

# PRINCIPLES OF INFORMATION AND DATA MANAGEMENT

**01:198:336**

**Instructor:** Dr. Tomasz Imielinski timielinski@gmail.com

**Contact Information:** Tomasz Imielinski (timielinski@gmail.com),

**Office Hours: Wednesday – 10AM-11AM**

**PLACE:**

Tomasz Imielinski's Personal Meeting Room

Join Zoom Meeting

<https://rutgers.zoom.us/j/2793647945?pwd=ajQxSVM5bm02K0pjb3dBUmJ3dUxvdz09>

I would like to encourage you coming to office hours in case you are generally lost (hopefully not!) or have general questions about the class. Specific questions send first to the Help Line. Even questions like “why this query does not run?”.

**HELP LINE:** [databases336@googlegroups.com](mailto:databases336@googlegroups.com)

**This is NOT a web site. It is email address.**

(this is where you can send all questions related to material and it goes only to teaching staff: me, Tas and some graders – we can answer very promptly and only to you.

## Learning Goals:

Describing and querying various forms of information such as structured data in relational databases, unstructured text (IR), semi-structured data (XML, JSON, web). Conceptual modeling and schema design. The course focuses on hands on user's perspective, rather than on DBMS implementation. You will learn how to use MySQL as well as different NoSQL platforms.

**TEXTBOOK:** No formal textbook, Class resources, Online references – which will

be listed on the canvas site. You learn by doing and by consulting valuable resources on the web.

**SOFTWARE TOOLS:** You will use **MySQL workbench** (one of them). We will help you to install it in first week of classes. We will also start from uploading a practice data set so you can start “hands on” from second week of the class onwards.

### **Credit distribution/evaluation.**

Database Project -40%

The remaining 60% will be distributed between assignments, quizzes and exams. The “weight” of each will be provided.

### **Main Material – what will be covered?**

Introduction to SQL – 4-6 classes

Data Modelling and E/R model – 2-3 classes

Relational Database Theory: Functional dependencies, decompositions and Normal forms. Relational Database Design - 1-2 classes

Integrity Constraints - 2 classes

Transactions and Concurrency Control (ACID properties) – 2 classes

NoSQL Databases, JSON – 2 classes

Search on text data – 2 classes

Data Analytics – 2 classes

## **Late Submission Policy**

**Late Submission Policy:** Up to 5 days late. Penalty 20% per day. No submission graded if late by more than 5 days.

### **Database Programming Project (40%)**

TBD on Canvas. Typically it is a project involving example database stored on the cloud (AWS) and writing MySQL queries, triggers and constraints. We will use REST API and simple interface to interact with the database. Since it is a programming project – the programs have to be correct and RUN to get full credit. For non-running programs only 50% of credit is possible.

## **Academic Integrity**

Students are expected to maintain the highest level of academic integrity. You should be familiar with the university [policy on academic integrity](#). Violations will be reported and enforced according to this policy. Use of external website resources such as Chegg.com or others to obtain solutions to homework assignments, quizzes, or exams is cheating and a violation of the University Academic Integrity policy. Cheating in the course may result in grade penalties, disciplinary sanctions or educational sanctions. Posting homework assignments, or exams, to external sites without the instructor's permission may be a violation of copyright and may constitute the facilitation of dishonesty, which may result in the same penalties as plain cheating.

### **Rutgers Honor Pledge**

The Rutgers honor pledge will be included on all (major) assessments for you to sign: *On my honor, I have neither received nor given any unauthorized assistance on this examination (assignment).*

**Intellectual Property:** Almost all original work is the intellectual property of its authors. These works may include syllabi, lecture slides, recorded lectures, homework problems, exams, and other materials, in either printed or electronic form. The authors may hold copyrights in these works, which are protected by U.S. statutes. Copying this work or posting it online without the permission of the author may violate the author's rights. More importantly, these works are the product of the author's efforts; respect for these efforts and for the author's intellectual property rights is an important value that members of the university community take seriously.

For more instructions on copyright protections at Rutgers University, please refer to the [Rutgers Libraries](#).

**Student-Wellness Services: All of these services are being provided remotely during Fall 2020.**

**Counseling, ADAP & Psychiatric Services (CAPS)**

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ <http://health.rutgers.edu/medical-counseling-services/counseling/>

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professionals within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community, and consultation and collaboration with campus partners.

**Crisis Intervention** : <http://health.rutgers.edu/medical-counseling-services/counseling/crisis-intervention/>

**Report a Concern:** <http://health.rutgers.edu/do-something-to-help/>

**Violence Prevention & Victim Assistance (VPVA)**

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / [www.vpva.rutgers.edu/](http://www.vpva.rutgers.edu/)

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

**Disability Services**

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.

