



درس: زبان تخصصی

رشته: ساخت و تولید

شماره جلسه: ۱

مقطع: کارشناسی

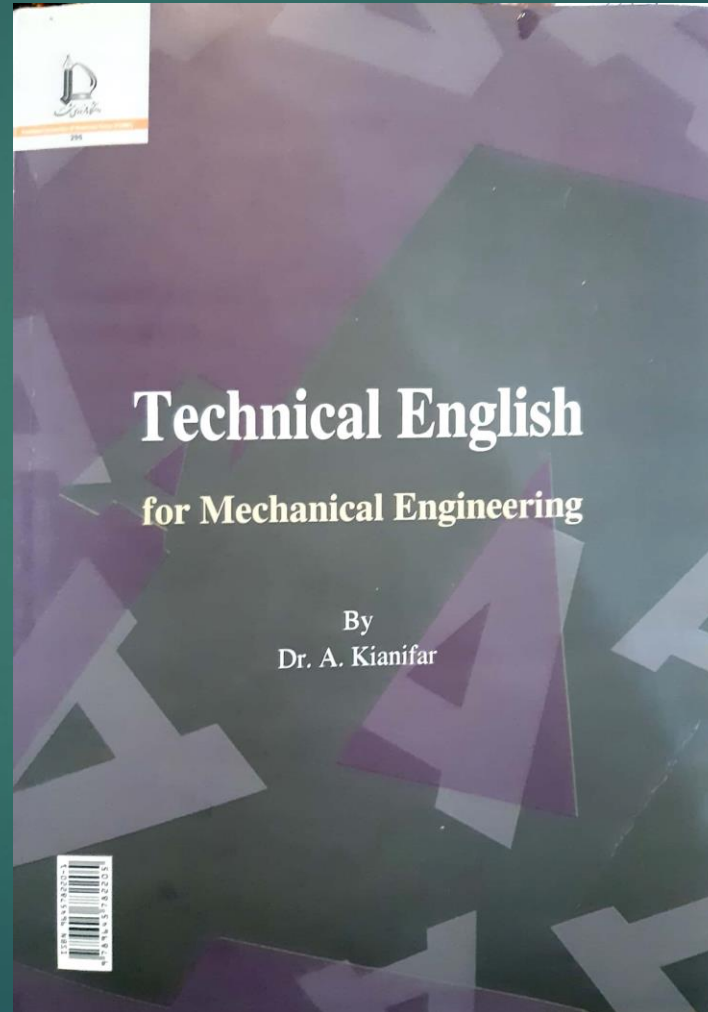
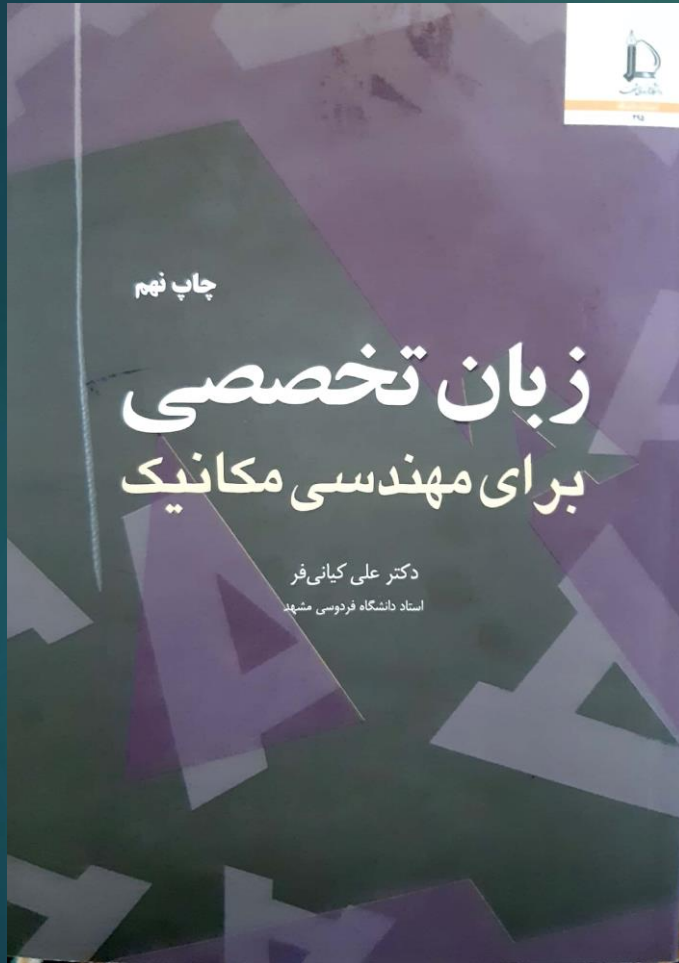
نیمسال دوم ۹۸-۹۹

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منبع اصلی درس زبان تخصصی کتاب معرفی شده



Unit 1

Friction

It is found by experience that when one body slides on other, a force is set up which resists the motion. This force is called the frictional force or more briefly the FRICTION. The direction of the friction is always opposite to the direction in which the body tends to move.

