## Analytics and Data Science Public Pathways Program

We have partnered with Great Bay Community College to offer a Pathways Program that allows you to smoothly transition to UNH Manchester. This curriculum map shows you the GBCC course sequence you should follow for seamless transfer into our B.S. in Analytics and Data Science degree program.

<table>
<thead>
<tr>
<th>Students must take these courses at GBCC...</th>
<th>To fulfill these UNH degree requirements...</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 112 – Introduction to Object-Oriented Programming(^1)</td>
<td>Elective Credit</td>
</tr>
<tr>
<td>MATH 230 – Calculus I</td>
<td>MATH 425 – Calculus I</td>
</tr>
<tr>
<td>BUS 110 – Introduction to Business</td>
<td>BUS 400 – Introduction to Business</td>
</tr>
<tr>
<td>FYE 101 – First Year Seminar</td>
<td>No transfer credit</td>
</tr>
<tr>
<td>ENGL 110 – College Composition I</td>
<td>Discovery writing skills course</td>
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<tr>
<td>ENGL 215 – Writing Technical Documents</td>
<td>ENGL 502 – Technical Writing</td>
</tr>
<tr>
<td>MATH 250 – Calculus II</td>
<td>MATH 426 – Calculus II</td>
</tr>
<tr>
<td>CIS 113 – Database Design and Management (^2)</td>
<td>Elective credit</td>
</tr>
<tr>
<td>CIS 148 – Introduction to Java Programming(^1)</td>
<td>COMP 425 – Computing Fundamentals</td>
</tr>
<tr>
<td>Discovery-approved fine arts</td>
<td>Discovery fine and performing arts course</td>
</tr>
<tr>
<td>SOC 120 – Society and Technological Change</td>
<td>Discovery environment, technology and society course</td>
</tr>
<tr>
<td>CIS 177 – Python</td>
<td>Elective credit</td>
</tr>
<tr>
<td>MATH 235 – Statistics for Engineers and Scientists</td>
<td>COMP 490 – Statistics in Computing and Engineering</td>
</tr>
<tr>
<td>DATA 210 – Elements of Data Science</td>
<td>DATA 557 – Introduction to Data Science and Analytics</td>
</tr>
<tr>
<td>Discovery-approved physical science</td>
<td>Discovery physical science course</td>
</tr>
<tr>
<td>Discovery-approved history</td>
<td>Discovery historical perspectives course</td>
</tr>
<tr>
<td>CIS 210 – Data Structures with Elementary Algorithms (^2)</td>
<td>COMP 520 – Database Design and Development</td>
</tr>
<tr>
<td>MATH 245 – Linear Algebra</td>
<td>MATH 545 – Intro to Linear Algebra (\text{or}) MATH 645 – Linear Algebra for Applications</td>
</tr>
<tr>
<td>Discovery-approved biological science</td>
<td>Discovery biological science course</td>
</tr>
<tr>
<td>DATA 220 – Data Analysis w/R</td>
<td>Elective credit</td>
</tr>
<tr>
<td>DATA 225 – Analytics Capstone</td>
<td>Elective credit</td>
</tr>
</tbody>
</table>

**Note:** See page 3 for information about UNH’s Discovery Program courses.

1. Major credit when paired with CIS 148 for COMP 425. Students must earn a grade of C or better in both CIS 112 and CIS 148 to earn credit for COMP 425.
2. Major credit when paired with CIS 210 for COMP 520. Students must earn a grade of C or better in both CIS 113 and CIS 210 to earn credit for COMP 520.

Course titles, names and/or sequencing are subject to change.
If you have enrolled in the NH Dual Admission Program and/or plan to finish your associate degree at GBCC, complete the following requirements at UNH Manchester to receive your bachelor’s degree.

**Major Course Requirements:**
- MATH 739 – Applied Regression
- COMP 430 – System Fundamentals
- COMP 525 – Data Structures Fundamentals
- DATA 674 – Predictive and Prescriptive Analytics I
- DATA 675 – Predictive and Prescriptive Analytics II
- DATA 757 – Big Data
- BUS 453 – Leadership for Managers
- BUS 620 – Organizational Behavior
- USMT 599 – Professional Development Seminar (1 credit)
- DATA 690 – Internship Experience (4 credits)
- DATA 790 – Capstone Project

**Discovery Program* Course Requirements:**
- Discovery world cultures course
- Discovery social science course
- Discovery humanities course

**University Degree Requirements:**
- Elective courses to fill remainder of credits required for bachelor’s degree (128 total)
- University writing requirement**

* See page 3 for information about UNH’s Discovery program.
** Bachelor degree candidates are required to complete four writing-intensive courses, which must include: English 401 – First Year Writing (or equivalent transfer English composition course) and three additional writing-intensive courses, one in the student’s major and one at the 600-level or above.

