Thermique des Machines électriques (Thermal Management of E)

Niveau d'étude
BAC +4

ECTS
2 crédits

Composante
UFR STGI, site de Belfort

Volume horaire
15h

En bref

- **Langue(s) d'enseignement:** Anglais, Français
- **Ouvert aux étudiants en échange:** Non

Présentation

Description

Electrical machines have broadly been used in many industries including the transportation industry. Electrical machines with higher power density and higher efficiency are demanded and, thus, more stringent thermal management requirements are needed for electrified vehicle applications. Design considerations, challenges, and methods for enhanced thermal management concern this course. Fundamental thermal properties of common materials are presented and sources of losses in various parts of machines are explained. Furthermore, typical cooling techniques and thermal analysis approaches for electrical machines are reviewed in detail.

Objectifs

- Provide students a relative autonomy using the "**project-based learning**" method.
- Develop a experience in the field of research and development.
- Develop the need to work on coupled physical problems, especially magnetic and thermal.
- Develop the ability to work in English.
- Develop to work in a team with a designated team manager (switch roles during learning)
- Develop the ability to work on a common topic while having different academic backgrounds/cultures

Informations non contractuelles.
Dernière mise à jour le 09 avril 2026

Heures d'enseignement

CM	Cours Magistral	6h
TD	Travaux Dirigés	3h
TP	Travaux Pratiques	6h
AMSP		
AMSE		
TDEQ		18h
PRES		15h
PERSO		35h
TOT		50h

Modalités de contrôle des connaissances

Évaluation initiale / Session principale - Épreuves

Type d'évaluation	Nature de l'épreuve	Durée (en minutes)	Nombre d'épreuves	Coefficient de l'épreuve	Note éliminatoire de l'épreuve	Remarques
CC (contrôle continu)	Livrable		Min 1	50%		Session unique
CC (contrôle continu)	Oral		Min 1	50%		Session unique

Infos pratiques

Contacts

Responsable pédagogique

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