NUIP 6450-90: Spring 2020
NUTRITION BIOCHEMISTRY

INSTRUCTOR INFORMATION

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Office: HPER-N 224C

TEACHING ASSISTANT INFORMATION

STUDENT LEARNING OUTCOMES

NUTR 6450: Nutrition Biochemistry Course is designed to give students a thorough working knowledge of cellular biochemistry as it pertains to human physiology, nutrition and metabolism with special emphasis on metabolic interrelationships, hormonal control of biochemical signaling pathways, and disorders of metabolism. Background material will be supplemented and reinforced through study of relevant systems and disease states.

Course Objectives

1. Understand key elements and concepts relevant to biochemistry including metabolic pathways, cellular control mechanisms and signaling pathways.
2. Translate metabolic concepts of macronutrient metabolism to specific problems and disease states.
3. Critically appraise scientific biochemical literature in order to perform evidence-based practice.
PREREQUISITES

Biochemistry 3510

REQUIRED MATERIAL

You are not required to purchase a text book. Most readings will come from peer-reviewed literature and links will be provided for you. General use references include, Harper’s Biochemistry, Harper’s illustrated biochemistry, Biochemistry (Berg et al.) – available on closed reserve in Eccles Library.

LEARNING ASSESSMENTS

Final grade will be calculated based on Assignments (200 Points), Quizzes (100 Points), and Exams (200 Points).

The final average will be converted to a letter grade according the Grading Scheme.

POINT BREAKDOWN FOR ASSIGNMENTS AND EXAMS

Assignment 1: Article critique (Signaling mechanism) 50 points
Assignment 2: Teaching presentation (Carbohydrate metabolism) 50 points
Assignment 3: Article critique (Lipid metabolism) 50 points
Assignment 4: Teaching presentation (Biochemistry in action) 50 points
Quizzes 1 - 5 100 points
Exam 1 100 points
Exam 2 100 points

TOTAL 500 points
FREQUENTLY ASKED QUESTIONS

- What’s the best way to go about managing my time for this class?

Successful students (those that get A’s and B’s) use their time wisely. The standard formula for college coursework is that for every 1 hour of credit a student will spend 3 to 6 hours (and sometimes more) of studying and completing homework. Thus, a 4 credit course will require an average of 12 to 24 hours of homework (reading, research, studying) per week. As a result, successful students plan their time so that they keep up with assignments by maintaining a pace that fits the course schedule. They also communicate with the instructor often so that they can receive feedback on their work. Please note the class is cumulative in nature. A good understanding of the material in the first part of the semester is necessary in order to proceed successfully throughout the remainder of the semester.

- How can I find out how I did on exams and assignments?

All assignments will be returned via electronic uploads to Canvas. I encourage you to review graded assignments and to contact me with any questions. Graded quizzes will be available to review after the due date.

- I missed an assignment due date, now what?

Late assignments (defined as assignments submitted between 1 minute and 3 days after the due date) will be accepted for ½ credit. Assignments will not be accepted beyond this point for credit. If you experience technical difficulties with submitting assignments, contact U-online for technical assistance immediately at 801-585-5959 or call me at 801-581-8376.

- What happens if I miss a quiz?

Quizzes on Canvas may not be submitted late for credit at any point.

- What if I miss an exam?

There will be no make-up exams without prearranged permission from the instructor. If the incident resulting in a missed exam occurs on the due date, you will have 24 hours to contact your instructor. Physician’s verification is required for illnesses or other documentation (e.g., doctor’s note, accident report, death certificate) for medical or emergency circumstances beyond your control. Late exams must be completed within one week. To contact your instructor, messages can be left on their e-mail or voice mail prior to the scheduled exam time or within 24 hours after the incident. Missed exams without permission or acceptable medical or emergency excuse will be assigned a grade of zero.

