

2025 Inspec Thesaurus and Classification Code Changes

About Thesaurus and Classification Codes

The Inspec Thesaurus and Classification scheme are valuable search tools to help you refine your search results.

The Thesaurus contains over 10100 Index Terms and is a terminology based subject index. The Index Terms are themselves interrelated to allow you either to find the most exact term(s) to add to your search or to broaden out your search with additional terms.

The Inspec Classification is a subject categorisation scheme containing over 3700 Classification Codes. These codes can be used to specify a subject area without needing to specify all the sub-concepts that might be used to define it, and to restrict the results of Index Term searches which may cross subject areas.

About Revisions

Inspec regularly assesses and updates these taxonomies in line with advances in scientific and technological terminology and changes in the focus of research.

New Classification Codes may be added to allow access to formerly hard to access concepts and codes may be amended to reflect changes in terminology or to make explicit indexing practice. For 2025, 14 new codes are being added and 1 code is being retired.

Similarly new Index Terms may be introduced to allow new concepts to be specified, to subdivide growing research areas, or to match changes in the terminology of the material being indexed. 53 new Index Terms are being introduced for 2025. In addition, 113 concepts are being added which are synonyms, or explain, and lead to the Index Terms to use for those concepts. There are also a number of corrections and additions to the inter-term and code-term relationships. There are 3 Index Terms being retired.

The improved Thesaurus and Classification tools containing all these changes will be available in January in time for the first update of 2025.

Changes for 2025

If your Saved Search (or Alert) contains Full Terms or Classification Codes from the following lists, you may wish to consider the related new concepts for addition into your strategy.

List of New Classification Codes linked to Pre-2025 Practice

Pre 2025 Code	New Code	New Code Text
B1265F	B1265L	AI chips
C5130	C5134	AI chips
C5470	C5470P	Power aware computing
C6210	C6205	Explainable AI
C6264	C6264C	Convolutional neural nets
C6264	C6264G	Generative AI (inc. generative adversarial networks)
C6264	C6264R	Recurrent neural nets
C6264	C6264T	Transformers (neural nets)
C6260	C6266F	Federated learning

C6266	C6266R	Random forests
E1525	E1525A	Adsorption
E1525	E1525C	Catalysis and catalysts
E1525	E1525F	Filtration and separation
E1525	E1525Z	Other Industrial processes

List of New Index Terms Linked to Pre-2025 Terms

Pre 2025 Index term	Relationship	New 2025 Index term
capacitor switching	Related term	AC distribution networks
distributed power generation	Related term	AC distribution networks
distribution networks	Narrow Term	AC distribution networks
load flow	Related term	AC distribution networks
power distribution control	Related term	AC distribution networks
power distribution economics	Related term	AC distribution networks
power distribution faults	Related term	AC distribution networks
power distribution reliability	Related term	AC distribution networks
power grids	Related term	AC distribution networks
power stations	Related term	AC distribution networks
power systems	Related term	AC distribution networks
reactive power	Related term	AC distribution networks
smart power grids	Related term	AC distribution networks
substations	Related term	AC distribution networks
traction power supplies	Related term	AC distribution networks
transmission networks	Related term	AC distribution networks
distribution networks	Related term	AC transmission networks
flexible AC transmission systems	Related term	AC transmission networks
load flow	Related term	AC transmission networks
power grids	Related term	AC transmission networks
power system interconnection	Related term	AC transmission networks
power transmission control	Related term	AC transmission networks
power transmission economics	Related term	AC transmission networks
power transmission faults	Related term	AC transmission networks
power transmission lines	Related term	AC transmission networks
power transmission planning	Related term	AC transmission networks
reactive power	Related term	AC transmission networks
smart power grids	Related term	AC transmission networks
transmission network calculations	Related term	AC transmission networks
transmission networks	Narrow Term	AC transmission networks
computer crime	Narrow Term	adversarial machine learning
computer network security	Related term	adversarial machine learning
deep learning (artificial intelligence)	Related term	adversarial machine learning
federated learning	Related term	adversarial machine learning
image classification	Related term	adversarial machine learning
invasive software	Related term	adversarial machine learning
neural nets	Related term	adversarial machine learning
pattern classification	Related term	adversarial machine learning