If we place a block of metal A on top of surface B, attach a string to A, Pass it over a Pulley and fix a scale pan at the lower end. Then, add weights to the pan until body A begins to move, as shown in fig (1). We can observe that the weights in the scale pan plus the weight of the scale itself equals to force F.

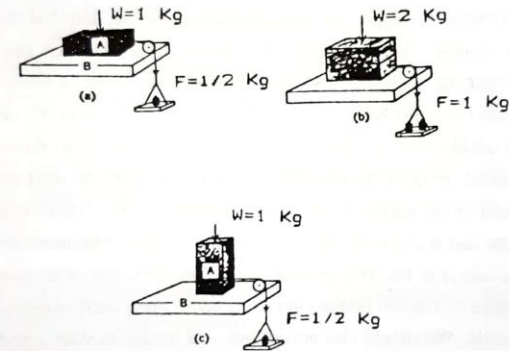
Suppose body A weighs one kilogramme(kg) and we find that the force to overcome friction is half a kg (fig 1-1a). We could then say that the frictional force F is half the normal load W. If we increase the weight of block A to two kilogrammes (fig 1-1b) then we will find that the force to slide the new weight over B is roughly one kg, that is, half the normal load. This illustrates that: FRICTIONAL FORCE IS PROPORTIONAL TO THE NORMAL LOAD.

The ratio of the friction to the load is defined as the COEFFICIENT OF FRICTION and is shown by the greek symbol μ (mu). Therefore $\mu = F/W$, in the above case μ is 1/2. This relation shows that the value of friction depends on the nature of the two bodies contacting each other, their materials and the normal weight. We should also notice that, it is harder to start a body moving than to keep it moving. This was first pointed out by the Greek scientist Themistius over 2000 years ago. The force to start the body moving is called the STATIC friction and the force to keep it moving. The KINETIC or SLIDING friction. Generally, the value of static friction (or LIMITING friction) is slightly greater than kinetic friction.

We can also find that the frictional force will not depend on which way block A is rested on surface B, whether with its small face or its large face in contact (fig 1-1c). Hence, friction does not depend on the apparent area of the contacting surfaces.

In rolling and rotating motion there is also a coefficient of friction but its value is much lower than sliding friction. In figure (1-2), if the weight of the wheel or roller is W and a force F is applied at the center to enable rolling to take place then, we can say that the ROLLING FRICTION (F_R) = $\mu_R W$.

For a hard steel roller on a hard steel surface, μ_R may be as little as 0.001, that is, the rolling force is only one thousandth of the normal load. This situation operates in ball and roller bearings. With more deformable materials the rolling friction is higher but even for a rubber tire on a road the rolling friction is 0.05. Clearly it is advantageous to convert sliding motion into rolling motion.



Figure(1.1) A simple method of measuring the friction between body A and surface B.

ترجمہ لغات Unit 1

اصطلاحات		لغات
found =	پیدا کرنے	لغات ہم دریں:
experience =	تجربہ	advantageous =
slides =	لغزموں	convert =
force =	نیرو	
set up =	ایمان کرنا	
resists =	مقاومت کرنا	
motion =	حرکت	
briefly =	مختصر طور پر	
direction =	جہت	
opposite =	دخلاف	
tends =	تعمیل	
surface =	سطح	
attach =	اتصال	
string =	رسیاں	
Pulley =	قرقرہ	
scale pan =	کھارڑو	
weights =	وزن	
begins =	شروع	
fig (7) =	شکل 7	
observe =	مشاہدہ کرنا	
equals =	برابر	
suppose =	فرض کرنا	
overcome =	میں سے بڑھ کر	
half a kg =	نیم کلو	
load =	بار	
increase =	افزائش	
roughly =	تقریباً	
illustrates =	سائنس سے	
Proportional =	متناسب	
ratio =	نسبت	
defined =	تعریف کرنا	
coefficient of friction =	اصطلاح	
Greek symbol =	یونانی حرف	
relation =	رابطہ	
depends =	بستگی دار	
nature =	ماہیت	
contacting =	درخاک	
materials =	مواد	
Scientist =	دانشمند	
Themistius =	تھیمیستیس	
2000 years ago =	2000 سال پہلے	
static friction =	اصطلاح	
kinetic or sliding friction =	اصطلاح	
Limiting friction =	اصطلاح	
slightly =	کچھ	
rested =	خواب	
apparent area =	نامی سطح	
rolling and rotating motion =	گولنے اور چمکنے کی حرکت	
enable =	مقابلہ کرنا	
Hard steel roller =	تھکے فولادی گولنے	
one thousandth =	ایک ہزارویں	
Situation =	موقعیت	
operates =	نہا کرنا	
deformable =	شکل پذیر	
rubber tire =	تھکے ٹائیر	
clearly =	بہتر	

Unit 3

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Unit 3

Hammers

We use nails for nailing things together and a hammer to drive the nails in. A hammer consists of two main parts a head and a handle. The head of a hammer includes a peen, a flat end and a hole into which the hardwood handle is fitted.