If you know in advance that you need to take the exam at a different time than scheduled, your instructor will work with you to make arrangements. These arrangements must be scheduled at least 1 week in advance of the exam for a time before the originally planned test date (i.e., if you are jetting to Cabo during the week of the exam, you may take the exam before you leave).
GRADE SCHEME

The following grading standards will be used in this class:

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<thead>
<tr>
<th>Grade</th>
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<tbody>
<tr>
<td>A</td>
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<tr>
<td>A-</td>
<td>&lt; 92.5 % to 89.5%</td>
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<tr>
<td>D</td>
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<td>&lt; 62.5 % to 59.5%</td>
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<tr>
<td>F</td>
<td>&lt; 59.5 % to 0.0%</td>
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COURSE RESPONSIBILITIES

Online courses require significant self-motivation. Online courses are different than on-campus courses and online learning is not ideal for everyone. Some lessons take a considerable amount of time to complete. Please note that not all modules are created equal. Some may take a bit more time than others. Some people believe this to be a much easier way to study this subject than in the on-campus frame work. Others may feel very intimidated at first. Be patient as you work your way through the first few modules. If you are serious about the material, you will learn as much as, if not more than, most on-campus students about this subject and develop reading and communication skills that are vital to the workforce of the 21st century.

- **Electronic or equipment failure**: It is your responsibility to maintain your computer and related equipment in order to participate in the online nature of the course.
- **Document archiving**: You are responsible for making sure your assignments, including attachments, are received before the deadline. Students are also responsible for ensuring that the documents submitted are the correct document to be graded.
- **Naming conventions and software type**: You are responsible for submitting the assignment with the required naming convention, correct file extension, and using the software type and version required for the assignment. See assignment instructions for acceptable formats.
- **Classroom equivalency**: Discussion threads, e-mails, and chat rooms are all considered to be equivalent to classrooms, and student behavior within those environments shall conform to the University of Utah Student Code. Specifically:
Posting photos or comments that would be off-topic in a classroom are still off-topic in an online posting.

Off-color language and photos are never appropriate.

Using angry or abusive language is called "flaming", is not acceptable, and will be dealt with according to the Student Code.

Course e-mails, e-journals, and other online course communications are part of the classroom and as such, are University property and subject to GRAMA regulations and the Student Code. Privacy regarding these communications between correspondents must not be assumed and should be mutually agreed upon in advance, in writing.

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**INSTITUTIONAL POLICIES**

**Drop/Withdrawal Policies**

Students may drop a course within the first two weeks of a given semester without any penalties.

Students may officially withdraw (W) from a class or all classes after the drop deadline through the midpoint of a course. A “W” grade is recorded on the transcript and appropriate tuition/fees are assessed. The grade “W” is not used in calculating the student’s GPA.

For deadlines to withdraw from full-term, first, and second session classes, see the U's [Academic Calendar](https://registrar.utah.edu/academic-calendars/index.php).

**Plagiarism & Cheating**

It is assumed that all work submitted to your instructor is your own work. When you have used ideas of others, you must properly indicate that you have done so.

Plagiarism and cheating are serious offenses and may be punished by failure on an individual assignment, and/or failure in the course. Academic misconduct, according to the University of Utah Student Code,

> “…Includes, but is not limited to, cheating, misrepresenting one’s work, inappropriately collaborating, plagiarism, and fabrication or falsification of information…It also includes facilitating academic misconduct by intentionally helping or attempting to help another to commit an act of academic misconduct.”

For details on plagiarism and other important course conduct issues, see the U's [Code of Student Rights and Responsibilities](http://regulations.utah.edu/academics/6-400.php).

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**Safety at the U**
The University of Utah values the safety of all campus community members. You will receive important emergency alerts and safety messages regarding campus safety via text message.

For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.

To report suspicious activity or to request a courtesy escort, contact:

**Campus Police & Department of Public Safety**
- ☏ 801-585-COPS (801-585-2677)
- 🌐 dps.utah.edu (https://dps.utah.edu/)
- ✰ 1735 E. S. Campus Dr.
  Salt Lake City, UT 84112

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### Wellness at the U

Your personal health and wellness are essential to your success as a student. Personal concerns like stress, anxiety, relationship difficulties, depression, or cross-cultural differences can interfere with a student's ability to succeed and thrive in this course and at the University of Utah.

Please feel welcome to reach out to your instructor or TA's to handle issues regarding your coursework.