reinforcement learning	Related term	adversarial machine learning
security of hardware	Related term	adversarial machine learning
supervised learning	Related term	adversarial machine learning
transfer learning (artificial intelligence)	Related term	adversarial machine learning
unsupervised learning	Related term	adversarial machine learning
convolutional neural nets	Related term	adversarial neural nets
deep learning (artificial intelligence)	Narrow Term	adversarial neural nets
feature extraction	Related term	adversarial neural nets
pattern classification	Related term	adversarial neural nets
recurrent neural nets	Related term	adversarial neural nets
reinforcement learning	Related term	adversarial neural nets
unsupervised learning	Related term	adversarial neural nets
agricultural engineering	Related term	agricultural computing
agricultural robots	Related term	agricultural computing
agriculture	Narrow Term	agricultural computing
computer applications	Narrow Term	agricultural computing
crops	Related term	agricultural computing
farming	Related term	agricultural computing
geophysical image processing	Related term	agricultural computing
image processing	Related term	agricultural computing
plant diseases	Related term	agricultural computing
remote sensing	Related term	agricultural computing
robot vision	Related term	agricultural computing
soil	Related term	agricultural computing
vegetation mapping	Related term	agricultural computing
atmospheric boundary layer	Related term	atmospheric convection
atmospheric movements	Narrow Term	atmospheric convection
atmospheric temperature	Related term	atmospheric convection
atmospheric thermodynamics	Related term	atmospheric convection
atmospheric turbulence	Related term	atmospheric convection
convection	Narrow Term	atmospheric convection
advanced driver assistance systems	Related term	autonomous driving
automotive computing	Related term	autonomous driving
automotive control	Narrow Term	autonomous driving
driver information systems	Related term	autonomous driving
human factors	Related term	autonomous driving
intelligent transportation systems	Related term	autonomous driving
mobile robots	Related term	autonomous driving
object detection	Related term	autonomous driving
road safety	Related term	autonomous driving
road traffic	Related term	autonomous driving
road traffic control	Related term	autonomous driving
road vehicles	Narrow Term	autonomous driving
robot vision	Related term	autonomous driving
traffic engineering computing	Related term	autonomous driving
unmanned ground vehicles	Related term	autonomous driving
velocity control	Related term	autonomous driving
agriculture	Related term	biochar

biotechnology	Related term	biochar
charcoal	Related term	biochar
environmental factors	Related term	biochar
fertilisers	Related term	biochar
organic compounds	Related term	biochar
pyrolysis	Related term	biochar
renewable materials	Narrow Term	biochar
soil	Related term	biochar
wastewater treatment	Related term	biochar
biodegradable materials	Related term	bioremediation
biotechnology	Related term	bioremediation
contaminated site remediation	Narrow Term	bioremediation
decontamination	Narrow Term	bioremediation
microorganisms	Related term	bioremediation
sludge treatment	Related term	bioremediation
soil pollution	Related term	bioremediation
toxicology	Related term	bioremediation
wastewater treatment	Related term	bioremediation
water pollution	Related term	bioremediation
chalcogenide glasses	BroaderTerm	chalcogenide semiconductors
II-VI semiconductors	Related term	chalcogenide semiconductors
semiconductor materials	Narrow Term	chalcogenide semiconductors
ternary semiconductors	Related term	chalcogenide semiconductors
transition metal dichalcogenides	BroaderTerm	chalcogenide semiconductors
complex networks	Related term	community detection (network theory)
graph theory	Related term	community detection (network theory)
network theory (graphs)	Narrow Term	community detection (network theory)
pattern clustering	Related term	community detection (network theory)
social network theory	Related term	community detection (network theory)
social networking (online)	Related term	community detection (network theory)
benchmark testing	Related term	computer performance evaluation
computer evaluation	Related term	computer performance evaluation
computer network performance evaluation	Related term	computer performance evaluation
computer purchase	Related term	computer performance evaluation
computer selection	Related term	computer performance evaluation
computer testing	Related term	computer performance evaluation
DP management	Related term	computer performance evaluation
fault tolerant computing	Related term	computer performance evaluation
performance evaluation	Narrow Term	computer performance evaluation
power aware computing	Related term	computer performance evaluation
data analysis	Narrow Term	cosine similarity
data mining	Related term	cosine similarity
feature extraction	Related term	cosine similarity

