit hours from Social and Behavioral Sciences Core courses (see advisor)

Component Area Option: 6 semester credit hours
Choose two of the following:\[9\]

- **MATH 2414** Integral Calculus\[5, 6, 10\]
- **BA 1310** Making Choices in Free Market Systems\[4, 5\]
- **BA 1320** Business in a Global World\[4, 5\]
- **ECON 2301** Principles of Macroeconomics\[4, 5\]
- **ECON 2302** Principles of Microeconomics\[4, 5\]

Or select any 6 semester credit hours from [Component Area Option Core](https://catalog.utdallas.edu/2022/undergraduate/programs/nsm/biology-healthcare-management) courses (see advisor)

### II. Major Requirements: 85-86 semester credit hours

#### Business Major Preparatory Courses: 12 semester credit hours beyond Core Curriculum\[9\]

- **ACCT 2301** Introductory Financial Accounting\[4\]
- **ACCT 2302** Introductory Management Accounting\[4\]
- **BLAW 2301** Business and Public Law\[4\]
- **OPRE 3360** Managerial Methods in Decision Making Under Uncertainty
  - or **STAT 2332** Introductory Statistics for Life Sciences
  - or **STAT 3360** Probability and Statistics for Management and Economics

Choose two of the following:\[9\]

- **BA 1310** Making Choices in Free Market Systems\[4, 5\]
- **BA 1320** Business in a Global World\[4, 5\]
- **ECON 2301** Principles of Macroeconomics\[4, 5\]
- **ECON 2302** Principles of Microeconomics\[4, 5\]

#### Business Core Courses: 24 semester credit hours

- **BCOM 1300** Introduction to Professionalism and Communication in Business\[11\]
  - or **BCOM 3300** Professionalism and Communication in Business\[11\]
- **BCOM 4300** Managing Communications in Business
- **FIN 3320** Business Finance
- **IMS 3310** International Business
- **ITSS 3300** Information Technology for Business
- **OBHR 3330** Introduction to Human Resource Management
  - or **OBHR 3310** Organizational Behavior
Biology Major Preparatory Courses: 20-21 semester credit hours beyond Core Curriculum

**Operations Management**

**Principles of Marketing**

**Chemistry Courses**

**CHEM 1111** General Chemistry Laboratory I

or **CHEM 1115** Honors Freshman Chemistry Laboratory I

**CHEM 1112** General Chemistry Laboratory II

or **CHEM 1116** Honors Freshman Chemistry Laboratory II

**CHEM 1311** General Chemistry I

or **CHEM 1315** Honors Freshman Chemistry I

**CHEM 1312** General Chemistry II

or **CHEM 1316** Honors Freshman Chemistry II

**CHEM 2323** Introductory Organic Chemistry I

or **CHEM 2327** Honors Organic Chemistry I

**CHEM 2325** Introductory Organic Chemistry II

or **CHEM 2328** Honors Organic Chemistry II

**CHEM 2233** Introductory Organic Chemistry Laboratory

or **CHEM 2237** Honors Organic Chemistry Laboratory

**Mathematics Courses**

**MATH 2413** Differential Calculus

**MATH 2414** Integral Calculus

**Physics Courses**

**PHYS 2325** Mechanics and **PHYS 2125** Physics Laboratory I

or **PHYS 2421** Honors Physics I - Mechanics and Heat

or **PHYS 1301** College Physics I and **PHYS 2125** Physics Laboratory I

**PHYS 2326** Electromagnetism and Waves

or **PHYS 2422** Honors Physics II - Electromagnetism and Waves

or **PHYS 1302** College Physics II

**Biology Core Courses: 29 semester credit hours**

**BIOL 2111** Introduction to Modern Biology Workshop I

**BIOL 2112** Introduction to Modern Biology Workshop II

**BIOL 2281** Introductory Biology Laboratory
III. Elective Requirements: 21 semester credit hours

Guided Electives: 21 semester credit hours

A practicum experience of at least 160 working hours is required.

- **HMG 4090** Healthcare Management Internship
- **BA 4090** Management Internship

A community engagement experience is required.

- **BA 4095** Social Sector Engagement and Community Outreach Practicum

The following courses fulfill a portion of the remaining Guided Elective semester credit hours:

Healthcare Management Core Courses: 18 semester credit hours

- **HMG 3301** Introduction to Healthcare Management
- **HMG 3310** Healthcare Regulatory Environment
- **HMG 3311** Healthcare Financial Analysis
- **HMG 3320** Complex and Dynamic Healthcare Environment
  - or **ECON 3330** Economics of Health
- **HMG 4321** Introduction to Healthcare Information Systems
- **HMG 4395** Capstone Senior Project - Healthcare Management
  - or **BPS 4395** Capstone Senior Project - Business
or **ENTP 4395** Capstone Senior Project - Entrepreneurship

**Biology (3 semester credit hours):**

**BIOL 4380** Cell and Molecular Biology Laboratory

or **BIOL 3V96** Undergraduate Research in Molecular and Cell Biology

or **BIOL 4391** Senior Research in Molecular and Cell Biology

or **BIOL 4399** Senior Honors Research for Thesis in Molecular and Cell Biology

All students must complete at least 51 semester credit hours of upper-division courses to graduate.

1. Incoming freshmen must enroll and complete requirements of UNIV 1010 and the corresponding school-related freshman seminar course. Students, including transfer students, who complete their core curriculum at UT Dallas must take UNIV 2020.

2. Degree is 149-150 semester credit hours if students are required to take NATS 1101.

3. Curriculum Requirements can be fulfilled by other approved courses from institutions of higher education. The courses listed are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at UT Dallas.

4. Indicates a prerequisite class to be completed before enrolling for upper-division classes.

5. A required Major course that also fulfills a Core Curriculum requirement. Semester credit hours are counted in Core Curriculum.

6. Six semester credit hours of Calculus are counted under Mathematics Core and Component Area Option Core, and 2 semester credit hours of Calculus are counted as Biology Major Preparatory Courses.

7. Students may elect to substitute MATH 2417 for MATH 2413.

8. In order to make timely degree progress, students should complete MATH 2413 or MATH 2417 by the end of their first semester at UT Dallas. Students who will not meet this requirement should contact their academic advisor to discuss their degree timeline.

9. Certain courses listed are prerequisites for major core, major concentration, or major related courses. Choose accordingly.

10. Students may elect to substitute MATH 2419 for MATH 2414.

11. JSOM first-time-in-college freshmen are required to take BCOM 1300 in their first semester. Transfer students and students new to JSOM are required to take BCOM 3300 in their first semester.

12. Students who complete PHYS 2421 do not need to complete PHYS 2125.

13. Students may fulfill the internship requirement with HMGT 4090, BA 4090, or HMGT 4v90 (1-3 semester credit hours). The zero semester credit hour courses HMGT 4090 or BA 4090 are recommended as the most efficient way to satisfy this requirement.

14. Students may fulfill the community engagement requirement with BA 4095, IMS 4335, ENTP 4340, or MKT
4360. The zero semester credit hour course BA 4095 is recommended as the most efficient way to satisfy this requirement.

15. Requires permission of the Biology Undergraduate Advisor to ensure training in recombinant DNA analysis.