For helpful resources to manage your personal wellness and counseling options, contact:

**Center for Student Wellness**
- ☏ 801-581-7776
- 🌐 wellness.utah.edu (http://wellness.utah.edu/)
- ✰ 2100 Eccles Student Life Center
  1836 Student Life Way
  Salt Lake City, UT 84112

**Women's Resource Center**
- ☏ 801-581-8030
- 🌐 womenscenter.utah.edu (https://womenscenter.utah.edu/)
- ✰ 411 Union Building
  200 S. Central Campus Dr.
  Salt Lake City, UT 84112

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### Addressing Sexual Misconduct

Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such
as race, national origin, color, religion, age, status as a person with a disability, veteran’s status, or
genetic information.

If you or someone you know has been harassed or assaulted, you are encouraged to report it to
university officials:

**Title IX Coordinator & Office of Equal Opportunity and Affirmative Action**

📞 801-581-8365
🌐 [oeo.utah.edu](https://oeo.utah.edu/)
📍 135 Park Building
   201 Presidents' Cir.
   Salt Lake City, UT 84112

**Office of the Dean of Students**

📞 801-581-7066
🌐 [deanofstudents.utah.edu](https://deanofstudents.utah.edu/)
📍 270 Union Building
   200 S. Central Campus Dr.
   Salt Lake City, UT 84112

To file a police report, contact:

**Campus Police & Department of Public Safety**

📞 801-585-COPS (801-585-2677)
🌐 [dps.utah.edu](https://dps.utah.edu/)
📍 1735 E. S. Campus Dr.
   Salt Lake City, UT 84112

If you do not feel comfortable reporting to authorities, the U’s Victim-Survivor Advocates provide free,
confidential and trauma-informed support services to students, faculty, and staff who have
experienced interpersonal violence.

To **privately** explore options and resources available to you with an advocate, contact:

**Center for Student Wellness**

📞 801-581-7776
🌐 [wellness.utah.edu](http://wellness.utah.edu/).
📍 328 Student Services Building
   201 S. 1460 E.
   Salt Lake City, UT 84112

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**Americans With Disabilities Act (ADA)**

The University of Utah seeks to provide equal access to its programs, services, and activities for people
with disabilities.
All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services (CDS). CDS will work with you and the instructor to make arrangements for accommodations. Prior notice is appreciated. To read the full accommodations policy for the University of Utah, please see Section Q of the Instruction & Evaluation regulations (http://regulations.utah.edu/academics/6-100.php).

If you will need accommodations in this class, contact:

**Center for Disability Services**

📞 801-581-5020  
🌐 disability.utah.edu  
📍 162 Union Building  
   200 S. Central Campus Dr.  
   Salt Lake City, UT 84112

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**Diverse Student Support**

**Student Support Services (TRIO)**

TRIO federal programs are targeted to serve and assist low-income individuals, first-generation college students, and individuals with disabilities.

Student Support Services (SSS) is a TRIO program for current or incoming undergraduate university students who are seeking their first bachelor's degree and need academic assistance and other services to be successful at the University of Utah.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

**Student Support Services (TRIO)**

📞 801-581-7188  
🌐 trio.utah.edu  
📍 Room 2075  
   1901 E. S. Campus Dr.  
   Salt Lake City, UT 84112

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**American Indian Students**

The AIRC works to increase American Indian student visibility and success on campus by advocating for and providing student centered programs and tools to enhance academic success, cultural events to promote personal well-being, and a supportive “home-away-from-home” space for students to grow and develop leadership skills.
For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

**American Indian Resource Center**

📞 801-581-7019  
🌐 [diversity.utah.edu/centers/airc](https://diversity.utah.edu/centers/airc)  
📍 Fort Douglas Building 622  
  1925 De Trobriand St.  
  Salt Lake City, UT 84113

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**Black Students**

Using a pan-African lens, the Black Cultural Center seeks to counteract persistent campus-wide and global anti-blackness. The Black Cultural Center works to holistically enrich, educate, and advocate for students, faculty, and staff through Black centered programming, culturally affirming educational initiatives, and retention strategies.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

**Black Cultural Center**

📞 801-213-1441  
🌐 [diversity.utah.edu/centers/bcc](https://diversity.utah.edu/centers/bcc)  
📍 Fort Douglas Building 603  
  95 Fort Douglas Blvd.  
  Salt Lake City, UT 84113