information retrieval	Related term	cosine similarity
natural language processing	Related term	cosine similarity
nearest neighbour methods	Related term	cosine similarity
text analysis	Related term	cosine similarity
vectors	Narrow Term	cosine similarity
polymer structure	Related term	covalent organic frameworks
polymers	Narrow Term	covalent organic frameworks
porosity	Related term	covalent organic frameworks
porous materials	Narrow Term	covalent organic frameworks
catalysis	Related term	dehydrogenation
chemical reactions	Narrow Term	dehydrogenation
hydrogen	Related term	dehydrogenation
hydrogen storage	Related term	dehydrogenation
hydrogenation	Related term	dehydrogenation
data fusion	Narrow Term	feature fusion
feature extraction	Narrow Term	feature fusion
feature selection	Related term	feature fusion
image classification	Related term	feature fusion
image fusion	Related term	feature fusion
neural nets	Related term	feature fusion
object detection	Related term	feature fusion
sensor fusion	Related term	feature fusion
galaxies	Related term	galactic mass
convolutional neural nets	Related term	generative adversarial networks
feature extraction	Related term	generative adversarial networks
image classification	Related term	generative adversarial networks
image reconstruction	Related term	generative adversarial networks
image resolution	Related term	generative adversarial networks
image segmentation	Related term	generative adversarial networks
medical image processing	Related term	generative adversarial networks
pattern classification	Related term	generative adversarial networks
unsupervised learning	Related term	generative adversarial networks
chatbots	Related term	generative AI
computer crime	Related term	generative AI
convolutional neural nets	Related term	generative AI
data augmentation	Related term	generative AI
deep learning (artificial intelligence)	Narrow Term	generative AI
ethical aspects	Related term	generative AI
fake news	Related term	generative AI
human computer interaction	Related term	generative AI
image forensics	Related term	generative AI
image processing	Related term	generative AI
natural language processing	Related term	generative AI
politics	Related term	generative AI
recurrent neural nets	Related term	generative AI
reinforcement learning	Related term	generative AI
supervised learning	Related term	generative AI
text analysis	Related term	generative AI
unsupervised learning	Related term	generative AI

