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Automation and Control Engineering,
B.A. and M.Sc. Programmes

Informative Meeting on Study Plan Presentation

September 17, 2021

Study plan committee

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Study plan

Each academic year students must present a **Study Plan,** which is a list of educational activities (exams, laboratories, other activities) that are **compliant with the degree programme** and that the student can carry out during the year.

Each year: **min 30 credits** – **max 80 credits** (fees depend on the amount of credits)

Bachelor: the Study Plan is **valid for one year**. This means that every year, you must include in your Plan the **request for new courses**/educational activities and **courses** of previous years that you have **not yet passed**.

Master: it is **enough to enter the courses**/educational activities **only once** in the Study Plan and these, if you do not pass the exam, will remain for the following years.

https://www.polimi.it/en/current-students/study-plan-and-ofa/what-is-the-study-plan/

Study plan (cont'd)

Courses can be put in the study plan as

Effective (typical choice)**:** all the credits corresponding effective courses contribute to achieve the required number of credits you have to earn to receive the degree; all marks of effective courses are averaged to determine the final score; all effective courses must be passed to graduate.

Excess: they do not contribute to achieve the required number of credits to obtain the degree; their marks are not averaged to determine the final score; you are not required to pass excess courses to graduate.

https://www.polimi.it/en/current-students/study-plan-and-ofa/what-is-the-study-plan/

Study plan presentation

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During the year, there are **two time periods when students are allowed to present and modify the study plans**:

- **at the beginning of the first semester (September / October):**
  it is possible to introduce changes (additions, removals, variations from “effective (E)” to “excess (S)” and viceversa) to courses **of both the first and second semester**
- **at the beginning of the second one (March):**
  it is possible to make the following modifications related to courses of **the ongoing academic year only:** 1) add and delete 2nd semester courses and 2) make variations from “effective (E)” to “excess (S)” and viceversa to courses of both 1st and 2nd semester.

https://www.polimi.it/en/current-students/study-plan-and-ofa/how-to-submit-the-study-plan/

Evaluation of the study plans

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- The committee can proceed with the evaluation of the study plans **only after** the expiration of the deadline for their presentation/modification.
- Evaluation typically takes two to three weeks.
- If a study plan is not approvable, the committee **will contact the student by email to agree on a solution**. The consequent modification of the study plan will be made by the committee.

http://www.ccsatm.polimi.it/studenti/piani-di-studio/?lang=en

Bachelor programme requirements

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You have to earn 180 credits (165 mandatory, 15 elective)

Insegnamento	**Crediti**	**Semestre**
Analisi matematica 1	10	1
Fondamenti di Informatica	10	1
Geometria e algebra lineare	8	1
Fisica	12	2
Economia e organizzazione aziendale	10	2
Elettrotecnica	10	2

Bachelor programme requirements

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You have to earn 180 credits (165 mandatory, 15 elective)

Insegnamento	**Crediti**	**Semestre**
Analisi matematica 2 (per l'automazione)	8	1
Fisica tecnica e macchine	8	1
Sistemi informatici	8	1
Reti di telecomunicazione	5	1
Fondamenti di automatica	10	2
Modellistica dei sistemi meccanici	10	2
Fondamenti di elettronica	10	2

Bachelor programme requirements

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You have to earn 180 credits (165 mandatory, 15 elective)

1 ANNO

2 ANNO

3 ANNO

3 credits in red
serve as thesis

You have to present a study plan with your choice of courses

Insegnamento	Crediti	Semestre
Macchine elettriche e azionamenti	9+1	1
Misure e strumentazione	8	1
Sistemi a eventi discreti	5	1
Controllo dei processi	7+1	2
Impianti industriali e gestione della produzione	9+1	2
Fondamenti di robotica	5	2
Elective credits or Tirocinio	**15**	**1, 2**

Bachelor - elective credits in the 3rd year

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Suggested elective courses (table from the «manifesto»):

- 1st semester:
  Basi di dati 1, Calcolo delle probabilità e statistica, Chimica Generale
- 2nd semester:
  Elementi di analisi funzionale e trasformate, Fondamenti di ricerca operativa

✓ «Tirocinio» (15 credits) can be useful for those who want to terminate their studies with the Bachelor and make a first contact with industries

✓ Courses «Calcolo delle probabilità e statistica» e «Fondamenti di ricerca operativa» suggested to those who want to continue with the Master in Automation and Control Engineering.