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**Students with Children**

Our mission is to support and coordinate information, program development and services that enhance family resources as well as the availability, affordability and quality of child care for University students, faculty and staff.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

**Center for Childcare & Family Resources**

📞 801-585-5897  
🌐 [childcare.utah.edu](https://childcare.utah.edu)  
📍 408 Union Building  
  200 S. Central Campus Dr.  
  Salt Lake City, UT 84112
Students with Disabilities

The Center for Disability Services is dedicated to serving students with disabilities by providing the opportunity for success and equal access at the University of Utah. They also strive to create an inclusive, safe, and respectful environment.

For more information about what support they provide and links to other resources, view their website or contact:

**Center for Disability Services**

📞 801-581-5020

📧 disability.utah.edu  [(https://disability.utah.edu/)]

📍 162 Union Building

200 S. Central Campus Dr.
Salt Lake City, UT 84112

Students of Ethnic Descent

The Center for Ethnic Student Affairs offers several programs dedicated to the success of students with varied cultural and ethnic backgrounds. Their mission is to create an inclusive, safe campus community that values the experiences of all students.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

**Center for Ethnic Student Affairs**

📞 801-581-8151

📧 diversity.utah.edu/centers/cesa/  [(https://diversity.utah.edu/centers/cesa/)]

📍 235 Union Building

200 S. Central Campus Dr.
Salt Lake City, UT 84112

English as a Second/Additional Language (ESL) Students

If you are an English language learner, there are several resources on campus available to help you develop your English writing and language skills. Feel free to contact:

**Writing Center**

📞 801-587-9122

📧 writingcenter.utah.edu  [(http://writingcenter.utah.edu/)]

📍 2701 Marriott Library
Undocumented Students

Immigration is a complex phenomenon with broad impact—those who are directly affected by it, as well as those who are indirectly affected by their relationships with family members, friends, and loved ones. If your immigration status presents obstacles that prevent you from engaging in specific activities or fulfilling specific course criteria, confidential arrangements may be requested from the Dream Center.

**Arrangements with the Dream Center will not jeopardize your student status, your financial aid, or any other part of your residence.** The Dream Center offers a wide range of resources to support undocumented students (with and without DACA) as well as students from mixed-status families.

For more information about what support they provide and links to other resources, view their website or contact:

**Dream Center**

📞 801-213-3697

🌐 [dream.utah.edu](http://dream.utah.edu/)

📍 1120 Annex (Wing B)

1901 E. S. Campus Dr.

Salt Lake City, UT 84112

LGBTQ+ Students

The LGBTQ+ Resource Center acts in accountability with the campus community by identifying the needs of people with a queer range of [a]gender and [a]sexual experiences and responding with university-wide services.
For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

**LGBTQ+ Resource Center**

📞 801-587-7973  
🌐 [lgbt.utah.edu](http://lgbt.utah.edu/)  
📍 409 Union Building  
   200 S. Central Campus Dr.  
   Salt Lake City, UT 84112

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**Veterans & Military Students**

The mission of the Veterans Support Center is to improve and enhance the individual and academic success of veterans, service members, and their family members who attend the university; to help them receive the benefits they earned; and to serve as a liaison between the student veteran community and the university.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

**Veterans Support Center**

📞 801-587-7722  
🌐 [veteranscenter.utah.edu](http://veteranscenter.utah.edu/)  
📍 418 Union Building  
   200 S. Central Campus Dr.  
   Salt Lake City, UT 84112

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**Women**

The Women’s Resource Center (WRC) at the University of Utah serves as the central resource for educational and support services for women. Honoring the complexities of women’s identities, the WRC facilitates choices and changes through programs, counseling, and training grounded in a commitment to advance social justice and equality.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

**Women’s Resource Center**

📞 801-581-8030  
🌐 [womenscenter.utah.edu](https://womenscenter.utah.edu/)  
📍 411 Union Building  
   200 S. Central Campus Dr.  
   Salt Lake City, UT 84112
Inclusivity at the U

The Office for Inclusive Excellence is here to engage, support, and advance an environment fostering the values of respect, diversity, equity, inclusivity, and academic excellence for students in our increasingly global campus community. They also handle reports of bias in the classroom as outlined below:

Bias or hate incidents consist of speech, conduct, or some other form of expression or action that is motivated wholly or in part by prejudice or bias whose impact discriminates, demeans, embarrasses, assigns stereotypes, harasses, or excludes individuals because of their race, color, ethnicity, national origin, language, sex, size, gender identity or expression, sexual orientation, disability, age, or religion.