decision trees	Related term	gradient boosting
deep learning (artificial intelligence)	Related term	gradient boosting
ensemble learning	Narrow Term	gradient boosting
feature extraction	Related term	gradient boosting
gradient methods	Narrow Term	gradient boosting
neural nets	Related term	gradient boosting
pattern classification	Related term	gradient boosting
regression analysis	Related term	gradient boosting
supervised learning	Narrow Term	gradient boosting
support vector machines	Related term	gradient boosting
cloud computing	Related term	homomorphic encryption
cryptography	Narrow Term	homomorphic encryption
data analysis	Related term	homomorphic encryption
data privacy	Related term	homomorphic encryption
public key cryptography	Related term	homomorphic encryption
biomedical materials	Related term	hydroxyapatite
calcium compounds	Narrow Term	hydroxyapatite
adaptive filters	Related term	Kalman filters (signal processing)
adaptive Kalman filters	BroaderTerm	Kalman filters (signal processing)
filtering theory	Related term	Kalman filters (signal processing)
filters	Narrow Term	Kalman filters (signal processing)
H ₂ filters	Related term	Kalman filters (signal processing)
H _∞ filters	Related term	Kalman filters (signal processing)
information theory	Related term	Kalman filters (signal processing)
SLAM (robots)	Related term	Kalman filters (signal processing)
soft sensors	Related term	Kalman filters (signal processing)
time-varying filters	Related term	Kalman filters (signal processing)
tracking filters	Related term	Kalman filters (signal processing)
adaptive Kalman filters	BroaderTerm	Kalman filters (state estimation)
estimation theory	Related term	Kalman filters (state estimation)
filters	Narrow Term	Kalman filters (state estimation)
observability	Related term	Kalman filters (state estimation)
state estimation	Narrow Term	Kalman filters (state estimation)
data mining	Related term	knowledge graphs
formal languages	Related term	knowledge graphs
graph theory	Narrow Term	knowledge graphs
inference mechanisms	Related term	knowledge graphs
information retrieval	Related term	knowledge graphs
natural language processing	Related term	knowledge graphs
ontologies (artificial intelligence)	Narrow Term	knowledge graphs
query processing	Related term	knowledge graphs
semantic networks	Narrow Term	knowledge graphs
text analysis	Related term	knowledge graphs
chatbots	Related term	large language models
feature extraction	Related term	large language models
natural language processing	Narrow Term	large language models
pattern classification	Related term	large language models
question answering (information retrieval)	Related term	large language models

speech recognition	Related term	large language models
text analysis	Related term	large language models
laser materials processing	Narrow Term	laser powder bed fusion
powder technology	Narrow Term	laser powder bed fusion
three-dimensional printing	Narrow Term	laser powder bed fusion
adaptive resonance theory	Related term	machine learning
AI chips	Related term	machine learning
artificial intelligence	Narrow Term	machine learning
backpropagation	BroaderTerm	machine learning
Boltzmann machines	Related term	machine learning
chatbots	Related term	machine learning
conditional random fields	Related term	machine learning
data augmentation	Related term	machine learning
data preparation	Related term	machine learning
data science	Related term	machine learning
decision trees	Related term	machine learning
deep learning (artificial intelligence)	BroaderTerm	machine learning
ensemble learning	BroaderTerm	machine learning
explainable AI	Related term	machine learning
fake news	Related term	machine learning
feature selection	Related term	machine learning
federated learning	BroaderTerm	machine learning
feedforward neural nets	Related term	machine learning
fuzzy cognitive maps	Related term	machine learning
granular computing	Related term	machine learning
Hebbian learning	BroaderTerm	machine learning
Hopfield neural nets	Related term	machine learning
human activity recognition	Related term	machine learning
image annotation	Related term	machine learning
independent component analysis	Related term	machine learning
k-means algorithms	Related term	machine learning
learning automata	Related term	machine learning
learning by example	BroaderTerm	machine learning
learning systems	Related term	machine learning
linear discriminant analysis	Related term	machine learning
logistic regression	Related term	machine learning
multilayer perceptrons	Related term	machine learning
naive Bayes methods	BroaderTerm	machine learning
nearest neighbour methods	BroaderTerm	machine learning
neurocontrollers	Related term	machine learning
perceptrons	Related term	machine learning
radial basis function networks	Related term	machine learning
random forests	BroaderTerm	machine learning
recurrent neural nets	Related term	machine learning
reinforcement learning	BroaderTerm	machine learning
self-organising feature maps	Related term	machine learning
semi-supervised learning (artificial intelligence)	BroaderTerm	machine learning
social robots	Related term	machine learning

