```
R=QQ[s1,s2,s3,t1,t2,t3,m_1..m_5];

-- Student matrix:
S = matrix{{s1},{s2},{s2},{s3}};

-- Teacher matrix:
T = matrix{{t1},{t2},{t2},{t3}};

-- Data distribtion induced inner product matrix:
M = matrix{{m_1,m_2,m_2,m_3},{m_2,m_3,m_3,m_4},{m_2,m_3,m_3,m_4},{m_3,m_4,m_4,m_5}};

-- Weighted distance loss function:
loss = transpose(S-T)*M*(S-T);

-- Gradient of the loss function:
grad_loss = matrix{{diff(s1,loss)},{diff(s2,loss)},{diff(s3,loss)}};
f=s1*s3-s2^2;

-- Augmented Jacobian matrix:
AugJac = transpose(matrix{{diff(s1,f)},{diff(s2,f)},{diff(s3,f)}}|grad_loss);

-- Extended ED Correspondence:
EDCext = saturate(minors(2,AugJac)+f,ideal(s1,s2,s3));

-- Constructing ramification locus in the Extended ED Correspondence:
EDCextJac = transpose(jacobian(EDCext));
EDCextJacSt = submatrix(EDCextJac,,{0,1,2});
RamifLoc = saturate(EDCext+minors(3,EDCextJacSt),ideal(s1,s2,s3));

-- Extended ED disriminant:
discrim = eliminate({s1,s2,s3},RamifLoc)
first first entries gens discrim
```