**NS LA COURSE STRUCTURE**

"Science of Nature" (NS101 & NS102) is a two-semester integrated science course for freshmen. The course aims to initiate a curiosity and desire for learning "scientific thinking" in students and at the same time introduce some of the basic concepts of physical, chemical, and biological sciences in connection with questions concerning the nature and our daily life. Based on the course takes a practical approach to learning, drawing from everyday life (below) to promote critical thinking and back-of-the-envelope calculation skills.

The Module Questions:
1. How are we doing in the Universe?
2. Can we overcome a triple threat for the human race?
3. Are humans causing climate change?
4. Can we ever comprehend the workings of the brain?

Upon completing NS101 & 102 students should be able to:
- Demonstrate skills for critical thinking, reasoning and problem solving through integration of different concepts and information.
- Distinguish among scientific laws, hypothesis and theory and use them to differentiate facts from fiction.
- Apply mathematical concepts to solve quantitative problems.
- Demonstrate fundamental knowledge of the terminology, major concepts and theories of one or more fields in physical, chemical, and biological sciences.
- Describe the role of science and technology, and develop skills for communicating scientific concepts and facts to society in general.
- Demonstrate professionalism and ethics when using scientific approach to make informed decision in daily life situations.

**NS LA EXPECTATIONS & SUPPORT PROGRAM**

<table>
<thead>
<tr>
<th>Weekly LA responsibility and working hours:</th>
<th>Total</th>
<th>per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Preparation</td>
<td>2 hr</td>
<td></td>
</tr>
<tr>
<td>TA/LA Meeting</td>
<td>2 hr</td>
<td></td>
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<tr>
<td>Recitations (2 sections) or Active Lecture</td>
<td>4 hr</td>
<td></td>
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<tr>
<td>Other course related work</td>
<td>1 hr</td>
<td></td>
</tr>
<tr>
<td>LA Support Session (only in some weeks)</td>
<td>1 hr</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10 hr</strong></td>
<td><strong>per week</strong></td>
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**LA orientation/workshop (pre-semester, 1 day)**

- Training activities on active learning + collaborative learning
- New LAs are required to attend along with new graduate teaching assistants (TAs)
- "Mock" recitation session
- LA work on the first week's recitation questions in groups, and the new TAs guide them as LAs would do in real recitations
- LA roles, expectations, and guiding tips
- "Meet the team" pizza lunch

**LA support sessions and training (during semester)**

**Purpose:**
- To provide the LAs a chance to self-reflection and receive feedback
- To share and address common issues encountered by the LAs
- To help them improve their guiding skills as a learning facilitator

**Format:**
- Active discussion and activities on pedagogy
- Lead by NS course coordinators

**Frequency:** 3-4 times per semester (once every few weeks)

**Topics Discussed:**
- Functional vs. dysfunctional groups
- Expert vs. novice problem solving approach
- Guiding by questioning
- How much help is too much help?
- Role of LAs in active-learning classroom
- To improve student learning and help them to become independent learners

**Common issues encountered by the LAs:**
- Direct teaching instead of facilitating discussions
- Difficulties dealing with unmotivated students / so many students at once
- Language issues (using Turkish while guiding students in recitations)

**LA FEEDBACK**

At the end of each semester, a feedback form was signed by the Vice President and the Director of Foundations Development Program is given to the LAs who successfully fulfill the LA responsibilities. The LAs prepare and present their feedback at the end of each semester. Below questions and answers are selected from LA posters.

- LAs define their experiences with these words:
  - Interactive
  - Positive impact on students and on the LAs themselves
  - Extraordinary
  - Challenging
  - Instructive
  - Rewarding
  - Lovely
  - Educational

- Gains and challenges in their own words...
  - I was able to study more efficiently for my other classes
  - I got to know a lot of new people from different academic backgrounds within the university
  - I become more confident in my speeches or presentations. Department members are more sensitive when you have such data.
  - Learning the subject better
  - A case of what happens behind the scenes
  - Being able to have more empathy and being more understanding to other lectures TAs/LAs.

**Challenges faced as a LA**
- Making the student interested in the topic.
- Motivating students who have never taken science before.
- Dealing with different personalities, and ages.
- Try to keep students awake.
- Trying to be cheerful when I was exhausted
- Keeping myself motivated
- Working with some students who do not ever want to be interested in science.
- How to take control despite limited authority
- Managing two sessions one after the other, which makes it 4 hours.
- Trying to cope with issues related to plagiarism.

**Skills LAs improved**
- Making the student interested in the topic.
- Teaching and communication skills
- Leadership skills
- Personal time management
- Studying systematically

**NS LA PROGRAM at Sabanci University**

NS LA program is setting an example to other courses at our university and freshmen Math courses as well as several upper-level courses are now working with LAs. Some of the NS LAs go on to contribute to other courses as their LAs.