soft sensors	Related term	machine learning
supervised learning	BroaderTerm	machine learning
support vector machines	Related term	machine learning
transfer learning (artificial intelligence)	BroaderTerm	machine learning
unsupervised learning	BroaderTerm	machine learning
biological effects of microwaves	BroaderTerm	microwave radiation effects
radiation effects	Narrow Term	microwave radiation effects
channel flow	Narrow Term	nanochannel flow
nanofluidics	Narrow Term	nanochannel flow
pipe flow	Related term	nanochannel flow
Poiseuille flow	Related term	nanochannel flow
nanocomposites	Related term	nanodots
nanofabrication	Related term	nanodots
nanoparticles	Related term	nanodots
nanostructured materials	Narrow Term	nanodots
quantum dots	Related term	nanodots
semiconductor quantum dots	Related term	nanodots
colloids	Related term	nanofluids
heat transfer	Related term	nanofluids
nanofluidics	Related term	nanofluids
nanoparticles	Related term	nanofluids
nanostructured materials	Narrow Term	nanofluids
suspensions	Related term	nanofluids
two-phase flow	Related term	nanofluids
nanostructured materials	Narrow Term	nanostructured superconductors
nanotechnology	Related term	nanostructured superconductors
superconducting materials	Narrow Term	nanostructured superconductors
superconductivity	Related term	nanostructured superconductors
phonons	Narrow Term	optical phonons
dyes	Related term	photodegradation
laser beam effects	Related term	photodegradation
pharmaceuticals	Related term	photodegradation
photocatalysis	Related term	photodegradation
photochemistry	Narrow Term	photodegradation
ultraviolet radiation effects	Related term	photodegradation
visible light radiation effects	Related term	photodegradation
wastewater treatment	Related term	photodegradation
water pollution control	Related term	photodegradation
water treatment	Related term	photodegradation
cryptographic protocols	Related term	physical unclonable functions
cryptography	Related term	physical unclonable functions
digital signatures	Related term	physical unclonable functions
Internet of Things	Related term	physical unclonable functions
monolithic integrated circuits	Related term	physical unclonable functions
security of hardware	Related term	physical unclonable functions
cogeneration	BroaderTerm	polygeneration
direct energy conversion	Related term	polygeneration
electric power generation	Narrow Term	polygeneration
energy Internet	Related term	polygeneration

exergy	Related term	polygeneration
heating	Related term	polygeneration
hydrogen production	Related term	polygeneration
power generation economics	Related term	polygeneration
trigeneration	BroaderTerm	polygeneration
agricultural machinery	Related term	precision agriculture
agricultural robots	Related term	precision agriculture
agriculture	Narrow Term	precision agriculture
artificial intelligence	Related term	precision agriculture
autonomous aerial vehicles	Related term	precision agriculture
crops	Related term	precision agriculture
Global Positioning System	Related term	precision agriculture
image classification	Related term	precision agriculture
Internet of Things	Related term	precision agriculture
mobile robots	Related term	precision agriculture
remote sensing	Related term	precision agriculture
wireless sensor networks	Related term	precision agriculture
blended learning	Related term	primary education
computer aided instruction	Related term	primary education
distance learning	Related term	primary education
education	Narrow Term	primary education
educational courses	Related term	primary education
educational institutions	Related term	primary education
STEM	Related term	primary education
teaching	Related term	primary education
accident prevention	Related term	public safety
aerospace safety	Related term	public safety
alarm systems	Related term	public safety
closed circuit television	Related term	public safety
computer crime	Related term	public safety
data privacy	Related term	public safety
disasters	Related term	public safety
diseases	Related term	public safety
domestic safety	Related term	public safety
electrical safety	Related term	public safety
emergency management	Related term	public safety
emergency services	Related term	public safety
epidemics	Related term	public safety
fake news	Related term	public safety
fire safety	Related term	public safety
fission reactor safety	Related term	public safety
food safety	Related term	public safety
government policies	Related term	public safety
health and safety	Related term	public safety
health care	Related term	public safety
marine safety	Related term	public safety
mobile computing	Related term	public safety
national security	Related term	public safety
police	Related term	public safety
pollution	Related term	public safety