Bachelor – autonomous study plan

If the study plan is compliant with the given indications is automatically approved. Otherwise, it is classified as an autonomous study plan.

Bachelor students may present an autonomous study plan because:

- They want to include courses corresponding to years other than the current one
- They choose elective courses, among the 15 available in the 3rd year, that are not those suggested in the «manifesto».

In the latter case, the study plan must be approved by the study plan committed, who evaluates the coherence with the educational project and the overlap with other courses in the plan

http://www.ccsatm.polimi.it/studenti/piani-di-studio/

Master programme requirements

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What are the rules to obtain your MSc degree?

You have to earn 120 credits:

- 60 credits of mandatory courses:
  - 45 on qualifying subjects (systems and control, identification, converters and drives, applied mechanics)
  - 15 credits on subsidiary subjects (computer science, electronics, measurements, industrial production technologies)
- 40 credits of elective courses
- a final thesis corresponding to 20 credits

You have to present a study plan with your choice of courses

Master - 60 credits of mandatory courses

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1st year

Course title	Credits (CFU)	Semester
Computer aided manufacturing	10	1
Dynamics of mechanical systems	10	1
Model identification and data analysis	10	1
Advanced and multivariable control	10	2
Dynamics of electrical machines and drives	10	2
Elective courses	10	2

2nd year

Course title	Credits (CFU)	Semester
Software Engineering (for Automation)	5	2
Automation and Control Laboratory	5	2
Elective courses	30	1, 2
Thesis	20	1, 2

Master - 40 credits of elective courses

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1st year

Course title	Credits (CFU)	Semester
Computer aided manufacturing	10	1
Dynamics of mechanical systems	10	1
Model identification and data analysis	10	1
Advanced and multivariable control	10	2
Dynamics of electrical machines and drives	10	2
Elective courses	10	2

2nd year

Course title	Credits (CFU)	Semester
Software Engineering (for Automation)	5	2
Automation and Control Laboratory	5	2
Elective courses	30	1, 2
Thesis	20	1, 2

Master – elective courses

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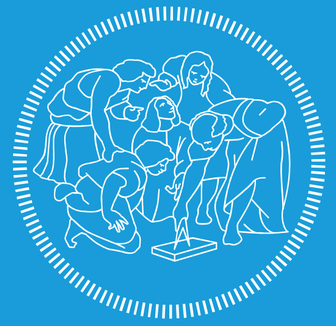
- Tables of suggested courses:
  - TAB1 (1st semester) and TAB2 (2nd semester)
  - TAB3 (1st semester) and TAB4 (2nd semester)
  - Transversal Skills
- at least 20 credits out of 40 credits must be taken from TAB1 or TAB2 (a larger number of credits is suggested)
- the residual 20 credits should be chosen from TAB1, TAB2, TAB3, TAB4 and Transversal Skills without constraints, except that no more than 10 credits can be chosen from Transversal Skills

Master – elective courses (cont'd)

- if the study plan is compliant with the suggestions (at least 20 of the 40 credits of complementary courses from TAB1 and TAB2, and the remaining 20 credits from TAB1, TAB2, TAB3, TAB4 and Transversal Skills with no more than 10 credits from Transversal Skills), then the plan is automatically approved
- Otherwise (students can also include a maximum of 10 credits of freely chosen courses) the study plan is "autonomous" and subject to approval by the study plan committee. The committee evaluates the coherence with the educational project and the overlap with other courses in the plan and with courses already offered in the Automation and Control Engineering master program. Note that the total amount of courses from Transversal Skills and those freely chosen from other master programs on transversal skill topics cannot exceed 10 credits.

Questions?



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