...going one step further
Knee Joint, 12-Part

The knee joint is the largest joint in the human body. It is formed by the femur, tibia and patella. The patella is secured by the insertion tendon of the quadriceps muscle. The joint is stabilized by the anterior and posterior cruciate ligaments, the lateral collateral ligament and the medial collateral ligament, as well as the tendons of the thigh musculature. Besides flexion and extension, medial and lateral rotation are possible while the knee is bent. Thereby the anterior femoral muscles affect extension and the posterior muscles affect flexion. The medial flexors attaching to the tibia rotate the lower leg medially, the ones attaching laterally rotate it laterally. Rolling and sliding movements take place between the joint surfaces of the femur and tibia. Moveable tapered half-round cartilage disks (menisci) thereby balance the unevenness between the joint surfaces and increase the load-transferring contact surface. The medial meniscus adheres to the tendon that attaches the femur to the tibia outside of the articulation capsule. The lateral collateral ligament lies external to the articulation capsule and attaches the femur to the head of the fibula. Medial collateral- and lateral collateral ligaments prevent lateral movement of the lower leg. The cruciate ligaments are located in the interior of the articulation capsule. The anterior cruciate ligament runs from the lateral condyle of the femur to an anterior insertion surface between the condyles of the tibia. Conversely, the posterior cruciate ligament runs from the medial condyle of the femur to a posterior insertion surface between the condyles of the tibia. The cruciate ligaments hold the joint together and prevent the condyles of the femur from slipping off of the tibial plateau.

1  Vastus lateralis muscle
2  Iliotibial tract
3  Biceps femoris muscle
4  Tibia, lateral condyle
5  Fibular head
6  Gastrocnemious, lateral head
7  Tibialis anterior muscle
8  Fibularis longus muscle
9  Extensor digitorum longus
10 Quadriceps femoris muscle, tendon
11 Vastus medialis muscle
12 Patella
13 Femur, medial condyle
14 Sartorius muscle
15 Tibia, medial condyle
16 Patellar ligament
17 Gastrocnemious, medial head
18 Soleus muscle
19 Tibia, medial surface
20 Gracilis muscle
21 Semitendinosus muscle
22 Semimembranosus muscle
23 Biceps femoris muscle
24 Plantaris muscle
25 Pes anserinus (insertion together with the sartorius muscle, the gracilis muscle and the semitendinosus muscle)
26 Biceps femoris muscle, long head
27 Biceps femoris muscle, short head
28 Femur, lateral condyle
29 Popliteus muscle
30 Lateral ligament
31 Lateral meniscus
32 Anterior ligament of the fibular head
33 Fibula
34 Interosseus membrane of the lower leg
35 Articular muscle of the knee
36 Femur
37 Adductor magnus muscle
38 Articular surface of the patella
39 Anterior cruciate ligament
40 Medial meniscus
41 Collateral ligament
42 Tibial tuberosity (insertion of the tendons of the tibia)
43 Quadriceps femoris muscle
44 Tibia
45 Posterior cruciate ligament
46 Tibialis posterior muscle
47 Flexor digitorum longus muscle
48 Popliteus surfaces of the femur
49 Rectus femoris muscle, tendon
50 Transverse ligament of the knee (between the medial and lateral meniscus)
51 Posterior meniscofemoral ligament [Wrisberg ligament]
A  Muscles on the anterior aspect of the right knee

B  Muscles on the posterior aspect of the right knee

C  Muscles on the medial aspect of the right knee

D  Muscles on the lateral aspect of the right knee

E  Anterior aspect of the right knee joint without articulation capsule; muscle origins are pictured in red and muscle insertions are pictured in blue

F  Posterior aspect of the right knee joint without articulation capsule; muscle origins are pictured in red and muscle insertions are pictured in blue

G  Posterior aspect of the right knee joint without articulation capsule after excision of removable muscles; muscle origins are pictured in red and muscle insertions are pictured in blue

H  Medial aspect of the right knee joint without articulation capsule; muscle origins are pictured in red and muscle insertions are pictured in blue

I  Lateral aspect of the right knee joint without articulation capsule; muscle origins are pictured in red and muscle insertions are pictured in blue