

## Staff:

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## Feature:

+ **Active learning** 能動的学修.

+ **Flipped classroom** 反転授業.

## Requirement:

+ **PC** (screen/display, headphone/earphone, camera, microphone, etc.).

+ **Communication environment** (high-speed, large-capacity, etc.).

## Procedure of each one lecture of HRI (human-robot interaction):

<<1/3>> **Pre-learning** 事前学習.

<<2/3>> **Classwork** 授業.

<<3/3>> **Post-learning** 事後学習.

## Schedule: Tuesday 10h40-12h20.

[00] 2024/04/00. 00. Course guidance.

[01] 2024/04/16. 01. Robot and human being.

[02] 2024/04/23. 02. Recent robots (01) industrial robot.

[03] 2024/04/30. 03. Recent robots (02) special environment - battlefield.

[04] 2024/05/07. 04. Recent robots (03) special environment - space/outdoor/rescue.

[05] 2024/05/14. 05. Recent robots (04) social - public - medical.

[06] 2024/05/21. 06. Recent robots (05) social - public - welfare.

[07] 2024/05/28. 07. Recent robots (06) social - public - rehabilitation.

[08] 2024/06/04. 08. Robot dependability and Human error.

[09] 2024/06/11. 09. Safety of human-coexistence robot.

[10] 2024/06/18. 10. Affinity of human-symbiotic robot.

[11] 2024/06/25. 11. Recent robots (07) social - personal - mobility.

[12] 2024/07/02. 12. Recent robots (08) social - personal - terminal/interface.

[13] 2024/07/09. 13. Recent robots (09) humanoid, semi/small/full.

[14] 2024/07/16. 14. Recent robots (10) humanoid - others.

[Sup] 2024/07/23. 15. Summary and Total discussion.

## Score:

1) **Assignment report** 課題報告書.

2) **Supplement report** 追加報告書.

3) Others.

## References:

[j1] 日本ロボット学会 (編): "ロボット工学ハンドブック (第3版)", コロナ社, (2023).

<https://www.coronasha.co.jp/np/isbn/9784339046793/>

[j2] 日本ロボット学会 (編): "ロボットテクノロジー", オーム社, (2011).

<https://www.ohmsha.co.jp/book/9784274210723/>

[j3] 日本機械学会 (編): "ロボティクス", 丸善, (2011).

[https://www.maruzen-publishing.co.jp/item/?book\\_no=299518](https://www.maruzen-publishing.co.jp/item/?book_no=299518)

[e1] M. H. Ang, O. Khatib, B. Siciliano (eds.): "Encyclopedia of Robotics", Springer,

(2023). <https://link.springer.com/referencework/10.1007/978-3-642-41610-1>

[e2] D. Herath, D. St-Onge (eds.): "Foundations of Robotics", Springer, (2022).

<https://link.springer.com/book/10.1007/978-981-19-1983-1>

[e3] B. Siciliano, O. Khatib (eds.): "Springer Handbook of Robotics", Springer, (2016).

<https://link.springer.com/book/10.1007/978-3-319-32552-1>

- [e4] S.Y. Nof (ed.): "Springer Handbook of Automation", Springer, (2023).  
<http://link.springer.com/book/978-3-030-96729-1>
- [e5] J. Baillieul, T. Samad(ed.): "Encyclopedia of Systems and Control", Springer, (2021).  
<https://link.springer.com/referencework/10.1007/978-3-030-44184-5>
- [e6] A. Y. C. Nee (ed.): "Handbook of Manufacturing Engineering and Technology", Springer, (2015). <https://link.springer.com/referencework/10.1007/978-1-4471-4670-4>
- [e7] B. Furht, A. Agarwal (eds.): "Handbook of Medical and Healthcare Technologies", Springer, (2013). <https://link.springer.com/book/10.1007/978-1-4614-8495-0>
- [e8] R. Kramme, K-P. Hoffmann, R.S. Pozos (eds.): "Springer Handbook of Medical technology", Springer, (2011). <http://link.springer.com/book/10.1007/978-3-540-74658-4>

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Example in [01] 2024/04/16. 01. Robot and human being.

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<<1/3>> **Pre-learning** 事前学習

using Waseda Moodle.

from 2024/04/09 (Tue) 12h20, to 2024/04/16 (Tue) 10h40. -- one week.

**(01) Materials** 資料

Students should access the PDF and read it carefully while watching videos.