For more information about what support they provide and links to other resources, or to report a bias incident, view their website or contact:

Office for Inclusive Excellence

801-581-4600

inclusive-excellence.utah.edu (https://inclusive-excellence.utah.edu/)

170 Annex (Wing D)
1901 E. S. Campus Dr.
Salt Lake City, UT 84112

Other Student Support

To learn more about some of the other resource groups available at the U, check out:

diversity.utah.edu/student-groups (https://diversity.utah.edu/student-groups/)

studentsuccess.utah.edu/resources/student-support (https://studentsuccess.utah.edu/resources/student-support/)

Course Summary:

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<thead>
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<tr>
<td>Wed Jan 8, 2020</td>
<td>Lecture 1: Metabolism Introduction [Link]</td>
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<td>Wed Jan 15, 2020</td>
<td>Lecture 2: Cell signaling [Link]</td>
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<td>Wed Jan 22, 2020</td>
<td>Lecture 3: Carbohydrates - Introduction [Link]</td>
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<td>Mon Jan 27, 2020</td>
<td>Quiz 1: Metabolism and cell signaling [Link]                           due by 11:59pm</td>
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<td>Wed Jan 29, 2020</td>
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<td>Fri Jan 31, 2020</td>
<td>Assignment 1: Cell signaling [Link]                                    due by 11:59pm</td>
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<td>Wed Feb 5, 2020</td>
<td>Lecture 5: Carbohydrates - Metabolism 2 [Link]</td>
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<td>Lecture 6: Carbohydrates - Metabolism 3 [Link]</td>
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<td>Wed Feb 19, 2020</td>
<td>Lecture 7: Lipids - Basics [Link]</td>
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<tr>
<td>Mon Feb 24, 2020</td>
<td>Quiz 2: Carbohydrate metabolism [Link]                                 due by 11:59pm</td>
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<tr>
<td>Wed Feb 26, 2020</td>
<td>Lecture 8: Lipids - Metabolism 1 [Link]</td>
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<td>Fri Feb 28, 2020</td>
<td>Assignment 2: Carbohydrate Metabolism [Link]                           due by 11:59pm</td>
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<td>Exam 1 [Link]                                                          due by 11:59pm</td>
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<tr>
<td>Wed Mar 4, 2020</td>
<td>Lecture 9: Lipids - Metabolism 2 [Link]</td>
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<tr>
<td>Wed Mar 11, 2020</td>
<td>Lecture 10: Disorders of lipid metabolism (<a href="https://utah.instructure.com/calendar?event_id=1677094&amp;include_contexts=course_601212">link</a>) 12am</td>
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<tr>
<td>Wed Mar 18, 2020</td>
<td>Lecture 11: Proteins - chemistry and digestion (<a href="https://utah.instructure.com/calendar?event_id=1677098&amp;include_contexts=course_601212">link</a>) 12am</td>
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<td>Fri Mar 27, 2020</td>
<td>Assignment 3: Lipid Metabolism (<a href="https://utah.instructure.com/courses/601212/assignments/6996171">link</a>) due by 11:59pm</td>
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<td>Mon Mar 30, 2020</td>
<td>Quiz 3: Lipid metabolism (<a href="https://utah.instructure.com/courses/601212/assignments/6996162">link</a>) due by 11:59pm</td>
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<td>Wed Apr 1, 2020</td>
<td>Lecture 12: Amino acid metabolism (<a href="https://utah.instructure.com/calendar?event_id=1677097&amp;include_contexts=course_601212">link</a>) 12am</td>
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<td>Wed Apr 8, 2020</td>
<td>Lecture 13: Integration of metabolism (<a href="https://utah.instructure.com/calendar?event_id=1677096&amp;include_contexts=course_601212">link</a>) 12am</td>
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