

(2021.09.29)

00 students, 1 coaches, 1 professor

Feature

- + **Active learning** 能動的学修
- + **Flipped classroom** 反転授業

Requirement

- + **PC** (screen, speaker/headphone, camera, microphone, etc.)
- + **Communication environment** (high-speed, large-capacity, etc.)

Procedure of each one lecture of RBT (robotics)

<<1/3>> Pre-learning

<<2/3>> Classwork

<<3/3>> Post-learning

Schedule

- [00] 2021/09/29. 00. Course guidance.
- [01] 2021/10/06. 01. What robot is?
- [02] 2021/10/13. 02. Robot history.
- [03] 2021/10/20. 03. Robot configuration.
- [04] 2021/10/27. 04. Robot mechanism.
- [05] 2021/11/03. 09. Basic principles of manipulator: vector approach for kinetics (1).
- [06] 2021/11/10. 10. Basic principles of manipulator: vector approach for kinetics (2).
- [07] 2021/11/17. 11. Basic principles of manipulator: vector approach for kinetics (3).
- [08] 2021/11/24. 12. Basic principles of manipulator: vector approach for kinetics (4).
- [09] 2021/12/01. 05. Actuator.
- [10] 2021/12/08. 06. Sensor (part I).
- [11] 2021/12/15. 07. Sensor (part II).
- [12] 2021/12/22. 08. Reduction drive and Design of driving section.
- [-] 2021/12/29. Winter break.
- [-] 2022/01/05. Winter break.
- [13] 2022/01/12. 13. Manipulator control (1).
- [14] 2022/01/19. 14. Manipulator control (2).
- [ad] 2021/01/26. Supplement/makeup.

Score

- 1) Assignment files
- 2) Supplement files
- 3) Others

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Example in [01] 2021/10/06 (Wed)

<<1/3>> **Pre-learning**

using Waseda Moodle.

from 10h30, 2021/09/29 (Wed) to 09h00, 2021/10/06 (Wed). -- one week

(01) Materials 資料

Students should access PDF and read it watching videos.

R01-01, R01-11, R01-21, R01-31, R01-41

Videos explaining the contents of the PDF.

Students must watch them one by one.

(01) Assignment 課題

(01) Assignment PDF

The content of the assignment is described in PDF, which you can access after watching videos.

Prepare the submission (report) according to the instructions.

Download the DOC file or TXT file, use them to prepare your submission, and upload it to this location before the lecture time.

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

Section structure with heading following the instructions.

[Aim]

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

There is no correct answer. There is no perfect answer.

(01) Discussion 議論

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

It is available until the deadline for submitting **(01) Supplement 補筆**.

[Reason]

You may not be the only one who has a question. Share the discussion.

<<2/3>> **Classwork**

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

during class hour from 09h00 to 10h30, 2021/10/06 (Wed).

(01) Zoom meeting ズーム会議

Open Zoom meeting,

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

(1) Greeting.

(2) Grouping, breakout room with about five students.

(3) Group work at breakout room, GW (about 20 min), with report by reporters.

(4) Closing.

(01) Attendance 出欠

At the top of the "RBT course" in Waseda Moodle, check your attendance.

(01) Collaborative learning 共同学習

Move to breakout room.

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

[Aim]

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

Learn new things and others' viewpoint from comments and suggestions.

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

Anything on writing, presentation, discussion, and so on.

Download the DOC file or TXT file in **(01) Supplement** as the Worksheet.
Title, given/submitted date, ID number and Family-Given name.
Section structure with heading following the instructions.

0. Group number and group member (ID, name).

One must be the **chairperson**.

One must be the **time-keeper**.

1. **GW-1, about submitted assignment** (15 min = 10 min + 5 min).

Each member must present (1-2 min) using screen sharing function of zoom to show his/her **assignment file**, and others must **take notes** while listening.

Discuss (exchange of opinions) based on each presentation.

(good point, reference point, points to be learned, etc.)

After the breakout session, a representative introduces the result of the group discussion to all.