An advisor at UNH Manchester will provide you with the best possible guidance for course selections each term.

Please also note:
- UNH Manchester accepts a maximum of 72 credits in transfer from 2-year institutions. Only courses completed with a grade of C or better will be accepted as transfer credits.
- Students must earn a minimum overall grade point average of 2.50 at GBCC to be eligible for dual enrollment at UNH Manchester.

Course titles, names and/or sequencing are subject to change.
The Great Bay Community College courses* listed below fulfill UNH Manchester's Discovery Program course requirements:

Writing Skills
ENGL 110G – College Composition I

Quantitative Reasoning
CIS 148G – Intro to Java Programming
CIS 158G – Introduction to C++
MATH 170G – Discrete Mathematics
MATH 215G – Finite Mathematics
MATH 225G – Probability & Statistics
MATH 230G – Calculus I
MATH 235G – Statistics for Engineers & Scientists

Biological Science/DLAB
BIOL 101G – Human Disease
BIOL 106G – Human Body
BIOL 108G – Biology I
BIOL 109G – Biology II
BIOL 110G – Human Anatomy & Physiology I
BIOL 120G – Human Anatomy & Physiology II
BIOL 150G – Nutrition
BIOL 160G – Intro to Environmental Science
BTEC 105G – Intro to Biotechnology

Physical Science
CHEM 110G – Introduction to Chemistry
CHEM 115G – General Chemistry
CHEM 116G – General Chemistry II
ECSI 110G – Earth Science
PHYS 135G – College Physics I
PHYS 136G – College Physics II
PHYS 290G – University Physics I
PHYS 295G – University Physics II

Environment, Technology & Society
BTEC 205G – Bioethics
NATR 105G – Sustainable Agriculture & Food Systems
NATR 229G – Contemporary Conservation Issues & Environmental Awareness
SOCI 120G – Society & Technological Change

Historical Perspectives
HIST 120G – Western Civilization thru 1500
HIST 130G – Western Civilization 1500-Pres
HIST 201G – History of New England
HIST 202G – US History thru 1870
HIST 204G – US History 1870 to Present
HIST 212G – US History since 1945

World Culture
ANTH 101G – Intro to Anthropology
HIST 210G – History of China
HIST 211G – Modern Middle East History

Fine and Performing Arts
ARTS 103G – Fundamentals of Acting
ARTS 105G – Introduction to Music
ARTS 117G – Art History I
ARTS 123G – Drawing I
ARTS 124G – Art, Design & Color
ARTS 125G – Visual Language
ARTS 127G – Art History II
ARTS 137G – Contemporary Art History
DGMT 115G – Intro to Graphic Design

Social Science
AMER 110G – Intro to American Studies
ECON 234G – Macroeconomics
ECON 235G – Microeconomics
GEOG 110G – World Geography
POLS 110G – American Government
POLS 210G – Intro to Political Science
PSYC 110G – Intro to Psychology
PSYC 210G – Human Growth & Development
SOCI 110G – Sociology
SOCI 135G – Sociology of Gender
SOCI 250G – Multi-Ethnic Cross Cultural Relations

Humanities
ENGL 117G – Introduction to Literature
ENGL 120G – Introduction to African-American Literature & Culture
ENGL 200G - Film and Society
ENGL 209G – American Literature through the Civil War
ENGL 212G – Sociology of Gender
ENGL 220G – American Literature after the Civil War
ENGL 222G – Major Writers
ENGL 223G – British Literature to 1800
ENGL 224G – British Literature from 1800-Present
ENGL 225G – Plays of William Shakespeare
PHIL 110G – Introduction to Philosophy
PHIL 215G – World Religions
PHIL 240G – Ethics

Writing Intensive
ENGL 110G – College Composition I
ENGL 213G – Creative Writing
ENGL 214G – Introduction to Creative Nonfiction (formerly College Composition II)

* Course titles, names and/or sequencing are subject to change.

UNH Manchester Bachelor Degree Requirements

To graduate from UNH, students must fulfill course requirements in the following areas: major courses, University Discovery Program courses and electives, totaling 128 credits.

Discovery Program Courses

UNH's Discovery Program builds each student's foundation in general education. To fulfill the Discovery Program, students must take the following courses: one inquiry course¹ (or INQ attribute course); one course in writing skills; one course in quantitative reasoning; as well as one 400- to 600-level course from each of the following Discovery Program categories: Biological Science (BS); Physical Science (PS); Environment, Technology and Society (ETS); Fine and Performing Arts (FFA); Historical Perspectives (HP); Humanities (HUMA); Social Science (SS) and World Cultures (WC).

1. The Inquiry requirement shall be waived for students with 26 or more transfer credits.
2. One of these two courses must have a lab component.
3. Also may be satisfied by approved study abroad programs.

November 2, 2016