**H01-01, H01-11, H01-21, H01-31.**

Videos explaining the contents of the PDF.

Students must watch them one by one.

**(01) Assignment report** 課題報告書

Prepare your assignment report while studying, exploring, considering, and so on.

Download the DOC or TXT, use it to write into your answer, and upload it before the lecture time.

Title, submitted date, ID number and Family-Given name.

The layered section structure with leading words, following the instructions.

Up to 20 files and total 50M byte.

# 2024HriExampleAssignment.doc/txt

# Reference PDF files

- 
1.  
Q1)  
A1)
  2.  
Q2)  
A2)
  3.  
Q3)  
A3)
  4.  
Q4)  
A4)
  5.  
Q5)  
A5)
- 

Format:

# Electric file in A4 format.

\* First line: Title (HRI (01) assignment), Submitted dates (in y/m/d).

\* Second line: ID number, Full name.

- \* Third line and followings: Your own answers.
- # The body text must be in professional style.
- \* Sections/Items well-organized with appropriate Titles / Headings / Leading words.
- \* Divided into significant paragraphs, consisting of simple sentences.
- \* Line-space, side margin, etc. to make it easy to read for others.
- \* References listed in order at the end (of each section) with [num.] in body text.

**Time limit:** Received until the beginning of the next class.

<Aim> 1. Find out for yourself. 2. Think by yourself. 3. Express with yourself.

There is no correct nor perfect answer. There may not be one answer.

### **(01) Assignment PDF**

The questions of the assignment report are described in the PDF, which you can access after watching all videos.

### **(01) Discussion** 議論交流

If you have something to discuss while pre-learning, classwork, and post-learning, please let us know to share and talk with.

It is available before the deadline for submitting **(01) Supplement report**.

<Reason>

You may not be the single one who has the same question. Please share to discuss.

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### <<2/3>> **Classwork** 授業

using Waseda Moodle and Zoom meeting (so PC and communication environment are required).

during class hour, 2024/04/16 (Tue) from 10h40 to 12h20.

### **(01) Zoom meeting** ズーム会議

Open Zoom meeting,

Displaying participants name as "ID number, Family name, Given name".

- (1) Greeting and short talk.
- (2) Grouping, breakout room with about five students.
- (3) Group work (GW) at breakout room (about 20 min).
- (4) Coming back to main room, report by each reporter, and discussions.
- (5) Closing.

### **(01) Attendance** 出欠入力

Check your attendance.

### **(01) Group work** グループワーク

Move to breakout room.

Read the PDF file posted, and start talks and discussions among students.

<Aim>

Speaker: Devise to convey what you want to inform in a short time.

Learn new things and others' viewpoint from questions and answers.

Audiences: Incorporate the other's good points into yourself and correct your missing.

Learn anything on writing, presentation, discussion, and so on.

Download the DOC or TXT as a worksheet in **(01) Supplement report**.

Title, given/submitted date, ID number and Family-Given name.

Section structure with leading words following the instructions.

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### **1. Group work:**

1.1. Group member list (indicating chairperson and reporter):

1.2. Topic to be discussed (in your group) + Key points (of reporting from other groups and discussion):

**2. Answers to five questions** (updating your assignment report):

2.1. Q1-A1:

2.2. Q2-A2:

2.3. Q3-A3:

2.4. Q4-A4:

2.5. Q5-A5:

**3. Summary of learning outcomes:**

--- study contents and understandings = fact part.

**4. Comments and opinions:**

--- about this section / chapter = opinion part.

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[Caution] Screenshots can be cut and pasted only for figures. However, you will need to reconstruct the information obtained from the presentations of other students in your own words and create an original text to explain your understanding. (You need to report your own learning outcomes in the lecture, not a simple and superficial copy, so screenshots of the text are not graded).

<Aim> Inform the activities and results of the Group work during the class hours.

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<<3/3>> **Post-learning** 事後学習

using Waseda Moodle

from 2024/04/16 (Tue) 10h40, to 2024/04/17 (Wed) 10h40. --- 24 hours.

**(01) Supplement report** 追加報告書

Up to 20 files and total 50M byte.

# 2024HriExampleSupplement.doc/txt

# Reference PDFs

Revise and update the DOC or TXT as a worksheet in **(01) Supplement report**.

Section structure with leading words following the instructions.

1. Summary of your learning outcomes:

--- study contents and understandings.

2. Comments and opinions:

--- about this section / chapter.

<Aim> Present what you have learned through your total study activities.

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