Hammers serve different purposes. For example, the Straight peen hammer is used for riveting, spreading or drawing out metal and forming grooves, beads or flanges in a flat sheet metal to stiffen it. The stone Mason hammer has a chisel type steel head and is used by masons for all general cutting, rough dressing, and splitting of stones.

We can classify hammers according to the vocations in which they are used. Tinnerns, Riveting, Straight Peen and Ball Peen hammers are among plumbing tools. Cross Peen and Straight Peen hammers are among machine shop tools. Claw, Plastic, Rawhide and Wood Mallet hammers are used by carpenters. Bush, Stone Mason, Brick, Mash and Toothed hammers belong to masonry (fig 3.1).

ترجمه لغات Unit 3

Nails = میخ	Hammers = چکش	ردین ۳
drive = درین بردن	vocations = شغل حرفه	
consists = مشتمل	tinners = چکش کارها	
main parts = اجزا اصلی	plumbing tools = ابزارهای لوله کشی	
head = طاق	Machine shop tools = فرودگاه ابزار آلات	
handle = دسته	Claw = چنگ	
peen = مستطون چکش	Rawhide = پوست	
hardwood = چوب سخت	Wood Mallet Hammers = چکش چوب (خارجی)	
fitted = قرار گرفتن	Carpenters = نجاران	
serve = در خدمت	Bush = بوش	
purposes = اهداف	stone Mason = سنگ کار	
riveting = برنج کردن	Brick = آجر	
spreading = پخش کردن	Mash = نرم	
drawing out = خارج کردن	Toothed = دندانه دار	
forming grooves = ایجاد گریز	Masonry = سنگ کاری	
beads = مهره		
stiffen = سخت کردن		
stone Mason hammer = چکش مخصوص سنگ کاری		
chisel = تیزنانه، طاقه تازنده		
masons = سنگ کارها		
cutting = برش		
rough dressing = ضیق تراشی		
splitting = جدا کردن		
stones = سنگها		
classify = طبقه بندی کردن		
according = مطابق با		

Unit 7

The Main Source Of Energy

Nearly all energy comes from the sun, either in a roundabout way or straight from it, in the form of heat rays and light rays. The light from the moon, too, comes from the sun. The moon can be said to be like a large mirror which throws back the sun's light to the earth.

Electrical energy comes from the sun in a roundabout way, for example, it can come from the power of water falling down a mountainside. The water fell there as rain, and we know that rain is made by the sun's heat evaporating the water on the earth's surface. This water vapour rises, condenses on cooling, and falls as rain.

The light and heat energy from coal also comes from the sun in a roundabout way, coal was made by the rocks pressing on trees and plants which died millions of years ago. Those trees and plants grew with the aid of sunlight, from which they made carbohydrates, in this way changing the sun's energy into chemical energy. when we burn coal, some of this energy is set free.

Energy which we use to drive car engines comes from the petrol, which also was made with the aid of the sun in a roundabout way. plants, and animals which ate the plants, died millions of years ago, and the parts of them that left were pressed under the rocks in the earth. These parts left from dead animals and plants made petroleum, from which petrol and oil are now obtained.

Thus we can say that the sun is the place where nearly all energy comes from, and that without the sun's heat and light, there could be no life on earth.

Unit 7 ترجمه لغات درس

The Main source of Energy		درس ۷
منبع اصلی انرژی		
Nearly = تقریباً	petroleum = نفت خام	
roundabout way = به صورت غیر مستقیم	petrol & oil = ریفون و بنزین	
heat rays = طیف گرمایی	obtained = بدست آمدن	
light rays = صیف نوری	life = زندگی	
moon = ماه		
Sun = خورشید		
mirror = آینه		
earth = زمین		
Electrical energy = انرژی الکتریکی		
water falling = زریقی آب		
mountainside = کوه		
vapour = بخار		
rises = بالا رفتن		
condenses = فشرده شدن		
falls = باریدن، زریقی		
rain = باران		
coal = زغال سنگ		
rock pressing = فشار دادن سنگ		
died = مرده		
aid = کمک		
sunlight = نور خورشید		
carbohydrates = کربوهیدرات		
chemical energy = انرژی شیمیایی		
burn = سوختن		
petrol = بنزین		

با آرزوی موفقیت برای دانشجویان عزیز