We, as members of Ingénieurs Sans Frontières France, believe that the existing leadership of a technicist model erected as universal brings inequality on a global scale. Within this system, engineers are often depicted as the masters of technology. This role confers a special responsibility upon engineers to adapt technology to society and transform society through technology.

It is our firm belief that this responsibility should be guided by the drive towards more social and environmental justice. For us, this means an individual and collective commitment to the public interest, which we believe can only be achieved through the pursuance of a democratic approach that reaches beyond simply making the engineering profession more “just” or “responsible.”

In this manifesto, we question the ability of engineering training programmes in France to create professionals capable of collectively carrying out this responsibility. We outline the principles which, we believe, should form the basis of any efforts to conceive of French training programmes differently.

INGÉNIEURS SANS FRONTIÈRES
GIVING MEANING
TO TECHNOLOGY
FOR A FAIRER WORLD

Ingénieurs sans frontières is an international solidarity organisation created in 1982 that is working towards sustainable development through engaging critically with engineering approaches.

The main social missions of the organisation are:

• to participate in development projects in the Global South;
• to raise awareness of international solidarity and sustainable development issues among engineers;
• to carry out and disseminate studies establishing a link between the world of engineering and international solidarity issues;
• to develop a network of Citizen Engineers working collectively for international solidarity within Ingénieurs sans frontières.

Ingénieurs sans frontières is a federation comprising 25 associations (called local chapters) located in 60 engineering schools throughout France, as well as cluster groups composed of engineers that work on topics related to their professional specialisation. Around 600 people, mostly engineering students and engineers, are members of the organisation.

For more information see www.isf-france.org
ENGINEERING TRAINING PROGRAMMES SHOULD REAFFIRM A ROLE FOR THE ENGINEER AS AN INTERFACE BETWEEN SCIENCE AND SOCIETY

Teaching critical thinking, independence and reflexivity: revealing the politics embedded in technology

The skills and methods taught most often set the capital returns as the true priority, without this goal ever being admitted or called into question. The teaching of the socio-environmental complexities within technical decisions (scientific controversies, epistemology, power games, etc.) is all too often sporadic within engineering training programmes. This wrongly imposes a depoliticised and neutral outlook on technology and fuels a belief in the inherent benefits of technology.

We are asking that technology’s political basis – and thus the fact that it embodies society’s ideological decisions – should be brought to light during training programmes; a neutral stance being equally political by nature. This can be carried out through pluralistic and interdisciplinary approaches to teaching which give room to divergent opinions. We believe it is essential that the public interest is prioritised over profitability and that the students acquire the ability to think critically, systematically and politically.

Similarly, we think that the teaching of human and social sciences should contribute to cultivating an enquiring mind, to questioning conventional thinking and to reflecting upon the role of engineers in society. Active teaching methods and truly accommodating social sciences within teaching practices (through budgets, labs and related research, etc.) are but some of the tools capable of contributing to this goal, used as part of a wider critical approach.

Beyond individual responsibility lies collective responsibility

Initial training programmes should bring future engineers to think in terms of collective action where they would currently be urged to resort to thinking in terms of individual actions. The idea of individual responsibility must not allow engineers to abdicate their responsibility of calling into question a system and its concomitant failures. Such failures lead – even sometimes force – engineers to favour private interests at the expense of the collective interest and to the detriment of the common good with the inevitable environmental and social dumping being amongst just some of their effects. The responsibility of engineers must therefore be understood as a collective process. It should allow the denunciation of potential dangers to – or oppression of – the free expression of democracy. It should
defend the common good and the human rights, and encourage alternative solutions to be developed. Thus, knowledge about the rights of Peoples and the movements that defend them, is needed.

Separating the role of the engineer from the status of management: rethinking work organisation in France

French engineering training programmes aim to assimilate engineers into the social class of managers and condition them to conform to conventional thinking in their practice. Schools, alongside the courses which prepare students for entry into elite engineering training programmes in France, and these training programmes themselves contribute to creating an elite and to perpetuating its social standing, thereby encouraging its subservience to the existing system. Training programmes too often mark themselves out for relaying an uncritical view of the role of engineers and their place in society. Such teaching is done without taking a step back to examine work organisation and its implications: little room for dialogue within companies and within society as well as little room for joint decision-making and collective responsibility, etc.

We believe that training programmes must offer a pluralistic view of work organisation and notably give room to critical perspectives on the status afforded to engineers in France, which automatically sees them afforded special prerogatives as managers within companies’ hierarchies. This pluralistic examination will only be possible by including stakeholders other than engineers themselves.

We want engineering students to be trained to fulfil the social role of facilitators in the democratic development of society’s technical decisions in order to make it possible for citizens to take ownership of technology and to optimise its emancipatory potential.

SHARING GOVERNANCE AND DEMOCRATISING TRAINING PROGRAMMES

Setting up shared governance and democratic building of training programmes

Across France, engineering training programmes are devised by non-democratic bodies along corporate lines. This must therefore be changed so as to include and be representative of society as a whole. Aware of the historical distinction between engineering schools and universities in France, we question such a separation. We believe it is essential from this day forward to conceive of engineering training programmes within the common framework for higher education training if the
public interest is to be served. Within establishments, student involvement in engineering training programmes is largely limited to a few student organisations whose scope lacks any representational function. In contrast, our wish is for governance to be shared with appointed student representatives without this precluding a dialogue with student organisations. These representatives will have to be able to lead the debate amongst students if their arguments are to hold any legitimacy. Making all students aware of the governance mechanisms and their issues is a prerequisite for this.

Halting the privatisation of teaching
The privatisation of teaching within public universities, which leads knowledge to be imparted in line with existing industry practice as well as to a lack of diverse knowledge bases, must be halted. Accordingly, the private financing of engineering training courses must not have a bearing on programme decisions nor favour research or training areas according to profitability criteria. More generally, the overwhelming place of these private interests in deciding the direction of training programmes must be moderated.

For us, these proposals are an essential strategy in creating critical and responsible engineering training programmes that serve us all. Ingénieurs Sans Frontières France is committed to having these matters debated within training programmes and to campaigning collectively for their inclusion.

Contact:
Ingénieurs sans frontières,
146 rue de Crimée, 75019 Paris
Tel : +33 (0) 1 53 35 05 40
contact.formic@isf-france.org
www.isf-france.org/ingecit

THE PROJECT «TRAINING THE CITIZEN ENGINEER»

For Ingénieurs sans frontières, an organisation composed mainly of students, it is crucial that critical thinking has a place in their education at engineering schools or universities. For the last twelve years, Ingénieurs sans frontières has been promoting a range of initiatives at engineering schools towards a transformation of engineering training. With its programme «Training the Citizen Engineer» launched in 2008, Ingénieurs sans frontières continues working towards this aim. Seeking an action-research approach, the programme seeks collaboration between diverse actors across higher education, trade unions and civil society in France. Adopted in 2014, this manifesto is meant to create debate and inspire action.

For more information see www.isf-france.org/ingecit (in French)