public administration	Related term	public safety
road safety	Related term	public safety
safety	Narrow Term	public safety
safety devices	Related term	public safety
sensors	Related term	public safety
smart cities	Related term	public safety
terrorism	Related term	public safety
video surveillance	Related term	public safety
convolutional neural nets	Related term	representation learning
deep learning (artificial intelligence)	Related term	representation learning
feature extraction	Related term	representation learning
graph theory	Related term	representation learning
image representation	Related term	representation learning
knowledge representation	Narrow Term	representation learning
neural nets	Related term	representation learning
supervised learning	Related term	representation learning
unsupervised learning	Related term	representation learning
blended learning	Related term	secondary education
computer aided instruction	Related term	secondary education
distance learning	Related term	secondary education
education	Narrow Term	secondary education
educational courses	Related term	secondary education
educational institutions	Related term	secondary education
STEM	Related term	secondary education
teaching	Related term	secondary education
intelligent materials	Related term	shape memory polymers
martensitic transformations	Related term	shape memory polymers
plastic deformation	Related term	shape memory polymers
polymers	Narrow Term	shape memory polymers
shape memory effects	Narrow Term	shape memory polymers
thermoelasticity	Related term	shape memory polymers
thermomechanical effects	Related term	shape memory polymers
optical sensors	Narrow Term	single photon detectors
photodetectors	Narrow Term	single photon detectors
photon counting	Related term	single photon detectors
chemical reactions	Narrow Term	sonochemistry
food processing industry	Related term	sonochemistry
food technology	Related term	sonochemistry
materials preparation	Narrow Term	sonochemistry
ultrasonic applications	Related term	sonochemistry
ultrasonic effects	Narrow Term	sonochemistry
wastewater treatment	Related term	sonochemistry
water pollution control	Related term	sonochemistry
water treatment	Related term	sonochemistry
nanopatterning	BroaderTerm	surface patterning
photolithography	Related term	surface patterning
soft lithography	Related term	surface patterning
surface structure	Related term	surface patterning
surface treatment	Narrow Term	surface patterning

deformation	Narrow Term	tensile deformation
elastic deformation	Related term	tensile deformation
necking	Related term	tensile deformation
plastic deformation	Related term	tensile deformation
shear deformation	Related term	tensile deformation
tensile strength	Related term	tensile deformation
fluorescence	Narrow Term	thermally activated delayed fluorescence
light emitting diodes	Related term	thermally activated delayed fluorescence
spectra	Narrow Term	time-domain spectra
time resolved spectra	Related term	time-domain spectra
high-speed optical techniques	Related term	time-domain spectroscopy
spectroscopy	Narrow Term	time-domain spectroscopy
time resolved spectroscopy	Related term	time-domain spectroscopy
time-domain reflectometry	Related term	time-domain spectroscopy
computer vision	Related term	transformers (machine learning)
convolutional neural nets	Related term	transformers (machine learning)
deep learning (artificial intelligence)	Narrow Term	transformers (machine learning)
feature extraction	Related term	transformers (machine learning)
image classification	Related term	transformers (machine learning)
image segmentation	Related term	transformers (machine learning)
medical image processing	Related term	transformers (machine learning)
natural language processing	Related term	transformers (machine learning)
object detection	Related term	transformers (machine learning)
pattern classification	Related term	transformers (machine learning)
text analysis	Related term	transformers (machine learning)
fault diagnosis	Related term	variational mode decomposition
feature extraction	Related term	variational mode decomposition
power engineering computing	Related term	variational mode decomposition
signal processing	Narrow Term	variational mode decomposition
vibrational signal processing	Related term	variational mode decomposition
yttrium compounds	Narrow Term	yttria-stabilised zirconia
zirconium compounds	Narrow Term	yttria-stabilised zirconia

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