2. **GW-2, findings/interest and unclear points/questions** (15 min = 5 min + 10 min).

Each member must present (1 min) using screen sharing function of zoom to show his/her **prepared materials**, and others must **take notes** while listening.

Discuss (exchange of opinions) based on each presentation.

(show what other student understand and explain it, etc.)

After the breakout session, a representative introduces the result of the group discussion to all.

[Aim]

Inform the activities and results of the Group Work during class hours.

Present what you have learned through the group activities and addition study.

<<3/3>> **Post-learning**

using Waseda Moodle

from 10h30, 2021/10/06 (Wed) to 10h30, 2021/10/07 (Thu). --- 24 hours

(01) Supplement 補筆

Revise and update the DOC file or TXT file.

It might include (1) **supplements / corrections of submitted assignment**, (2) summary of your group discussions in the class, (3) findings through after-class learning, (4) **comments / opinions**, and so on.

[Aim]

Inform the activities and results of the Group Work during class hours.

Present what you have learned through the group activities and addition study.

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Trial in [00] 2021/09/29 (Wed)

<<1/3>> **Pre-learning**

(00) Discussion 議論

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

It is available until the deadline for submitting **(00) Supplement 補筆**.

[Reason]

You may not be the only one who has a question. Share the discussion.

<<2/3>> **Classwork**

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

during class hour from 09h00 to 10h30, 2021/09/29 (Wed).

(01) Zoom meeting ズーム会議

Open Zoom meeting,

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

(1) Greeting.

(2) Grouping, breakout room with about five students.

(3) Group work at breakout room, GW-1 (15 min) and GW-2 (15 min), with announcement by representatives.

(4) Closing.

(01) Attendance 出欠

At the top of the "RBT course" in Waseda Moodle, check your attendance.

(01) Collaborative learning 共同学習

Move to breakout room.

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

GW-1

Topic: Introduction of graduation / other project 卒業プロジェクト

Write in a file (any format OK) in your PC in **5 min**.

Prepare some diagram (chart, figures, pictures, etc.) if possible.

+ Field / Target 分野・対象

+ Purpose 目的

+ Subject / Problem 問題・課題

+ Approach / Method 手段・方法

+ Implementation 実装

+ Experiments 実験

+ Results 結果

+ Conclusion 結論

05 min.

09h30-09h35 Prepare contents to present/discuss

If you have some time, please add some pictures to explain.

15 min.

09h35-09h50 Introduce your hometown

Sharing your screen by using zoom function.

Download the DOC file or TXT file in **(00) Supplement** as the Worksheet.

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

Section structure with leading words, following the instructions.

0. Group number and group member (ID, name).

One must be the **chairperson**.

One must be the **time-keeper**.

1. **GW-1, Introduction of my graduation / other project** (15 min).

Each member must present (1-2 min) using screen sharing function in zoom to show his/her **prepared file**, and others must **take notes** while listening.

Discuss (exchange of opinions) based on all presentations.

(good point, reference point, points to be learned, etc.)

After the breakout session, a representative introduces the result of the group discussion to all.

2. **GW-2, findings/interest and unclear points/questions** (15 min = 5 min + 10 min).

Each member must present (1 min) using screen sharing function of zoom to show his/her **prepared materials**, and others must **take notes** while listening.

Discuss (exchange of understandings) based on each presentation.

(show what other student understand and explain it, etc.)

After the breakout session, a representative introduces the result of the group discussion to all.

[Aim]

Inform the activities and results of the Group Work during class hours.

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<<3/3>> **Post-learning**

using Waseda Moodle

from 10h30, 2021/09/29 (Wed) to 10h30, 2021/09/30 (Thu). --- 24 hours

(00) Supplement 補筆

Revise and update the DOC file or TXT file.

It might include (1) **supplements / corrections of submitted assignment**, (2) summary of your group discussions in the class, (3) findings through after-class learning, (4) **comments / opinions**, and so on.

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Inform the activities and results of the Group Work during class hours.

Present what you have learned through the group activities and addition study.